

# ACTImod – THE ACTIVE MODULES

## VOLUME 1 - HANDBOOK

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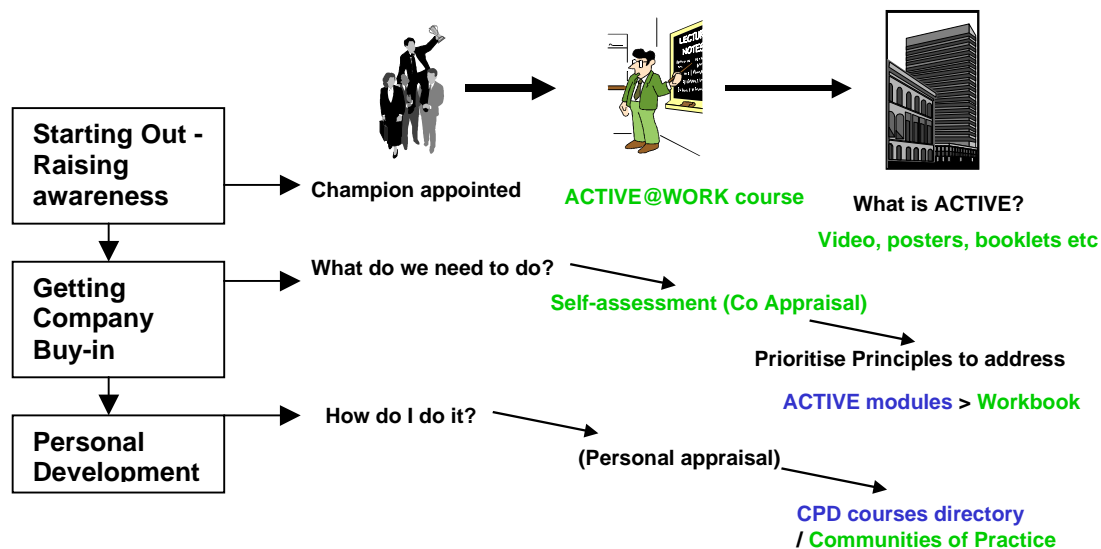
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## 1.1 ACTImod – THE ACTIVE MODULES

### 1.1.1 INTRODUCTION

“ACTIVE seeks to achieve a competitive world-class UK process engineering and construction industry with satisfied clients, thriving contractors and suppliers by transforming the way in which they deliver projects world-wide.”



A key part of making ACTIVE a success is to educate Champions and Practitioners throughout the supply chain in making the ACTIVE Principles the normal way of working in their companies by developing appropriate learning tools. We expect every company to appoint a Champion to drive forward the changes, which will be needed to become an ACTIVE company. There is a special course for Champions called “ACTIVE @ WORK” which has been developed in partnership with Cranfield University. Note –ACTImod does not require someone who has been on the ACTIVE @ WORK course to run the modules. To help the Champion explain what ACTIVE is and start the process of raising awareness amongst colleagues there are three useful aids:

- ACTIVE Video
- ACTIVE Principles Poster
- ACTIVE Principles Booklet

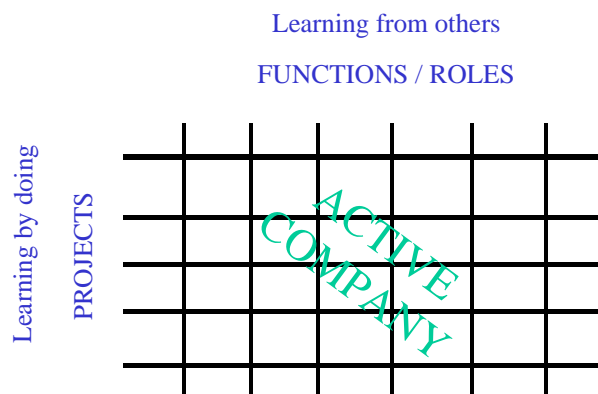
With this background knowledge of ACTIVE and having raised awareness of the potential benefits, someone is bound to ask, “**What do we need to do?**”!!!!

This is the natural lead into completing the ACTIVE self-assessment questionnaire. This will highlight the relative strengths and weaknesses of the company in applying the eight ACTIVE Principles. This should trigger people to look for ways to improve

in those weaker areas and this is where the ACTIVE Modules will help. There is one ACTIVE Module for each of the eight Principles. Start with the Principle, which is the weakest; then work through the rest at a pace, which suits your circumstances. Note - the more time you can invest in ACTImod, the sooner you will start to reap the rewards!

Clearly, any training activity should be integrated into the company's overall training programme, so talk to the person responsible for training as soon as possible. There may well be other change initiatives under way or planned and again the person responsible should be consulted to ensure a joined-up approach. People want to be clear that all these possible demands on their time make sense as a whole rather than being a collection of worthy but uncoordinated set of initiatives!

Beyond ACTImod, individuals may ask, “**How do I do it?**” This is not specifically within the scope of ACTImod and is seen more as Continuing Professional Development. ACTIVE plans to compile a Directory of suitable courses available to raise the skills of individuals in specific Value Enhancing Practices.



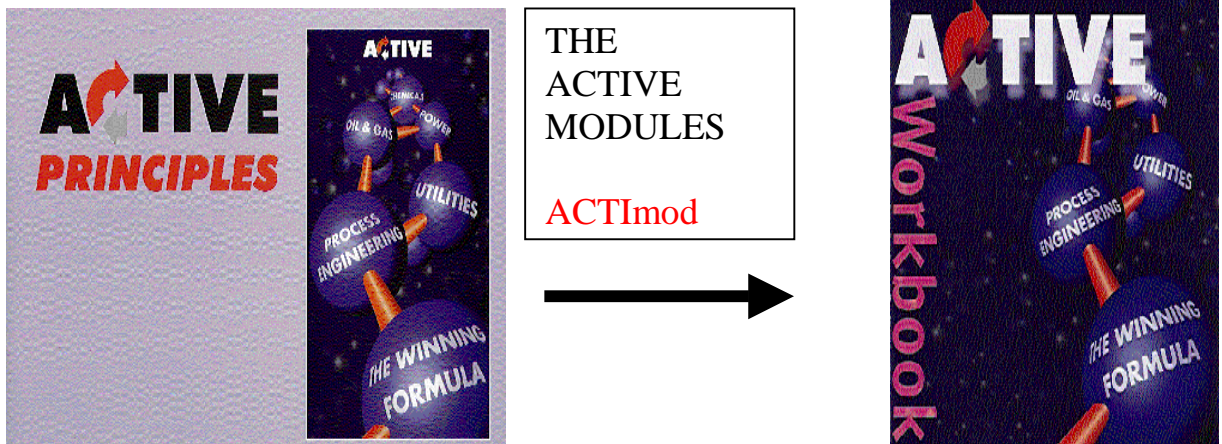
We all learn things by doing them ourselves; i.e. hands-on practice makes perfect! Ideally, people should have the opportunity to work on projects, which have adopted the ACTIVE Principles. However, not everyone may get the chance to be involved in an ACTIVE project in the short term, so the alternative is learning from others. ACTImod offers a window on the collected learning experiences of practitioners from the companies who are members of ACTIVE. These experiences were made explicit in the comprehensive ACTIVE Workbook. It was compiled through a number of working groups, which reached consensus on what were the best practices on the ACTIVE Principles. However, the Workbook can be a bit daunting to the newcomer!

### Why an ACTIVE module?



- ☞ Route into workbook
  - ☞ Transfer & embed knowledge from workbook into company
  - ☞ Tie into a "process" of changing into an "ACTIVE" company
- 8-10 people from across the company
  - variety of functions / roles

ACTImod is designed to bridge the gap between the overview given in the ACTIVE Principles Booklet and the detail given in the ACTIVE Workbook.



### 1.1.2 HOW THE MODULE WORKS

The Modules have been designed to be as flexible as possible around the basic concept that each Module will be run in-house for four hours, involve some 8-10 colleagues from across a variety of functions and roles, and be facilitated by the Champion or his nominee. Clearly, companies and individuals will be at various levels of knowledge on the ACTIVE Principles and to varying extents have access to relevant training courses. During the piloting of the modules, some companies “cherry picked” the presentational material, incorporated their own in-house material and ran a module over some 2-3 hours. Some involved a cross-section of senior managers, others a small group from across the company. Of course, the material can be used in other ways, such as:

- to help a project team during its formation;
- to help individuals improve their appreciation of a specific Principle through private study or to help them solve a particular problem or grasp a new opportunity;
- To help build relationships with suppliers and / or customers.

### 1.1.3 WHAT ATTENDEES SHOULD GET OUT OF A MODULE

These are some of the reasons why an attendee should invest their time in an ACTIVE Module:

- A deeper appreciation of the meaning and significance of the ACTIVE Principle to their work and that of their colleagues.
- A desire to work with the ACTIVE champion and colleagues to bring the ACTIVE Principles into the company’s planning, projects and supporting functions.
- A desire to use the ACTIVE Workbook at every appropriate opportunity.
- An insight into any needs for personal development or gaps in specific knowledge and a route for bringing this into their normal staff appraisal.

Ultimately, it should:

- Make their working life easier and happier by reducing misunderstandings, need for re-work and most of the other things, which they get frustrated about!
- Increase their recognition, rewards and career prospects as more companies strive to find people who are familiar with the ACTIVE way of working and can make it work!

#### **1.1.4 WHAT THE COMPANY SHOULD GET OUT OF A MODULE**

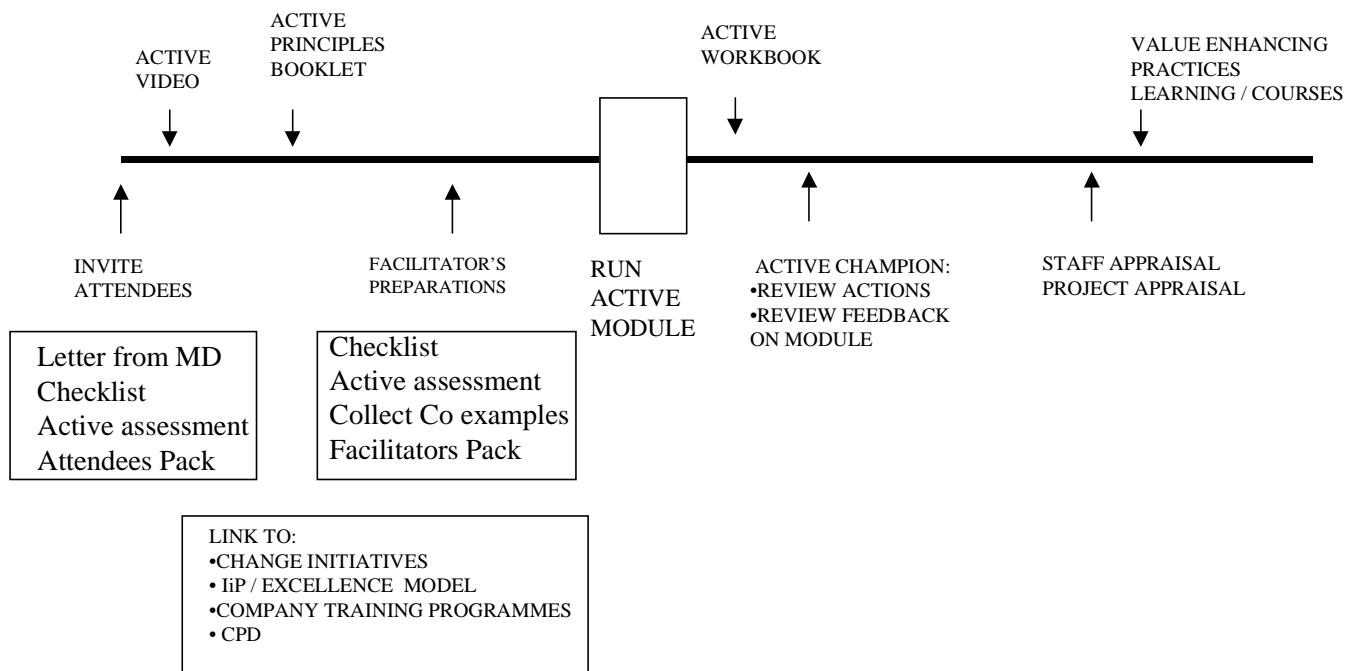
The champion or facilitator will judge the success of a module if:

- Attendees come away with a more positive attitude towards ACTIVE.
- Attendees make a commitment to take specific actions as a result of attending.
- Attendees want to learn more about other ACTIVE Principles.
- Attendees spread the word to colleagues that they should also attend.
- Attendees ask to work on ACTIVE projects.
- The Group wants to keep in contact with and support each other.
- Relationships in the supply chain are improved.

## 1.2 ROUTE MAP TO AN ACTIVE MODULE

Below is a suggested timeline to ACTImod for use either in a company, on a project or for individual study.

### ACTImod - TIMELINE



If possible get the Managing Director to directly invite attendees to participate in ACTImod. This will demonstrate the company's commitment to the ACTIVE Principles and encourage attendees to take it seriously!

The facilitator will play a key role in making ACTImod a success and should prepare using the facilitator's pack (see APPENDIX 1).

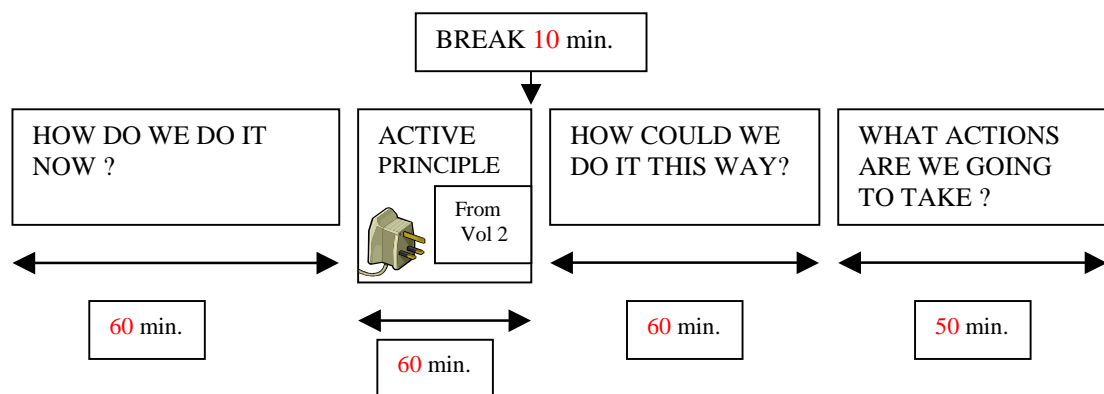
Attendees should each get an attendee's pack (see APPENDIX 2), which will enable them to prepare thoroughly for ACTImod with the minimum of effort.



## 1.3 THE PLUG AND PLAY MODULE

Each ACTIVE Module uses a framework of four elements, of which three are common to all eight modules and the fourth is what we call “plug and play”. The common elements are contained in this Volume. The “plug and play” Principles are in Volume 2.

The diagram below suggests how a **four-hour** session might be structured:



(Note the organiser will need to adjust timings to suit the way they will run the module.)

The session has been designed to be as interactive as possible. Apart from the “plug and play” Principle, which involves presenting the details behind a Principle, the other elements should involve everyone in debate, dialogue and generating ideas.

### 1.3.1 How do we do it now ?

The aim of this element is to draw out from attendees firstly if they see the relevance of the Principle to their own work and then how it affects their approach to their work. Each attendee could be asked:

What do you understand / mean by ACTIVE PRINCIPLE in the context of your function / role ?

This should bring out differences in understanding and approach across the mix of attendees.

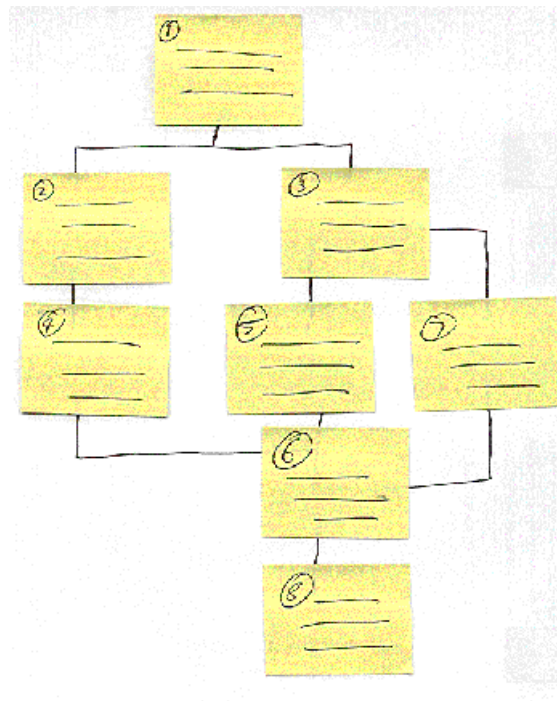
After exploring the Principle from each individual’s perspective, the Group with the aid of the facilitator should map out their understanding of the company’s process or approach to managing that Principle:

- Where do we do it well?

➤ Where do we do it badly?

This should draw out attendees' experiences of working on projects either directly as part of a project team or indirectly as support to an external requirement of a project team. Even, the "tea-person" plays a part in keeping a project on track!

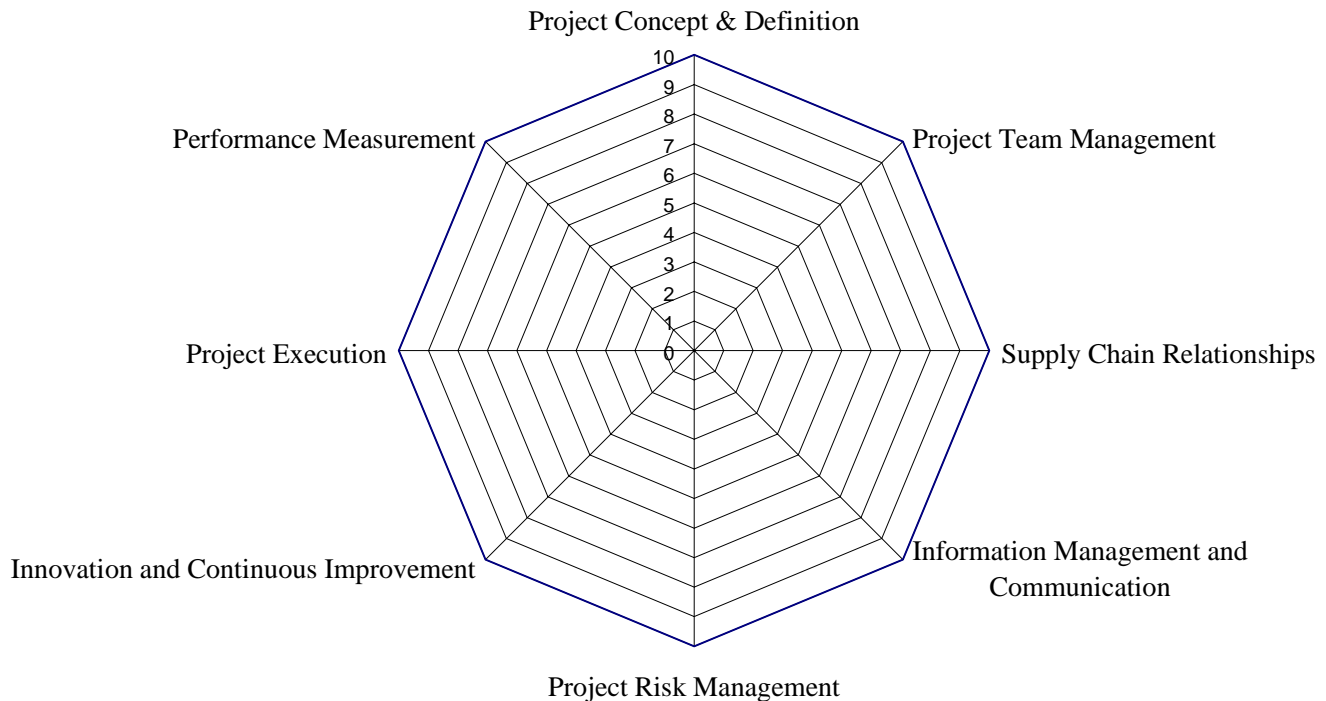
Probably the best approach to mapping is to use "Post-it" notes to identify and list the individual steps in the process and then use the flip chart to link these together into a flowchart:



This will bring out attendees' understanding of how things are done now! It may be that there are gaps or errors in this mapping but any discussion should be delayed until after the "plug and play" Principle has been presented.

➤ Let me tell you how it really is!

The facilitator should then talk about some of the company's successful and less successful projects and get attendees to discuss any lessons learnt. The facilitator could also highlight the relative score for that Principle versus the other seven Principles using a spidergram:



The facilitator could then go into more details of the scoring on that specific Principle from the ACTIVE Index.

- What can we do to make it better?

This should now be the perfect time to introduce the “plug and play” Principle!

### 1.3.2 ACTIVE Principle

Insert appropriate “plug and play principle” from Volume 2:

The choice and running order of modules is entirely up to you. However, we believe most benefit may be gained by covering first those areas from Principles AP2 to AP6 where you see most potential for improvement. You could then go on to Principles AP1 and AP7 for a “fitness” check to see how effectively you are applying Principles AP2 to AP6 on a case study. This may highlight the need to run another of the modules from AP2 to AP6. Finally, you could run Principle 8 to ensure you have the best system for measuring your performance on projects.

- AP2 – **Project Team Management** Establishing and maintaining a single integrated team with clearly defined roles and responsibilities and shared common objectives.
- AP3 – **Supply Chain Relationships** Ensuring that supply chain relationships work to maximise value and equitably share both risks and benefits.
- AP4 – **Information Management and Communications** Timely management of relevant information using appropriate technology and clear documentation to aid communication throughout the team.
- AP5 – **Project Risk Management** Using a structured process for managing risk and assigning responsibility to those in the supply chain best able to manage it.
- AP6 – **Innovation and Continuous Improvement** Encouraging a challenge culture with processes for capturing learning and regarding innovative ideas throughout the supply chain.

Principles AP1 and AP7 are treated together through a case study:

- AP1 – **Project Concept and Definition** Setting clear aligned objectives and scope with defined, well understood implementation strategies.
- AP7 – **Project Execution** Managing the implementation process to integrate activities efficiently to successfully achieve project objectives.
- AP8 – **Performance Measurement** Defining key performance indicators, which demonstrate the achievement of, project goals and benchmarking.

### 1.3.3 How could we do it this way ?

Start off on a positive note! Explore “What would we gain – as individuals, as teams, as a company - if we adopted this way of working?”

- Opportunities
- Benefits
- Incentives

List attendee’s ideas on one flip chart.

Then ask “What’s holding us back ?”

- Not Invented Here – “*we’re different*” – “*it won’t work here*”
- Culture – “*our approach to doing things*” – “*only seeing it our way*”
- Roll-out – “*losing momentum*” – “*returning to old ways*” – “*when things go wrong blame the new approach*”
- Measurement System – “*does it support or hinder change?*” – “*in whose eyes is it fair?*”

- Why change? – “*nothing’s broken so why try to fix it?*”

List attendees’ ideas on a second flip chart. Place both charts next to each other as a lead in to the next section:

What would we gain?	What’s holding us back?
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____

### 1.3.4 What actions are we going to take ?

Draw up some action plans to take advantage of the opportunities or to overcome some of the barriers:

As individuals

As teams

As a company

Some of the proposed actions may relate to one or more of the other seven ACTIVE Principles. This should be encouraged, as there are close linkages between all eight Principles!

Having completed a module the group should re-do the spidergram. This should highlight which module should be tackled next. It may be sensible to do this after the session if time at this stage is tight.

Attendees should now want to:

*Pick up the Workbook and use the VEPs!*

### **1.3.5 Do you want to stay together to see it through ?**

Creating a self-help / support group may be a useful outcome of the session. People in some companies have found it valuable to be part of small informal groups from a mix of functions and roles. The group can foster and support each other's efforts to bring about continuous improvement, change and personal development. If the group involved in the session develops some rapport amongst themselves then suggesting that it is OK for them to form such an informal group has management's blessing! However, such groups should not be institutionalised within the formal organisational structure.

## **2 – THE FACILITATOR’S PACK**

### **Inviting attendees**

If you are organising the module, then think carefully who should attend. It will clearly depend on your company size, the current climate within the firm, the character / behaviour of each attendee, etc. There is merit in trying to engage with the full breadth of functions / roles and levels within the company from strategic, tactical and operational areas. Consider attendees’ line management reaction and ensure that attendees are invited in a positive atmosphere!

Ideally, the invitation should go out from the Managing Director. It should make clear the importance and relevance of ACTIVE to the company’s and the attendee’s own future, and the senior management’s commitment to it!

### **Background on ACTIVE**

If you haven’t been on the ACTIVE @ WORK course, you should at least have:

- Seen the ACTIVE video
- Looked at the overview presentation (paper or CD-ROM) on ACTIVE
- Read the Principles booklet
- Read the introduction to each Principle in the ACTIVE Workbook.

If you are not the ACTIVE champion ensure you have spoken to them about the current status of ACTIVE within the company and future ACTIVE plans. An overall Implementation Process has been produced to help a company implement ACTIVE. There are eight components:

- Gaining ACTIVE Commitment
- Becoming an ACTIVE Champion
- Completing an ACTIVE Assessment
- ACTIVE Action Planning
- Networking with ACTIVE
- ACTIVE Training and Education (including ACTImod)
- Registering ACTIVE Projects
- Measuring ACTIVE Performance

There are a series of notes on each component available from the ACTIVE Secretariat or via the website.

### **Completing company assessment & extracting relevant bits for module**

It is absolutely essential that the ACTIVE Index Assessment scoring has been completed prior to the module, the spidergram plotted and the relevant scoring for the specific Principle being covered in the Module is available for discussion during the session. You may want to ask the attendees to give their scores anonymously, as well as taking the views of a broader cross-section of the company. Clearly, it may not be

practicable to complete a comprehensive poll of the company's views prior to the module but gathering some data will make the session more rigorous!

### **Getting some in-house examples (good & bad)**

In order to make the issues raised by the ACTIVE Principle relevant to attendees, there are no substitute for real stories, case studies or anecdotes from your own in-house experiences. You may already have sufficient to call upon, otherwise speak with some of your colleagues to get a reasonable number of good and bad ones.

ACTIVE is developing case studies, which can be shared across companies. There are also lessons that can be drawn from the pilot projects, which ACTIVE is supporting to gain evidence of the value of working by the ACTIVE Principles. Please check on the ACTIVE website or with the ACTIVE Secretariat on the latest status of case studies.

### **Tips for running module**

**Room layout** should be informal with comfortable chairs, probably set out in a horseshoe, without tables. This will set the scene for an interactive session. There should be clipboards so people can take notes, etc. At least one flipchart should be available and ideally two. There should be plenty of large "Post-it" notes, pens and pencils. Make sure coffee, tea and water are available throughout the session. Make the room a phone (all types!) free zone and ensure that there are no other unexpected interruptions. Check that the room is quiet and that there will be no distracting noises e.g. building works!

**ACTIVE materials** should be available in the room:

- Spare copies of the Principles Guide
- Workbook (paper) – several copies if possible
- Workbook (CD-ROM optional)

**Welcome attendees**, everyone should introduce themselves. If they all know each other already, try a new angle! Some that have been tried and work include:

- Introducing yourself as an animal that most closely resembles you;
- Telling one amazing fact about yourself that the others couldn't know.

**Kick-off**, the session with a brief introduction to ACTImod to check that attendees have really done their homework! Beware of spending too long on preliminaries. You need to get people into a dialogue as soon as possible!

**Ground rules** will help the session flow, such as:

- Fair share of air time – *no interruptions*
- Headline – *give main point first then background*
- Notepad – *rather than interrupt someone's flow jot down reactions, associations, ideas etc so they can be fed in later*



- Check understanding before evaluating – *ask for clarification or repeat back to check your interpretation*
- Don't argue – *be constructive*
- Genuine questions – *No hidden agendas*
- Find value in ideas / opinions – *reserve judgement*
- Agree to take a different approach - from “*we have a PROBLEM to solve*” to “*we need to find a WAY to.....*”
- No mobile phones, phone calls, messages etc

A **Reporter** can be a great help in capturing key points from the session. Ideally, they should not be involved in the session, i.e. not the facilitator nor any of the attendees.

Copies of **ACTImod presentational material** should not be given out beforehand. Let attendees know that a full set of slides will be available after the session, so they do not have to worry about taking notes. This stops people racing ahead through the material rather than listening and participating actively in the session.

After the session give **constructive feedback** to:

- Attendees
- Champion
- Business sponsor
- ACTIVE Secretariat

## Quick Guide to facilitation

The role of facilitator is clearly critical to the smooth running of the session. If you have not had much experience as a facilitator then these basic guideline should help you in running the session.

The more preparation you can put in, the easier it will be!

The more relaxed you are at the start, the more chance you have of putting attendees at their ease. Remember most people are very apprehensive of such sessions. Once you gauge attendees' feelings and make them comfortable, you can up the pace, but always be sensitive to everyone's feelings. Look out for people who are very quiet or who are very vocal; both can be signs of tension.

If there is a very wide mix of attendees, suggest people come dressed casually or at least that men take off their jackets and ties but only if they are comfortable to!

Decide if you are going to be totally neutral and only facilitate or if you are going to get involved in the discussion. In-house facilitators find it difficult to be neutral unless the company is reasonably large and they are not well known to attendees. If yours is a small company then it is better to be yourself, as your views may be well known, but always show that you are prepared to listen and understand the other person's view of the world.

There are various well-known techniques that you can use to help the session generate ideas, solve problems and define actions. If you look at the design of the module, you may have spotted several of these built into the session, although they have not been called by their formal names:

- SWOT analysis (Strengths, Weaknesses, Opportunities, Threats)
- Force-field analysis (balancing driving and restraining forces)
- Fishbone analysis (cause and effect)
- Brainstorming

If you want to learn more about facilitation, creativity and problem solving techniques then there are various publications and courses, just a few are:

“Facilitation Skills” Frances and Roland Bee (1998) Institute of Personnel and Development ISBN 0-852292-733-9 (Tel: 020 8971 9000)

“Planning for Innovation” Clive Jones, Government Office for the South West

“The Memory Jogger II” Michael Brassard and Diana Ritter (1994) IFS International Ltd, ISBN 1-879364-44-1 (Tel: 01234 853605)

“The Creativity Tools” Diana Ritter and Michael Brassard (1998) IFS International Ltd, ISBN 1-57681-021-6 (Tel: 01234 853605)

If your training manager does not have recommended courses try the Institute of Personnel Development [www.ipd.co.uk/training](http://www.ipd.co.uk/training) and the Industrial Society [www.indsoc.co.uk](http://www.indsoc.co.uk) . Also check with your local Business Link and TEC for local providers.

And finally, Good Luck!

**Further information, contact:**

The ACTIVE Secretariat, 20 Eastbourne Terrace, London W2 6LE

Tel: 020 7957 3350 Fax: 020 7957 4322

E-mail: [active@activemail.demon.co.uk](mailto:active@activemail.demon.co.uk)

Web site: [www.active-website.com](http://www.active-website.com)

### Facilitator's Checklist BEFORE Module

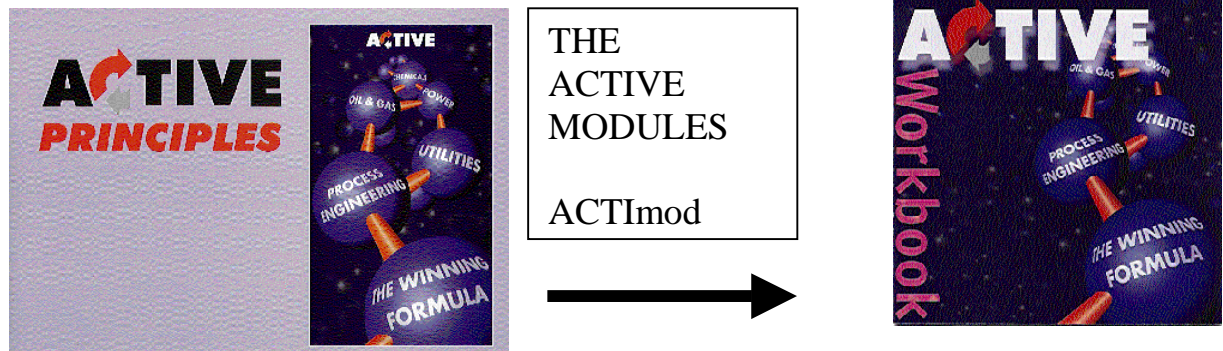
Task	Completed
Check availability & suitability of room	
Send invitations to attendees including date, time and location	
Send each attendee the "Attendees pack (including where to get ACTIVE video, one copy of ACTIVE Principles Booklet, one copy of the overview presentation (paper or CD-ROM) on ACTIVE)	
Ensure all attendees have access to ACTIVE video	
Check if attendees have access to the ACTIVE web site <b><u><a href="http://www.active-website.com">www.active-website.com</a></u></b>	
Complete assessment of ACTIVE index	
Discuss module with HR / training department and links to other initiatives, such as Investors in People	
Discuss with attendees' line managers their commitment to ACTIVE and their support for attendees post-module	
Collect examples, quotes etc (good & bad)	
View video	
Read Principles booklet	
Review ACTIVE overview presentation (paper or CD-ROM)	
Others:	

### Facilitator's Checklist AFTER Module

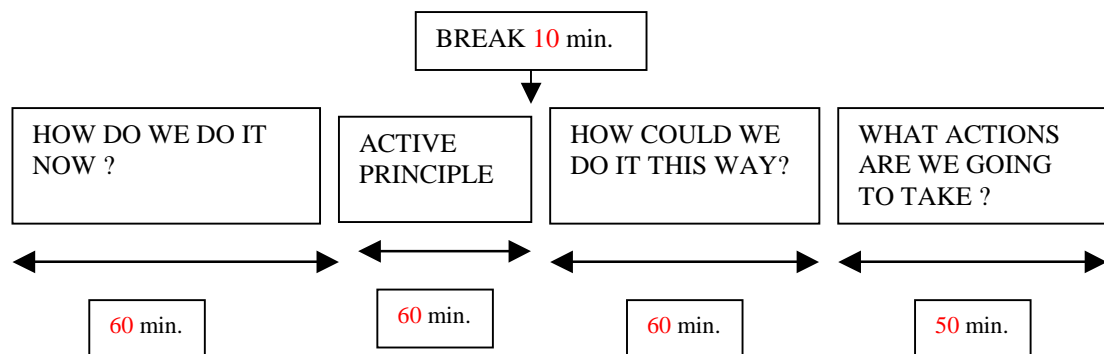
Task	Completed
Thank attendees	
Confirm that attendees have completed their feedback forms	
Review periodically action plans with attendees	
Complete your feedback to: <ul style="list-style-type: none"> <li>➤ Attendees</li> <li>➤ Champion</li> <li>➤ Business sponsor</li> <li>➤ ACTIVE Secretariat</li> </ul>	
Agree further involvement in running Modules with Champion	
Others:	

### 3 – THE ATTENDEE’S PACK

ACTImod is designed to bridge the gap between the overview given in the ACTIVE Principles Booklet and the detail given in the ACTIVE Workbook.



The diagram below suggests how the four-hour session will be structured:



(Note to organiser – Please insert the appropriate timing for your module.)

#### What you should get out of a Module

These are some of the reasons why you should invest your time in an ACTIVE Module:

- A deeper appreciation of the meaning and significance of the ACTIVE Principle to your work and that of your colleagues.
- A desire to work with the ACTIVE champion and colleagues to bring the ACTIVE Principles into the company’s planning, projects and supporting functions.
- A desire to use the ACTIVE Workbook at every appropriate opportunity.

- An insight into any needs for personal development or gaps in specific knowledge and a route for bringing this into your normal staff appraisal.

Ultimately, it should:

- Make your working life easier and happier by reducing misunderstandings, need for re-work and most of the other things which you get frustrated about!
- Increase your recognition, rewards and career prospects as more companies strive to find people who are familiar with the ACTIVE way of working and can make it work!

**Before the Session You should :**

**See the ACTIVE Video (15 Mins.)**

Make sure you have access to it!

**Look at the overview presentation (paper or CD-ROM) on ACTIVE**

**Read the ACTIVE Principles Booklet**

**Think about Principle – talk to colleagues**

ACTIVE PRINCIPLE

What do you understand / mean by ..... in the context of your function / role ?

**List Three opportunities**

Think how this Principle could help you to be more effective. Think creatively. Are there three opportunities, which you can see either for your own work, on projects, for your department, for the company, for customers or for your supply chain?

**List Three concerns**

Think about your three biggest concerns about this Principle?

**Complete the relevant part of the ACTIVE Index Assessment on this Principle**

## During the Session You should :

Abide by the following **Ground rules** to help the session flow:

- Fair share of air time – *no interruptions*
- Headline – *give main point first then background*
- Notepad – *rather than interrupt someone's flow jot down reactions, associations, ideas etc so you can be feed them at an appropriate point later*
- Check understanding before evaluating – *ask for clarification or repeat back to check your interpretation*
- Don't argue – *be constructive*
- Genuine questions – *No hidden agendas*
- Find value in ideas / opinions – *reserve judgement*
- Agree to take a different approach - from “*we have a PROBLEM to solve*” to “*we need to find a WAY to.....*”
- No mobile phones, phone calls, messages etc

## After the Session:

After the session give **constructive feedback** to:

- Facilitator
- Champion
- Line Manager
- ACTIVE Secretariat

## Tips for sharing what you learnt with colleagues

Depending on the size of your company, department or project team, it will be either a simple or a big task to put everyone through ACTImod! You can play your part in encouraging colleagues to either ask to join an ACTImod session, use the ACTImod material for individual learning. You might even offer to help them organise their own session with a group of colleagues and act as the facilitator! Discuss this with your line manager and your ACTIVE Champion. If you want help in developing your facilitation skills, then talk to your training manager. There are a number of published guides on facilitation, which you might find helpful, for example:

“Facilitation skills” 1998 Frances & Roland Bee, Institute of Personnel & Development, ISBN 0-85292-733-9.

## Tips for keeping on track after module

You should hopefully have come away from the session with some tangible actions! But what will happen when you get back into your daily routine??? It is all too easy to simply continue as before. Some ideas that have worked for people are:

- If you have a white board or somewhere where you can jot down something, put up the key words for the Principle. If you have a computer you could even put these key words into your screen saver!
- Put your actions into a to-do list. Some people have even added them to the top of their weekly shopping list so they have at least to review progress every week!
- Ask one of your colleagues to act as your “conscience”! Give him/her a copy of your action plan and ask them to prompt you at regular intervals with “*how are you getting on !*”. If you agreed at the end of the session to form a self-help group, then use one of the other attendees from your session.

### **Getting more involved in ACTIVE**

If you want to network with people from other companies who have similar interests, look at the InterACTIVE Network, which organises regular meetings around a variety of topics (see the ACTIVE website or contact your Champion).

### **Further information, contact:**

The ACTIVE Secretariat  
20 Eastbourne Terrace  
London W2 6LE  
Tel: 020 7957 3350  
Fax: 020 7957 4322  
E-mail: [active@activemail.demon.co.uk](mailto:active@activemail.demon.co.uk)  
Web site: [www.active-website.com](http://www.active-website.com)



### Attendee's Checklist BEFORE Module

Task	Completed
Check your "Attendees pack (should include where to get ACTIVE video, one copy of ACTIVE Principles Booklet, one copy of the overview presentation (paper or CD-ROM) on ACTIVE)	
View ACTIVE video	
Read Principles booklet	
Review ACTIVE overview presentation (paper or CD-ROM)	
Check access to the ACTIVE web site <b><u>www.active-website.com</u></b>	
Discuss Principle with your line manager and colleagues	
Note your three opportunities and concerns to bring along to the session.	
Complete the relevant part of the ACTIVE Index Assessment for the Principle.	
Check date, time and location of session	
Others:	

### Attendee's Checklist AFTER Module

Task	Completed
Complete your feedback to: <ul style="list-style-type: none"> <li>➤ Facilitator</li> <li>➤ Champion</li> <li>➤ Line Manager</li> <li>➤ ACTIVE Secretariat</li> </ul>	
Discuss your action plan with your line manager	
Discuss your personal development needs with your line manager and training manager.	
Check availability / access to ACTIVE Workbook	
Agree further involvement in running Modules with Champion	
Others:	

## ACTIVE Index Assessment (worked example)

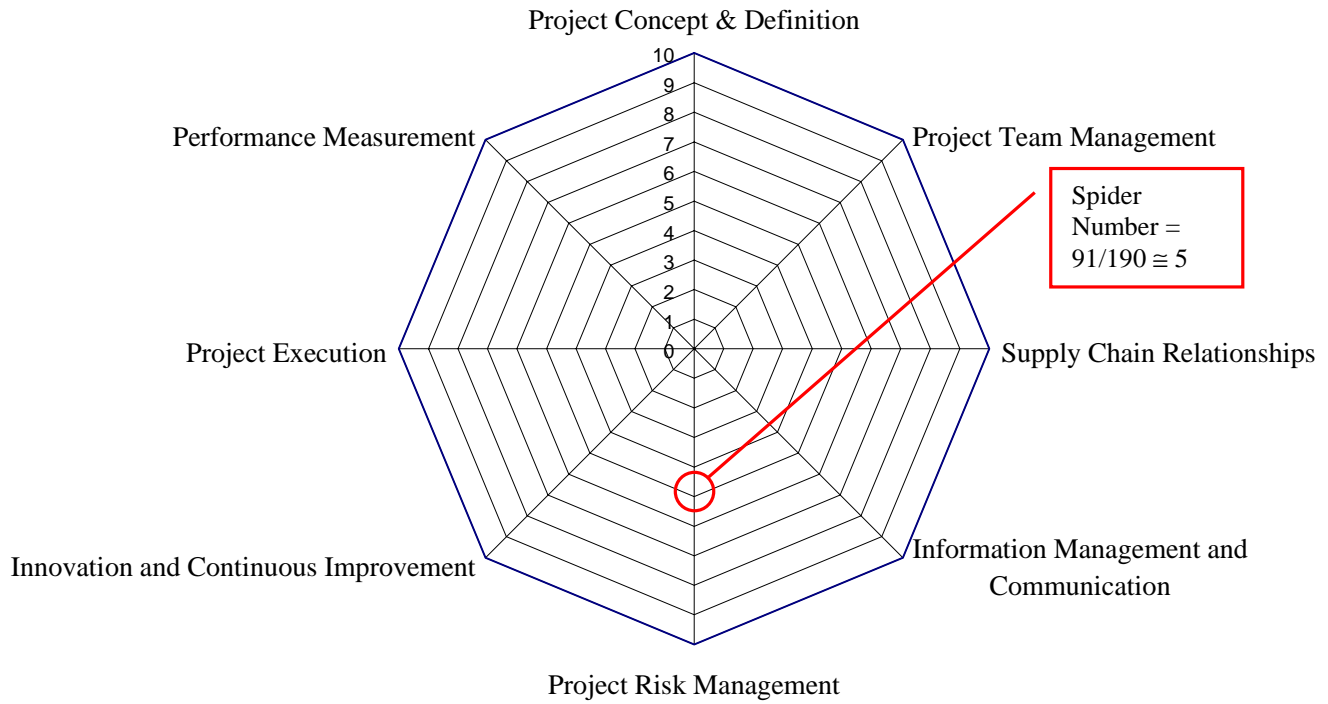
### AP5. Project Risk Management

Out  
of  
10

Mark  
x  
W't

Max.  
Poss.  
score

		VEP Ref:	Mark	W't	Score	
5/1	Does the company have a risk management process which is routinely applied to all projects	5.1	<b>8</b>	4	<b>32</b>	40
5/2	Are appropriate techniques for quantification available and used on projects to analyse risks?	5.1	<b>7</b>	3	<b>21</b>	30
5/3	Do projects in the company produce risk management action plans with responsibilities assigned for managing risks?	5.1	<b>8</b>	3	<b>24</b>	30
5/4	Are reviews carried out throughout projects within the company to capture learning on how risks were managed and how risks to future projects might be better managed?	5.1	<b>4</b>	3	<b>12</b>	30
5/5	Are risk and benefit framework agreements with key vendors in use in-the company?	5.2	<b>1</b>	2	<b>2</b>	20
5/6	Is it part of the company procurement strategy to explore with potential supply chain partners the potential for risk and benefit framework agreements?	5.2	<b>0</b>	2	<b>0</b>	20
5/7	Does the company hold regular reviews with partners in risk and benefit framework agreements?	5.2	<b>0</b>	2	<b>0</b>	20
						<u>190</u>



**Total Score for Section 5: 91/190**

## 4 – FEEDBACK FORM

Company:	Date:	Location:
Facilitator:	Attendee (optional):	
Position & brief description of how involved in projects you are: ..... ..... .....		

1. Overall how well did the module work for you?

Poorly	OK	Well	Very well
--------	----	------	-----------

2. How could it be improved?

.....

.....

.....

.....

3. How helpful was your attendee's / facilitators pack?

Poor	OK	Good	Very Good
------	----	------	-----------

4. How could it be improved / what supporting material would you like to see added?

.....

.....

.....

.....

5. Was the balance between the four elements of the module about right? YES / NO

If not, suggest new split:

Allocate 100%				
---------------	--	--	--	--

6. What did you find most valuable / easiest?

.....

.....

7. What did you find least valuable / hardest?

.....

.....

8. Any comments on the mix of attendees – did it work?

.....

.....

9. How effective was the facilitator? (If applicable)

Poor	OK	Good	Very Good
------	----	------	-----------

10. How could facilitation of the session be improved?

.....

.....

11. How could the presentation material for the module be improved?

.....

.....

.....

.....

12. Could we give you more help to pass on what you've learnt from this module to colleagues?

.....

.....

13. Which Principle would you like to tackle next and why?

1	2	3	4	5	6	7	8

.....

.....

Thank you for your help!

**Please hand in before you leave the session or post asap to:**

The ACTIVE Secretariat  
20 Eastbourne Terrace  
London W2 6LE

Fax: 020 7957 4322

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<p>Company:</p> <p>Name:</p>		<p>Principle Module:</p> <p>Date:</p>	
Action areas	Action required	Measure of success	By whom
			By when
			Completed

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*Achieving Competitiveness Through  
Innovation & Value Enhancement*

### **The need for Change!**



### **ACTIVE IN ACTION!**

#### **THE ACTIVE VISION**

***To achieve a world-class UK  
process engineering and  
construction industry, with  
satisfied clients and thriving  
contractors and suppliers.***



### **ACTIVE IN ACTION!**

#### **THE ACTIVE MISSION**

***To improve the competitiveness  
of the UK process engineering  
and construction industries by  
transforming the way in which  
they execute projects for the  
process and energy sectors  
world-wide.***



### **ACTIVE IN ACTION!**

#### **Changing the Culture**

- *Alignment and clarity of objectives*
- *Single integrated team working*
- *Personal working relationships*
- *Co-operative corporate policies*
- *Learning from project to project*
- *Good communications*
- *Sharing benefits and risks*
- *Training and education*



### **ACTIVE IN ACTION!**

#### **Defining Good Practice**

- *Developing ACTIVE Principles*
- *Adopting new practices*
- *Learning from others*
- *Daring to be innovative*
- *Continuing the dialogue*



## ACTIVE IN ACTION!

### *Measuring the Results*

- *Agreeing the objectives*
- *Defining the right measures*
- *Obtaining and sharing the information*
- *Benchmarking the results*
- *Applying to future projects*



## ACTIVE IN ACTION!

### ***This is not new!***

*We all know that attitudes and  
behaviour in the industry  
have to change*

***So why isn't it happening?***



## ACTIVE IN ACTION!

*Because its easier to  
carry on doing it the  
way its always been  
done!*



## ACTIVE IN ACTION!

### ***Result***

- *Continued decline of the industry*
- *Loss of markets overseas*
- *Low margins all round*
- *Lots of money for the lawyers*
- *Companies avoid investment like the plague*
- *UK Supply base disappears*



## **ACTIVE Principles**

- *Effective Project Concept and Definition*
- *Effective Project Team Management*
- *Effective Supply Chain Relationships*
- *Effective Information Management and Communication*
- *Effective Project Risk Management*
- *Effective Innovation and Continuous Improvement*
- *Effective Project Execution*
- *Effective Performance Measurement*

## ACTIVE IN ACTION!

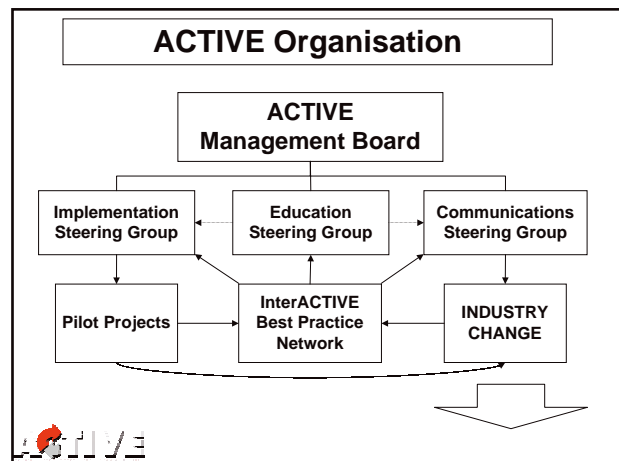
### ***Key themes:***

- ***Implementation***
- ***Education***
- ***Communication***



### ACTIVE IN ACTION!

- *Changing the culture*
- *Delivering the results*
- *The winning formula*



### Benefits of ACTIVE

Client:

- Improved rate of return through effective capital spend and operating efficiency.
- Greater certainty of delivery.



### Benefits of ACTIVE

Contractor:

- Enhanced project performance due to effective supply chain management.
- Efficient Project execution improves track record.



### Benefits of ACTIVE

Supplier:

- Increased repeat business with more security and opportunity for innovation.
- stronger supply chain relationships create greater certainty.



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## ACTIVE EDUCATION GROUP

- To educate Champions and Practitioners throughout the supply chain in making the ACTIVE Principles the normal way of working in their companies by developing appropriate learning tools.

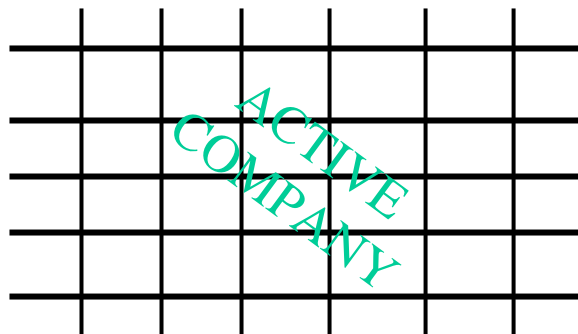
## ACTIVE EDUCATION GROUP

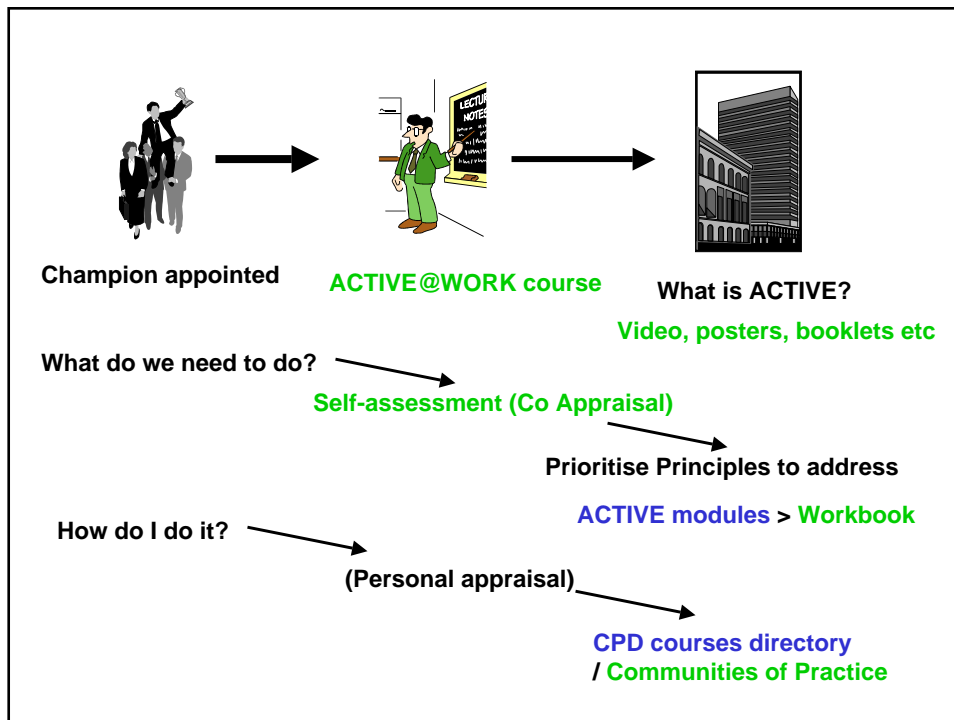
Learning from others

FUNCTIONS / ROLES

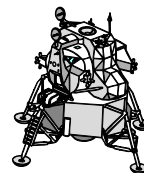
Learning by doing

PROJECTS





## Why an ACTIVE module?



- ☞ Route into workbook
- ☞ Transfer & embed knowledge from workbook into company
- ☞ Tie into a "process" of changing into an "ACTIVE" company
- 8-10 people from across the company
- variety of functions / roles

Example of an ACTIVE module: Risk Management AP5



### Example of an ACTIVE module: Risk Management AP5

#### 1. How do we do it now? (1.5 hrs)

What do you understand / mean by **risk management** in the context of your function / role?

Mapping / Process < Champion facilitates:

- ☞ Let me tell you how it really is!
- ☞ Where did we do it well?
- ☞ Where did we do it badly?

What can we do to make it better?  
Answer: ACTIVE Principle AP5!

#### 2. Present Active Principle **AP5** (0.5 hr)

- ☞ 10-15 slides max.
- ☞ Develop directly from workbook
- ☞ Powerpoint + notes for presenters
- ☞ (video?)

#### 3. How could we do it this way? (1 hr)

- |                                  |                              |
|----------------------------------|------------------------------|
| • <b>What's holding us back?</b> | • <b>What would we gain?</b> |
| • barriers                       | • opportunities              |
| • NIH                            | • benefits                   |
|                                  | • incentives                 |

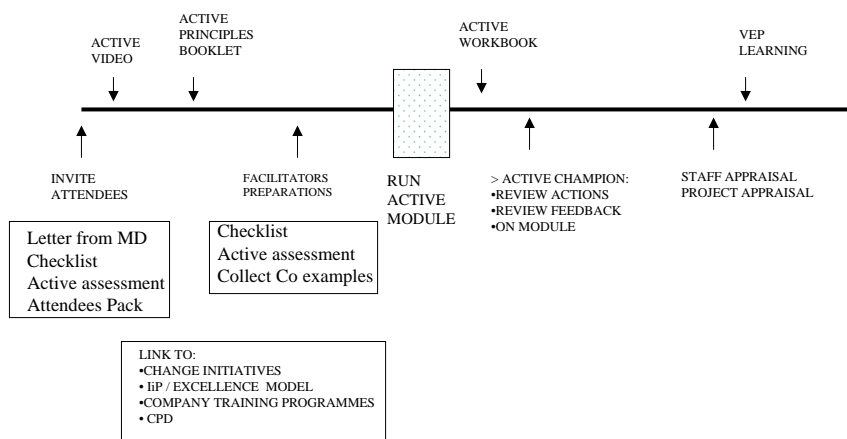
4. What actions are we going to take? (1 hr)

5. Do you want to stay together to see it through?

☞ Ensuring we follow-through  
and achieve our milestones



### ACTIMOD - TIMELINE



# ACTIVEmod – THE ACTIVE MODULES

## VOLUME 2 - PLUG AND PLAY PRINCIPLES

The choice and running order of modules is entirely up to you. However, we believe most benefit may be gained by covering first those areas from Principles AP2 to AP6 where you see most potential for improvement. You could then go on to Principles AP1 and AP7 for a “fitness” check to see how effectively you are applying Principles AP2 to AP6 on a case study. This may highlight the need to run another of the modules from AP2 to AP6. Finally, you could run Principle 8 to ensure you have the best system for measuring your performance on projects.

**AP2 – Project Team Management** Establishing and maintaining a single integrated team with clearly defined roles and responsibilities and shared common objectives.

**AP3 – Supply Chain Relationships** Ensuring that supply chain relationships work to maximise value and equitably share both risks and benefits.

**AP4 – Information Management and Communications** Timely management of relevant information using appropriate technology and clear documentation to aid communication throughout the team.

**AP5 – Project Risk Management** Using a structured process for managing risk and assigning responsibility to those in the supply chain best able to manage it.

**AP6 – Innovation and Continuous Improvement** Encouraging a challenge culture with processes for capturing learning and regarding innovative ideas throughout the supply chain.

Principles AP1 and AP7 are treated together through a case study:

**AP1 – Project Concept and Definition** Setting clear aligned objectives and scope with defined, well understood implementation strategies.

**AP7 – Project Execution** Managing the implementation process to integrate activities efficiently to successfully achieve project objectives.

**AP8 – Performance Measurement** Defining key performance indicators which demonstrate the achievement of project goals and benchmarking.

Further information, contact:

The ACTIVE Secretariat  
20 Eastbourne Terrace  
London W2 6LE

Tel: 020 7957 3350

Fax: 020 7957 4322

E-mail: [active@activemail.demon.co.uk](mailto:active@activemail.demon.co.uk)

Web site: [www.active-website.com](http://www.active-website.com)

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## ACTIVE PRINCIPLE 2: EFFECTIVE PROJECT TEAM MANAGEMENT

The effectiveness of a capital project will be determined largely by the people involved and how closely they are working to common, aligned objectives. This includes personnel from contractors, consultants or suppliers working on the project as well as in-house staff. Key elements necessary to achieve team effectiveness include:

- Clear leadership of a focused integrated team
- Effective selection processes for recruitment of staff and placing of contracts
- Team capability through inclusion of the necessary skills and competencies
- Clarity of roles and responsibilities within the team
- Effective and timely communications throughout the team
- Common understanding of project aims and how each individual effort contributes to those aims
- A 'no blame' culture with a readiness to learn from both success and failure
- Motivation to achieve the result and recognition of individual contributions
- Contractual arrangements which foster team integration

It is the responsibility of the project manager to direct and manage the project to achieve these necessary elements. The key is to establish a results orientated team culture from the outset, harnessing the skills of all team players to achieve commitment and ownership. Team building and regular involvement of the team in decision making and review are important means to achieve this. The contractual arrangements must also facilitate an integrated team approach and alliance or partner-type contracts are commonly effective in achieving this result.

To ensure that all team members are working effectively, it is essential that everyone shares a common understanding of the desired results, both final and interim, and a clear understanding of personal roles in achieving these. While critical success factors should be clear and demanding, targets should be realistic with agreed milestones.

To ensure effective motivation of all the team, incentives, including both personal and corporate reward incentives, should be considered. Disincentives should be used with care since motivation by fear can destroy trust and work against achievement of project objectives.

The competence 'mix' of the project team needs careful assessment. Shortcomings in capability should be redressed by appropriate training and education programmes which should be built into the project schedule.

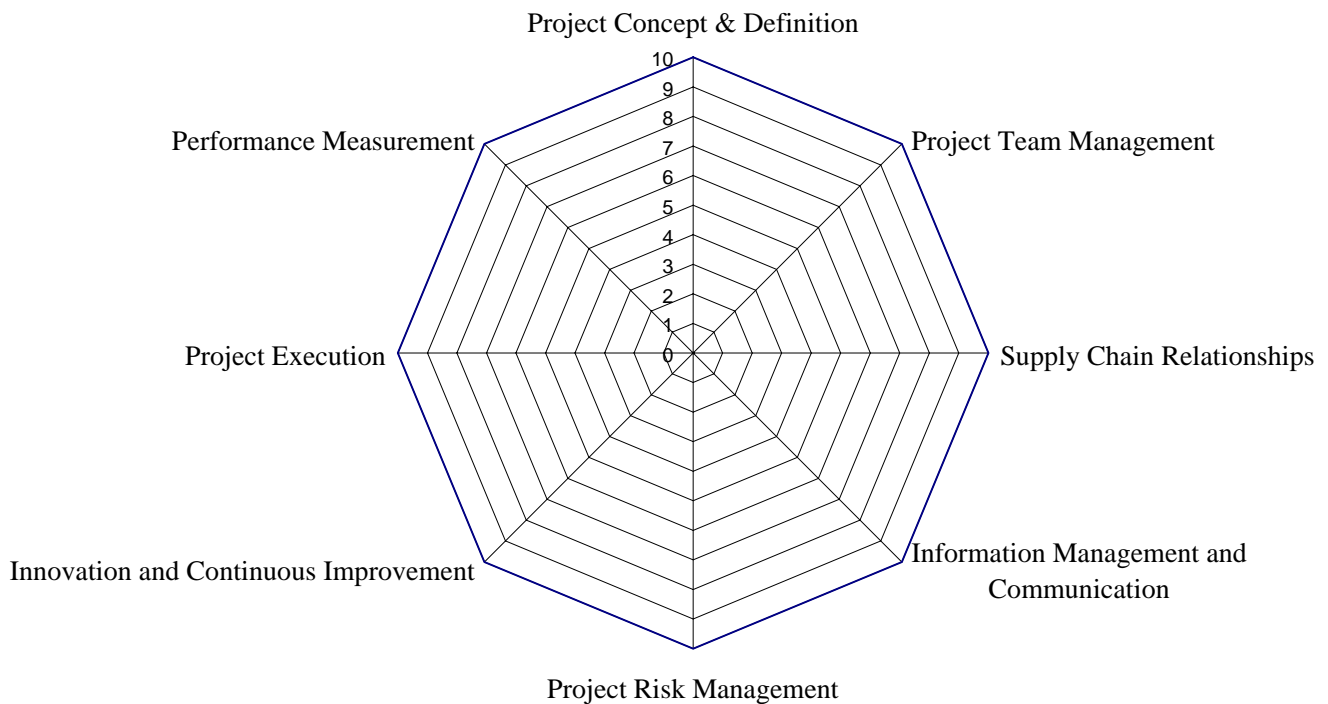
Extract from ACTIVE WORKBOOK Rev. 02. October 1998 *ACTIVE Principles* Section 2 Page 7 of 20

## ACTIVE Index Assessment

### AP2. Project Team Management

		VEP Ref:	Mark	W't	Score
2/1	Does the Company have a clear auditable process in place for the selection of project participants?	2.1		2	
2/2	Does the company use the results of systematic analysis such as psychometric testing to check the balance of project teams?	2.1		1	
2/3	Is it the company culture to encourage people to effectively challenge project assumptions?	2.1		3	
2/4	Is it company policy to routinely share project objectives to achieve integrated and aligned project teams?	2.1		3	
2/5	Does the company routinely set aggressive, achievable targets for project teams?	2.1		3	
2/6	Has the company an effective system of assessment and appraisal of project team staff in place?	2.1		2	
2/7	Does the company routinely assess the capability of their teams, initiating training where there are deficiencies?	2.1		3	
2/8	Does the company use team building events to raise the effectiveness of project teams?	2.1		3	
2/9	Are processes in place to measure project team effectiveness throughout the company?	2.1		2	
2/10	Are company personnel motivated and is there a process for recognising and rewarding achievement?	2.1		3	
2/11	Is a system in place within the company for the management of change and is it working effectively?	2.1		4	
2/12	Is there a defined process in place to ensure project team members are clear on their roles and responsibilities on projects?	2.1		3	
2/13	Are the key staff within the company project organisation displaying good leadership which draws out the full potential of their teams?	2.1		3	
2/14	Within the company, is the working environment and supporting tools and systems conducive to effective working on projects?	2.1		2	

**Total Score for Section 2:**



### Guide to presentational material

“Highlight key words from AP2 which lead into the framework for this module”.

AP2-1

“Key elements of a project team management process.”

AP2-2

“Teams are a collection of individuals so we must first understand each individual.”

AP2-3

“The needs of the individual are paramount in any company intent on improving performance and establishing effective project teams.”

AP2-4

“Definitions of a team and its leader.”

AP2-5

“The role and relationship of a team within an organisation need to be understood.”

AP2-6

“Perhaps the most significant variable within teams is their culture.”

AP2-7

“Organisations and Teams may be classified in a number of ways and have differing proponents.”

AP2-8

AP2-9

AP2-10

“In seeking to adapt to changed situations and integrate organisations and teams a number of potentially negative outcomes need to be addressed.”

AP2-11

“The role of the leader is paramount in the successful performance of a team.”

AP2-12

“But a leader needs to adopt a style or needs to naturally have a style which ensures successful performance always depending upon the situation.”

AP2-13

“The successful development of an integrated team, in large part, depends upon the level of competence of the leader in the following areas”

AP2-14

“The essential prerequisite in team management is the clear allocation of roles and responsibilities.”

AP2-15

“A project team, mirroring as it must the project itself, has within its life a number of stages.”



AP2-16

“Teams develop over time through a progression of phases.”

AP2-17

“Integrated, high performance teams are extremely effective - Characteristics of integrated teams.”

AP2-18

“Integrated, high performance teams are extremely effective - Characteristics of high performance teams.”

AP2-19

“Characteristics of Effective Teams”

AP2-20

“Problems which might affect team performance”

AP2-21

“At all times the individual is the deciding factor with many facets to his / her involvement in a team / teams.”

AP2-22

“Every project should have a charter which sets out its purpose and requirements.”

AP2-23

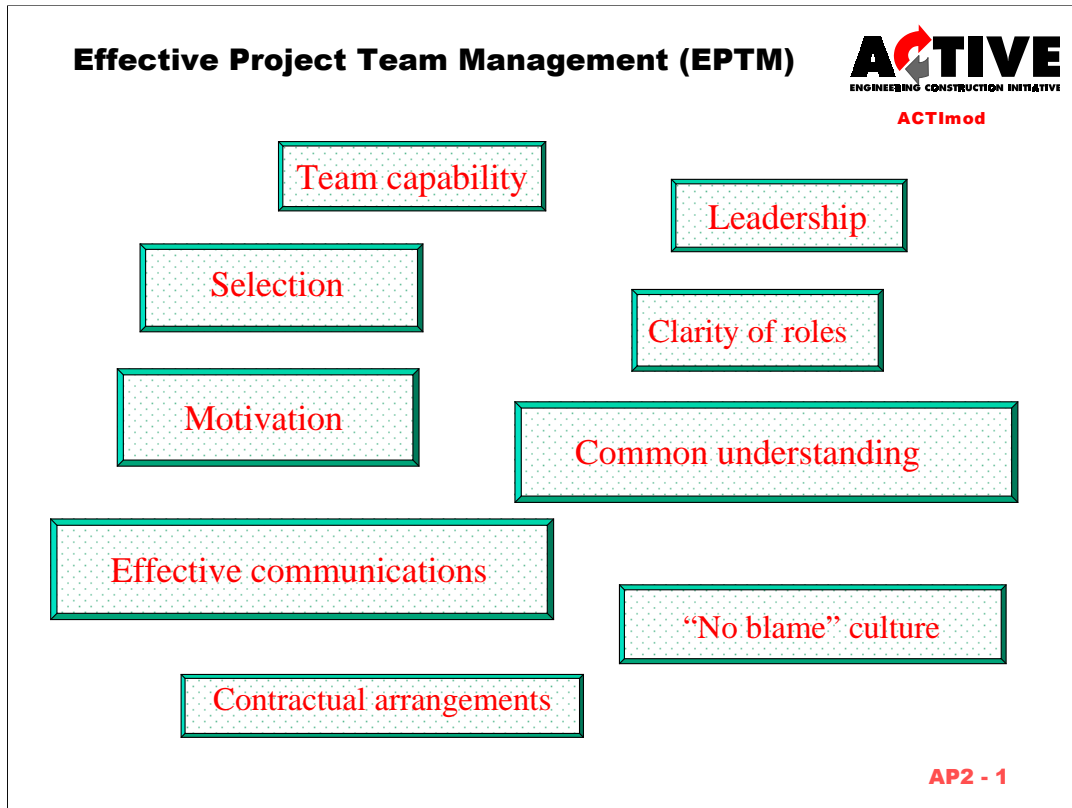
“Supplementary topics”

AP2-24

“Supporting value enhancing practices”

AP2-25

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“Highlight key words from AP2 which lead into the framework for this module”

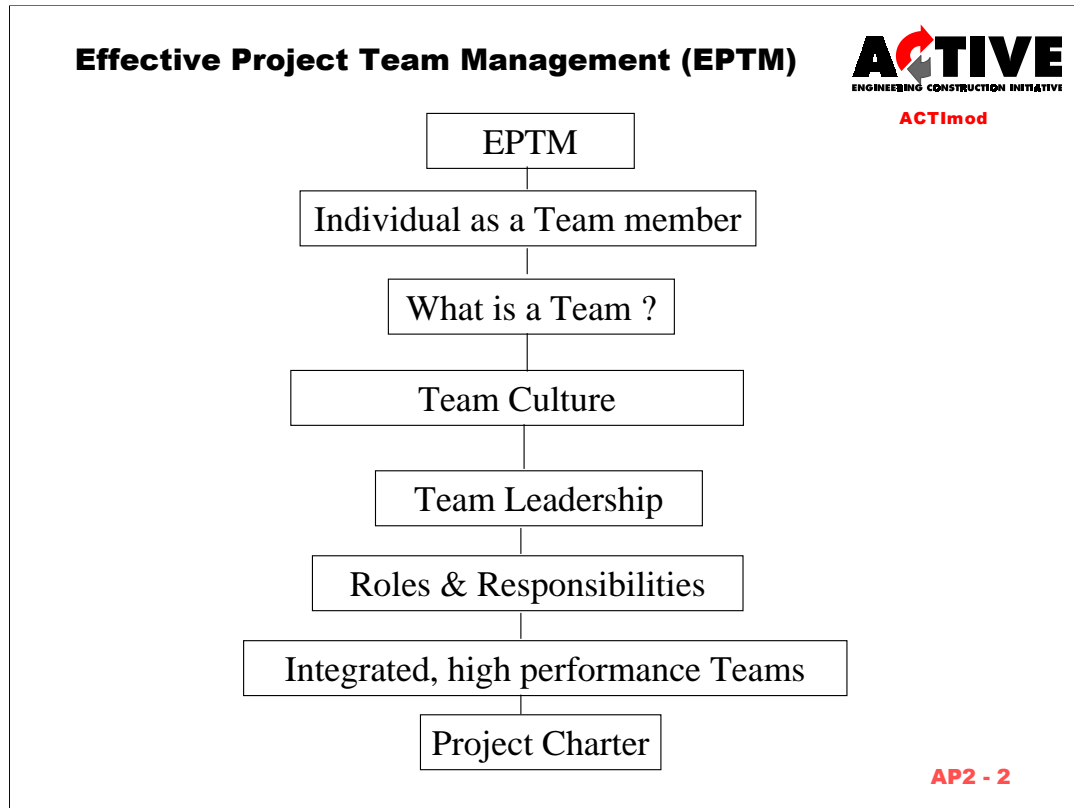
The effectiveness of a capital project will be determined largely by the people involved and how closely they are working to common, aligned objectives. This includes personnel from contractors, consultants or suppliers working on the project as well as in-house staff. Key elements necessary to achieve team effectiveness include:

It is the responsibility of the project manager to direct and manage the project to achieve these necessary elements. The key is to establish a results orientated team culture from the outset, harnessing the skills of all team players to achieve commitment and ownership. Team building and regular involvement of the team in decision making and review are important means to achieve this. The contractual arrangements must also facilitate an integrated team approach and alliance or partner-type contracts are commonly effective in achieving this result.

To ensure that all team members are working effectively, it is essential that everyone shares a common understanding of the desired results, both final and interim, and a clear understanding of personal roles in achieving these. While critical success factors should be clear and demanding, targets should be realistic with agreed milestones.

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“Key elements of a project team management process” should include:

- Clear leadership of a focused integrated team
- Effective selection processes for recruitment of staff and placing of contracts
- Team capability through inclusion of the necessary skills and competencies
- Clarity of roles and responsibilities within the team
- Effective and timely communications throughout the team
- Common understanding of project aims and how each individual effort contributes to those aims
- A 'no blame' culture with a readiness to learn from both success and failure
- Motivation to achieve the result and recognition of individual contributions
- Contractual arrangements which foster team integration

## Individual as a Team Member



Individuals are a complex function of:

- Genetic framework
- Background
- Environment

With the result that each person has his or her own:



Personality  
Perceptions  
Behaviour



Attitudes  
Prejudices  
Character



AP2 - 3

“Teams are a collection of individuals so we must first understand each individual.”

A whole set of psychometrics help in identifying numbers of these personal characteristics.

- Extraversion v Introversion
- Thinking v Feeling
- Stable v Unstable
- etc.

## Individual as a Team Member



Needs of the individual:

- remuneration
- belonging
- significance
- achievement

AP2 - 4

“The needs of the individual are paramount in any company intent on improving performance and establishing effective project teams.”

The theoretical underpinning of this particular topic is extensive but in summary the four basic needs of the individual are:

- The need for remuneration; most individuals work for money in order to sustain their life and lifestyle.
- The need for belonging; individuals need to feel that they have a place within the organisation, to know where they belong.
- The need for significance; individuals need to feel that their contribution is meaningful and brings respect from other team members.
- The need for achievement; individuals need to succeed.

## What is a Team ?



A **team** is a group of individuals who share common objectives and who need to work together to achieve them.

A **leader** needs to motivate his or her team to perform tasks effectively in the achievement of goals and objectives.

He or she needs to ensure that the needs of the task, the group and the individual are, as far as possible, satisfied.

Team needs

Task needs

Individual needs

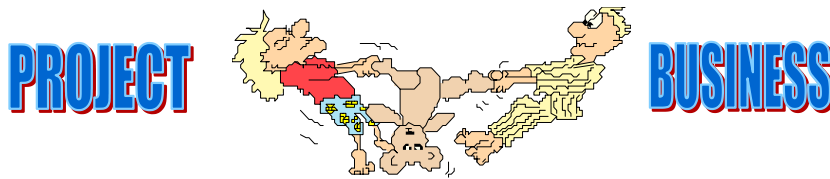
AP2 - 5

“Definitions of a team and its leader.”

## What is a Team ?

Fundamental roles for Teams within Organisations:

- To develop vision and strategy
- To maintain the organisation's set of values
- To manage operations
- To manage interfaces



*“How might this potential “conflict” be avoided or resolved?”*

AP2 - 6

“The role and relationship of a team within an organisation need to be understood.”

In developing a Project Team the organisational needs and cultures of the partner companies may be at variance with project needs and developing culture.



## Team Culture



The culture of the organisation or organisations  
will affect the way that an organisation and teams  
will respond to situations.

Culture defined:

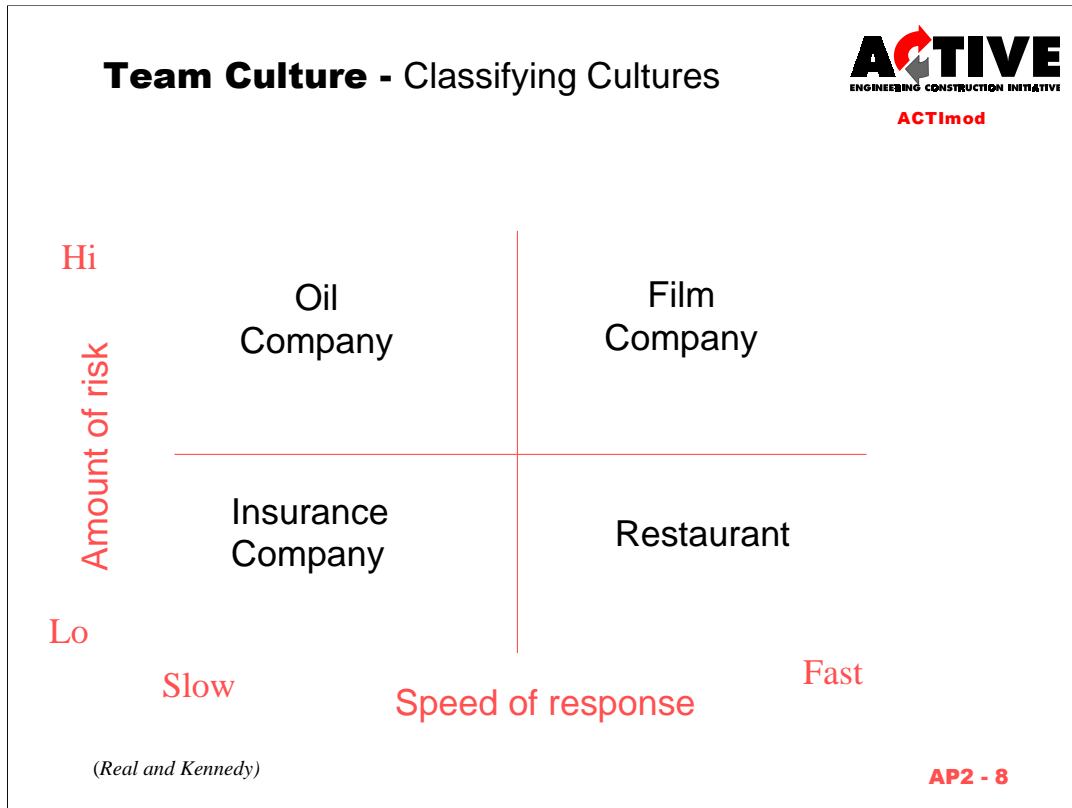
**“The way we act, feel and think”**

**AP2 - 7**

“Perhaps the most significant variable within teams is their culture.”

*“A pattern of basic assumptions invented, discovered or developed by a given group as it learns to cope with its problems of external adoption and internal integration that has worked well enough to be considered valid and to be taught to new members as the correct way to perceive, think and feel in relation to these problems”*

*(Ed Schein)*



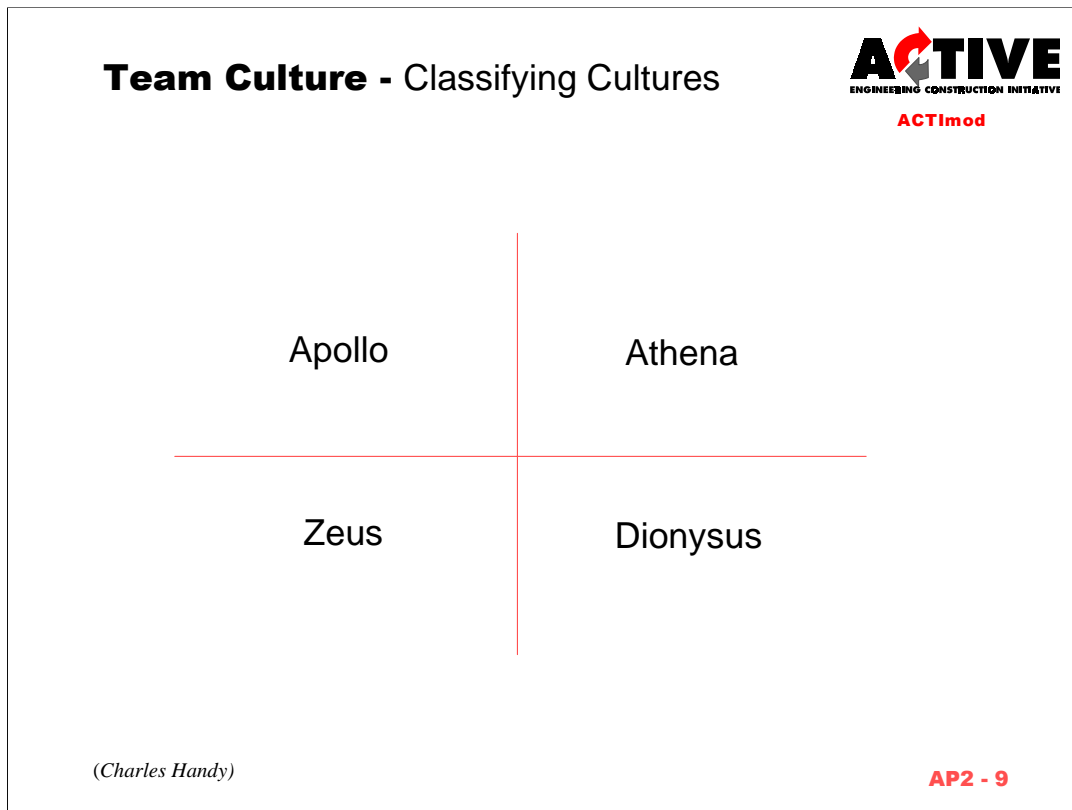
“Organisations and Teams may be classified in a number of ways and have differing proponents.”

A number of suggestions have been made in classifying cultures - the following are offered to prompt discussion.

- Risk - how big a risk a company must take
- Feedback - how fast the feedback comes as to whether the risk has paid off
- The questions we need to ask are:

*Which classification is your company ?*

*Can a company change its culture when joining in partnership with others in a project ?*



“Organisations and Teams may be classified in a number of ways and have differing proponents.”

➤ **Apollo** - *The god of order and rules*

A culture based upon the definition of the role and the job to be done not personalities.

The role culture

➤ **Athena** - *The warrior goddess*

A culture which recognises expertise as the base of power and influence.

The task culture

➤ **Zeus** - *The patron god*

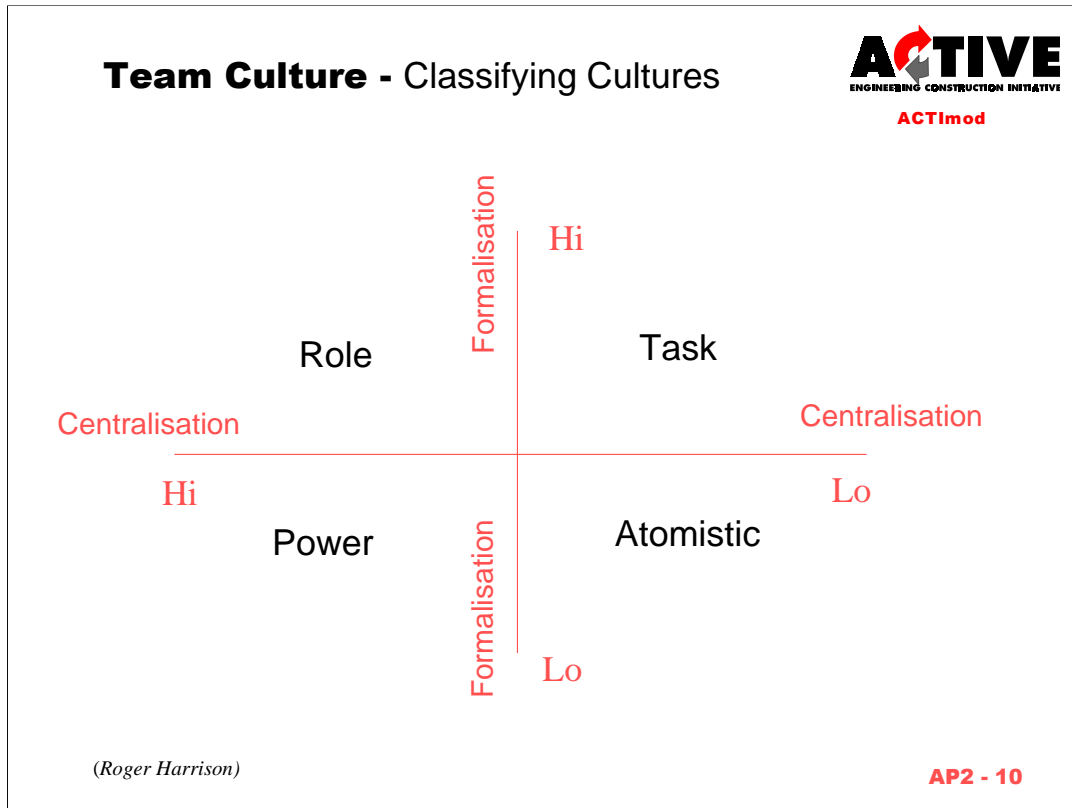
The culture depends on an empathy which exists within the informal structures of the organisation

The club culture

➤ **Dionysus** - *The god of wine and song*

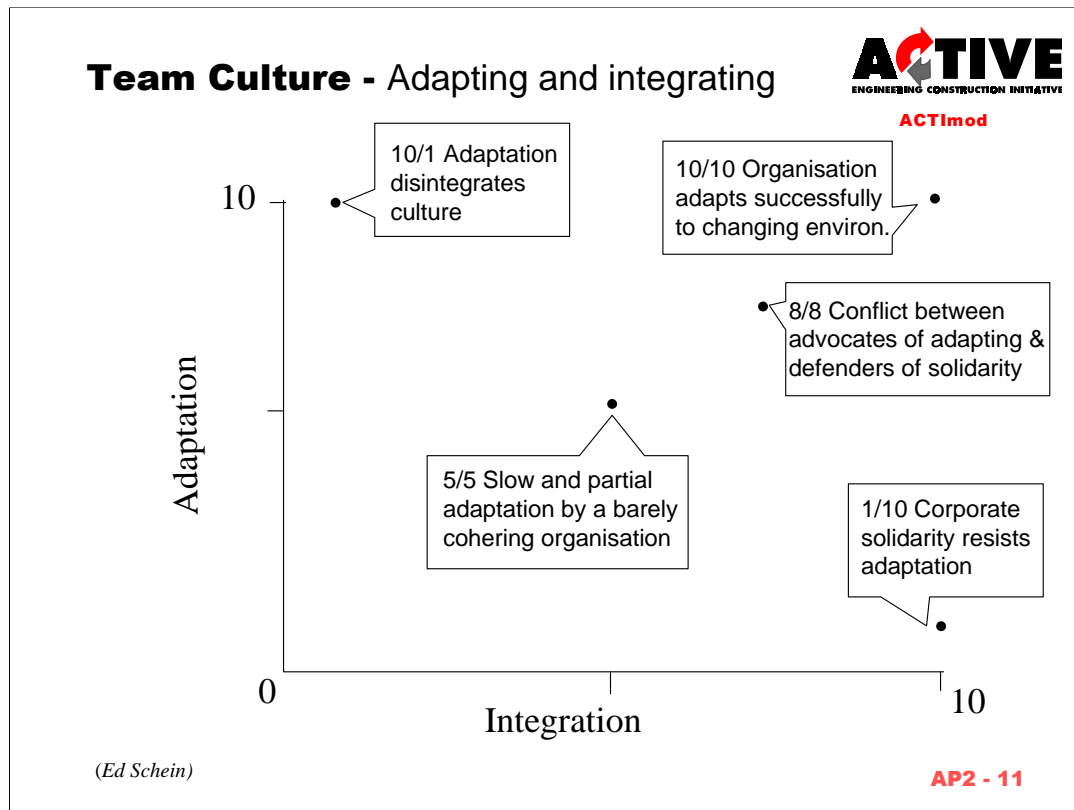
The culture helps the individual to achieve his or her purpose. Talent and skill are the crucial assets

The existential culture



“Organisations and Teams may be classified in a number of ways and have differing proponents.”

- Role Culture: bureaucratic, mechanistic
- Power Culture: spider in centre of web with informal colleagues on same “wavelength” as the “old man”
- Task Culture: Interdisciplinary project groups organised around the task
- Atomistic Culture: a relationship of free spirits united by common interests



“In seeking to adapt to changed situations and integrate organisations and teams a number of potentially negative outcomes need to be addressed.”

When circumstances change there is a need within the project team to:

- Adapt externally
- Integrate internally
- At the same time maintaining continuity in the middle of the process of change

A company with a score 10/10 would have achieved perfect synergy.

Other equal scores would mean either compromise or a potential for cultural conflict.

*How does your company “fit” in these models?*

## Team Leadership

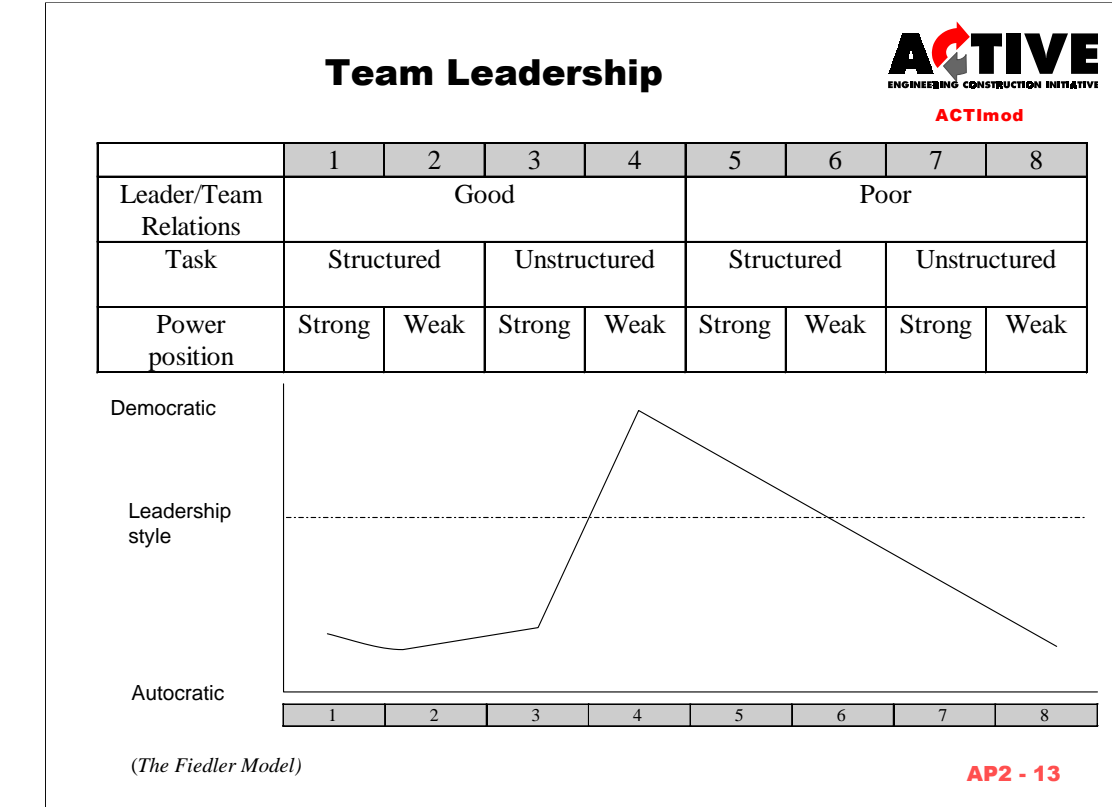
The role of the leader of any group of individuals is to manage the potential conflict which might arise between the needs of the organisation, the group and the individual !!!!!!!

BY

Planning	Briefing
Controlling	Evaluating
Motivating	Organising
Coaching	Mentoring
Facilitating	

AP2 - 12

“The role of the leader is paramount in the successful performance of a team.”



“But a leader needs to adopt a style or needs to naturally have a style which ensures successful performance always depending upon the situation.”

The Fiedler Model combined all three elements of leadership into a graphic representing leadership style with Autocratic and Democratic at either end of the spectrum. The most demographic example at (4) is:

- A good relationship between the leader and the team,
- A 'weak' leader and
- An unstructured organisation of the task.

There are obviously situations where this style would be appropriate.

The applicability in a project based environment is open to discussion as is a particular company's management model.

## Team Leadership - Team Building

The successful development of an integrated team, in large part, depends upon the level of competence of the leader in the following 'Top Ten' areas:

- Leadership skills
- Team selection
- Building a positive climate
- Clearly defined team roles
- Use conflict constructively
- Consistency
- Establish high standards
- Use of time
- Review performance without personal criticism
- Seek feedback

*(Team Development Manual, Mike Woodcock)*

AP2 - 14

Criteria	Level of competence	
	High	Low
Leadership skills	Strong	Weak
Consistency	Consistent	Inconsistent
Team philosophy	Support	No belief
Team selection	Great care	Inappropriate selection
Commitment to team members development and welfare	Committed	Lack of commitment
Building a positive climate	Succeed	Fail
Motivated by achievement	Yes	No
Clearly defined team roles	Yes	No
Review performance without personal criticism	Yes	No
Encourage individual development	Yes	No
Encourage creative potential	Yes	No
Develop sound relationships with other teams	Yes	No
Use conflict constructively	Yes	No
Encourage controlled risk taking	Yes	No
Seek feedback	Yes	No
Use of time	Well	Badly
Establish high standards	Yes	No
<i>(Team Development Manual, Mike Woodcock)</i>		



## Roles & Responsibilities



A prerequisite of successful team management and leadership is to:

- Allocate roles appropriately
- Define responsibilities clearly
- Delegate authority with the responsibility

AP2 - 15

“The essential prerequisite in team management is the clear allocation of roles and responsibilities.”

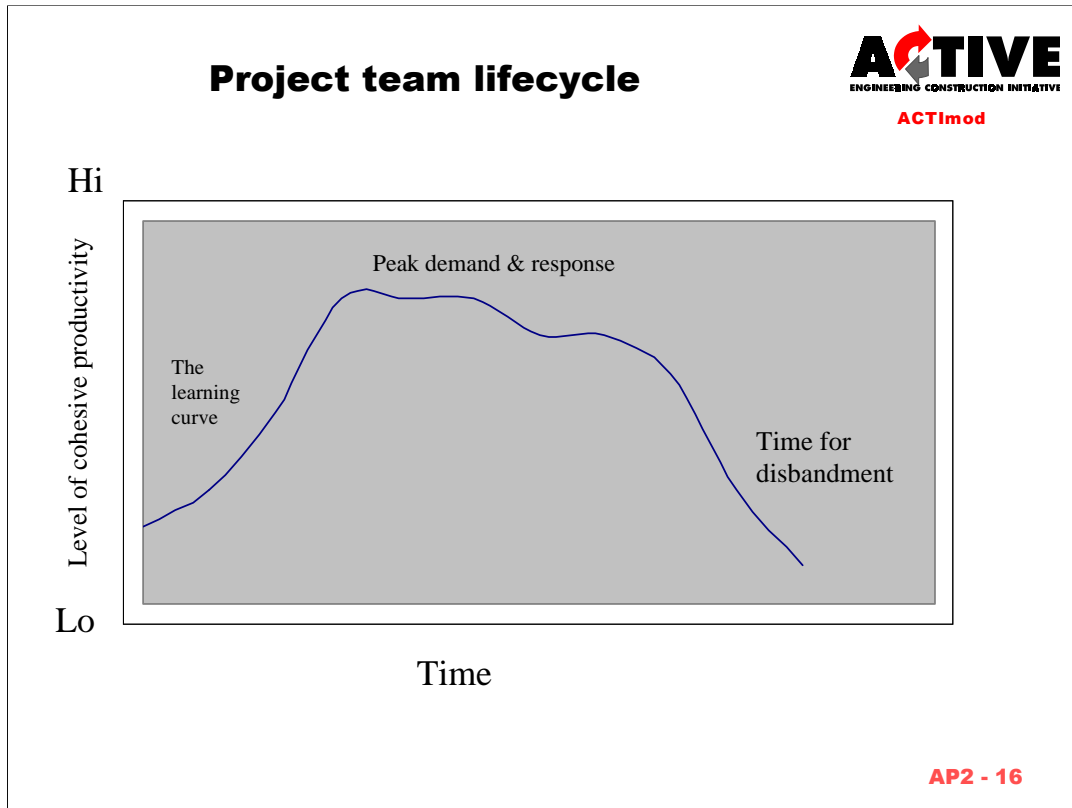
It is essential during the early stages of the development of a team to ensure that the objectives of the organisation and the project are transferred and translated into the roles of the team. The role of the individual members can then be properly identified and the commensurate responsibilities defined.

The basics of establishing roles is set in definition:

- Role set: the group of people with whom the *focal person* (e.g. the leader) interacts
- Role definition: often occupationally sometime legally defined
- Role ambiguity: Unclear role expectations
- Role conflict: conflicting or overlapping roles
- Role overload: too many roles
- Role underload: too few roles

In an organisation role problems result in:

- Individual tension
- Low morale
- Poor communications



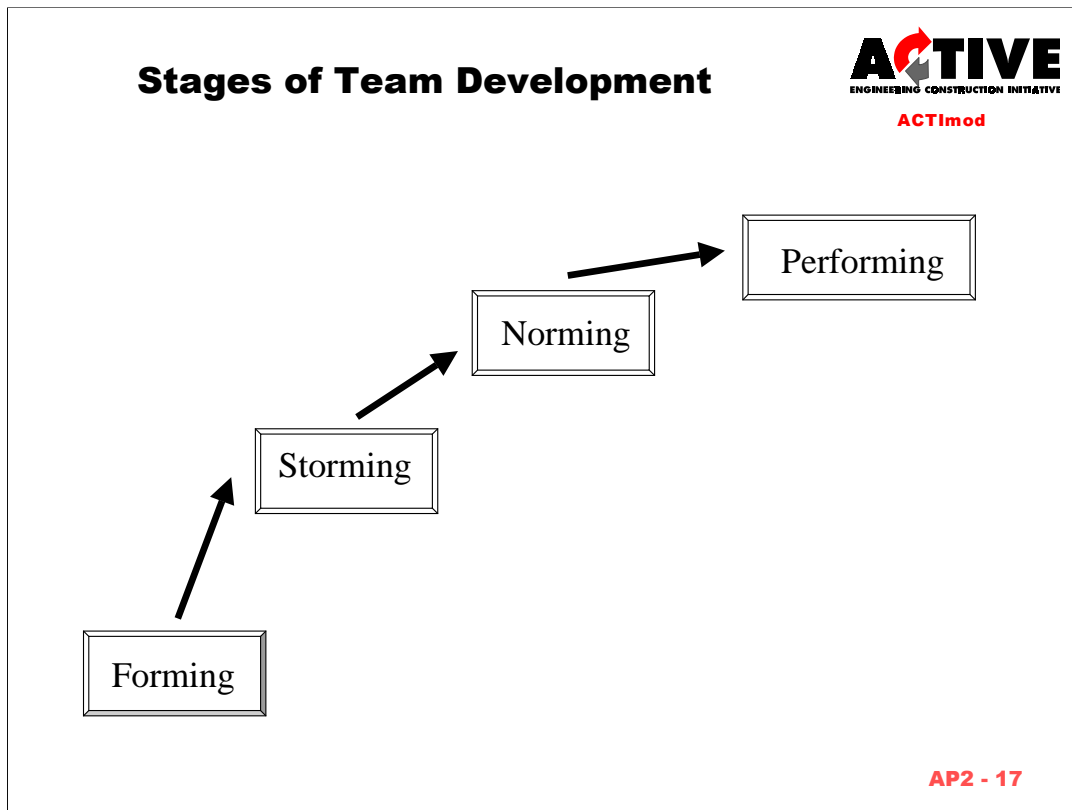
“A project team, mirroring as it must the project itself, has within its life a number of stages.”

The three stages of the lifecycle:

1. Learning
2. Response
3. Disbandment

Each of these stages need to be matched, as far as possible, with the other project variables related, for instance, to planning, information and risk.

A management dilemma is present, when at the very time a newly created team is establishing itself and learning, many of the significant decisions are being, and indeed need to be, made.



“Teams develop over time through a progression of phases.”

**Forming - The undeveloped team**

The team is, as yet, a group of individuals agreeing the objectives and composition of the team.

**Storming - The experimenting team**

The conflict stage with many differing views and opinions, Personal agendas are revealed.

**Norming - The consolidating team**

The team establishes norms and practices.

**Performing - The mature team**

The team is established, mature and operates effectively.

## Integrated, high performance teams

Integrated teams are:



AP2 - 18

“Integrated, high performance teams are extremely effective.”

### Characteristics of integrated teams:

- Satisfaction of individual needs
- Shared interests
- Sense of belonging
- Pride in group activity
- Commitment to team objectives
- High trust
- Low conflict
- Ease with interdependence
- Group interaction
- Effective communication
- Results orientation
- Performance norms
- Encouragement of team member development
- Interfacing with other organisations

*(David Cleland)*

## Integrated, high performance teams



High performance teams are:



AP2 - 19

“Integrated, high performance teams are extremely effective.”

Characteristics of high performance teams:

Task related:

- Commitment to the project
- Result orientated attitude
- Innovative and creative
- Willingness to change
- Concern for quality
- Ability to predict trends
- Ability to integrate
- Ability to anticipate problems and react early
- Synergism

People related:

- High involvement
- Work interest and energy
- Capacity to resolve conflict
- Good communication
- Effective interfacing
- High need for achievement
- Good team spirit
- Mutual trust
- Self development

## Integrated, high performance teams

Effective teams are:



AP2 - 20

### Characteristics of Effective Teams:

- High performance level
- Well organised
- Well planned
- Good interdependency

### With a leader who should be:

- Comfortable in an uncertain environment
- Problem orientated
- Positive outlook
- Appropriate knowledge and experience together with the skill to apply them to project requirements

### And team members who should have:

- Ability to adjust quickly to changing conditions
- Drive and energy
- Even temperament
- Consistent performance
- Optimistic view of things
- Interest in own personal development
- Stability in personal life

Note: The building of effective teams presumes the availability of “perfect-fit” individuals, which in “real life terms” will not be the case!

*“Management is the art of compromise.”*

## Problems faced by teams



Team performance can suffer if:

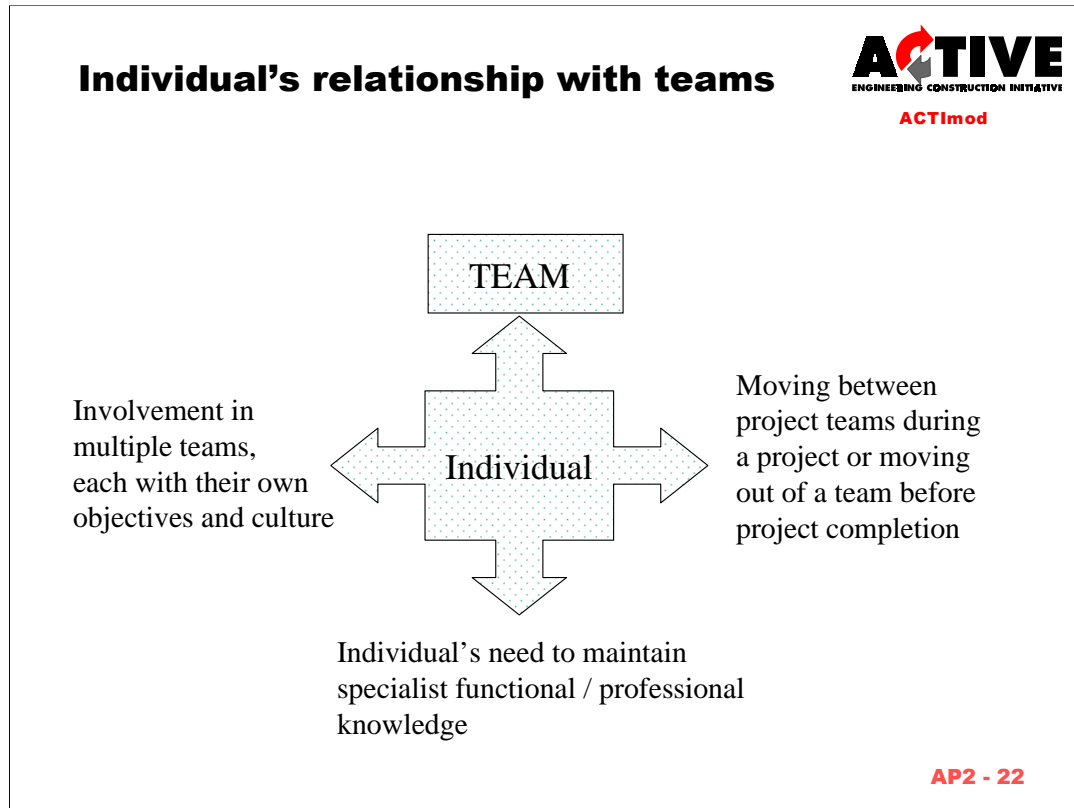


AP2 - 21

Problems which might affect team performance include:

- Power struggle and conflict
- Confusion
- Mistrust
- Ambiguous authority
- Uneven workload
- Unclear assignment
- Unclear responsibilities
- Unclear channels of communication
- Unclear project goals
- Unclear measures of personal performance
- Unrelated personal objectives
- Lack of commitment to project plan
- Lack of team spirit
- Lack of direction and leadership

When these are not present or are “managed out” there is every likelihood of an effective and successful team.



“ At all times the individual is the deciding factor with many facets to his / her involvement in a team / teams.”

In developing teams the fundamental definition of ‘a group of individuals’ creates a dynamic situation with many individuals, for many and various reasons, not being attached to the team for the whole of the project or withdrawing because of that individual’s specialist expertise and its requirement on other projects.



## Project Charter



Can help build understanding at the early stages of a project:

### *Project Charter - "The BIG Picture"*

Outline requirements and limitations of the project  
(written by the sponsor in collaboration with project leader)

Discuss with team and key stakeholders

Signed off by: *ALL*

A2 - 23

"Every project should have a charter which sets out its purpose and requirements."

### Key elements of a Project Charter:

- Define customer expectations - the deliverable(s)
- Agree final deadline for deliverable(s)
- Establish what are the customer(s) criteria for the success of the project
- Define start and end points
- Define composition of team
- Agree what level(s) of risk are acceptable (priorities and constraints)
- Place limits on project resources (cash, people etc)
- Agree who will review progress and judge milestones
- Agree key reporting requirements

Use as basis for creating detailed project plan and contracts

## Supplementary topics



Further consideration should be given to:

- Team recruitment
- Team selection
- Competencies and attributes
- Personal development
- Training and development
- Conflict management
- Trust

**AP2 - 24**

This list of topics flows from the material presented in this module. They are at “the next level” of detail and interest. The intention is to develop additional material to cover these areas as Addenda to the module.

**AP2 :- Effective project team management**

**Supporting Value Enhancing Practices:**

**VEP 2.1 Project Team Organisation**

**AP2 - 25**

**VEP guidelines:**

- selection of contributing organisations
- selection of team members
- establishing critical success factors
- identifying clear roles and responsibilities
- developing and training project team personnel
- establishing a team culture
- team motivation
- resource management
- knowledge management
- managing challenge and change
- project communications
- leadership
- setting aggressive achievable targets
- preparing co-ordination procedures
- establishing a communication plan

Attachment 2.1-A Sample questionnaire for selection of project organisation

**A useful pocket guide:**

“The Team Memory Jogger™” Michael Brassard et al

IFS international Ltd Tel: 01234 853605 Fax: 01234 854499

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## **ACTIVE Principle 3: Effective Supply Chain Relationships**

Project relationships should be focused on encouraging the whole supply chain to act in unison to achieve clearly stated project goals. Overall supplier contribution in terms of broader project benefits must be recognised, rather than judgement being based solely on price. Within the context of the project objectives, innovation should be fostered and an equitable sharing of risk and reward should be incorporated into the commercial relationship.

Within the process industry it has only recently been recognised that to achieve business competitiveness, project performance is as important as superior product and process technology. For projects to be successful the entire supply chain must be aligned to project objectives, while proper apportionment of risk and reward should provide the opportunity for all participants in the supply chain to benefit.

All members of the supply chain, whether owner/operators, contractors or suppliers, should work together to maximise value, rather than seeking to move cost or risk up or down the supply chain. In this way competitiveness for both buyers and sellers can be improved.

Supply chain relationships develop over the life cycle of the project. The framework established at the outset of the project which defines the relationship should provide the basis for prompt resolution of problems as they emerge and provide an effective and timely way of meeting mutually beneficial objectives.

The application of this ACTIVE Principle will benefit all parties through a more equitable apportionment of risk and reward, greater clarity of project objectives, active participation in the creation of value throughout the supply chain and elimination of unnecessary cost. Where appropriate, these objectives may be achieved through an alliance partnership or risk and benefit framework agreement in which the parties formally take a stake in the project outcome, sharing risks and benefits in line with their stake.

Key elements for supply chain improvement are:

- Establishing clear targets and objectives
- Alignment of objectives between buyer and seller
- Effective and open communications between all parties
- Establishing a relationship appropriate to the business being conducted
- Encouraging innovation within the constraints of the project objectives

With these elements in place, the effectiveness of the supply chain will contribute to the long term performance of the industry. Confidence between buyers and the sellers will, over a period of time, develop into trust, thereby creating effective and long lasting relationships which benefit all parties.

The changing demands of buyers can be accommodated by an efficient and responsive supply chain provided there is proper recognition of the effort and resources needed to deal with the challenge.

Only by striving to create a value based supply chain with a vision to create a globally successful industry which encourages reinvestment, will the long term future for the industry be assured.

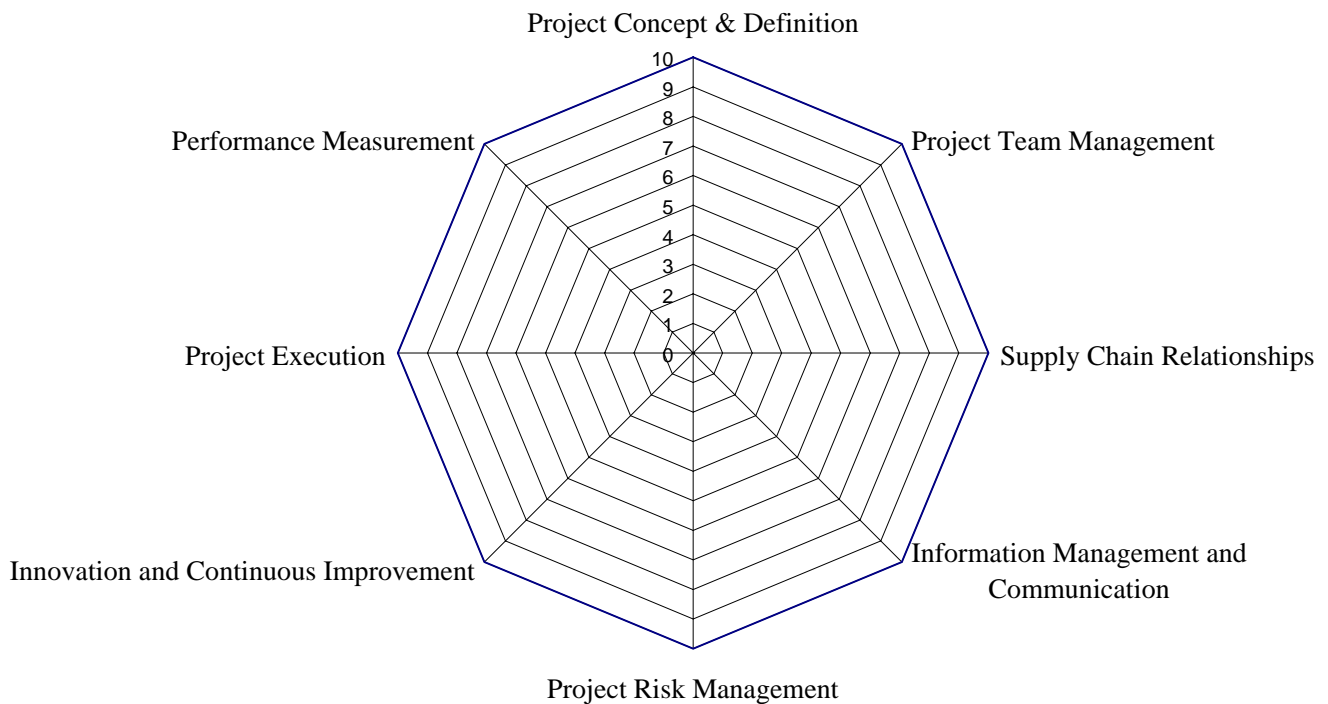
Extract from ACTIVE WORKBOOK Rev. 02. October 1998 *ACTIVE Principles* Section 2 Page 9 of 20

## ACTIVE Index Assessment

### AP3. Supply Chain Relationships

		VEP Ref:	Mark	W't	Score
3/1	Does the company have a policy statement on business ethics which are applied across the Organisation?	3.1		3	
3/2	Does the company routinely audit projects to ensure ethical standards are being maintained within the supply chain?	3.1		2	
3/3	Has the company recognised the need to move to non-adversarial relationships in its procurement and contract strategies?	3.1		3	
3/4	Does the company routinely set targets with supply chain companies for improving safety and protecting the environment?	3.1		2	
3/5	Has the company a strategy in place for simplifying contract documentation to improve clarity and reduce paperwork and inefficiency?	3.1		2	
3/6	What is the quality of the scoping of key contracts for projects before they are placed?	3.1		3	
3/7	Do the payment terms in contracts across the company take account of the cash flow needs of both buyers and sellers?	3.1		2	
3/8	Does the company have processes for effectively gathering and using supply market intelligence?	3.2		2	
3/9	Where alliances or partnerships are proposed, does the company have an effective process for partner selection?	3.2		3	
3/10	Does the company have in place a process of supplier evaluation which is employed before enquiry documents are issued?	3.2		2	
3/11	Is it company policy to ensure the process of tender evaluation is shared with all bidders?	3.2		2	
3/12	In awarding contracts, does the company have a proper supplier selection process?	3.2		3	
3/13	Does the company as a matter of policy incorporate dispute resolution processes in its contracts using ADR (Alternative Dispute Resolution) procedures?	3.3		2	

**Total Score for Section 3:**



## Guide to presentational material

“Supply Chain management is generally associated with the manufacture of products.”

The introduction of the concept to a Project-Based service environment has been “slow and steady!” The potential for projects is both exciting and wide-ranging.

The module seeks to introduce, or in some cases re-introduce, the “basics” drawn from the Manufacturing sector with the intention of catalysing proactive discussion and, by research, in a short timeframe incorporate the best of practices into the project environment.

“Highlight key words from AP3 which lead into the framework for this module”.

AP3-1

“Key elements for supply chain improvement.”

AP3-2

“Definitions of supply chains”

AP3-3

“Integration of supply chains at the baseline and functional levels.”

AP3-4

“Integration of supply chains at the internal and external levels.”

AP3-5

“There is a need to establish objectives and the characteristics in order that a company can address a potential change ---“

AP3-6

“---and understand the supply chain as a process and the supplier/customer relationships which are an essential feature of supply chains.”

AP3-7

AP3-8

“The evolving relationships have changed the traditional view of procurement.”

AP3-9

“From the “purchasers” and “suppliers” point of view there are a number of advantages.”

AP3-10

“But why should a company wish to change?”

AP3-11



“And what fundamental change, especially in projects, will improve the process ?”

AP3-12

“There will undoubtedly be problems arising from the transition to a Supply Chain culture. The solutions may seem to be difficult to implement but in many sectors these have been overcome.”

AP3-13

“A set of quotations from industry highlights the “depth” of the problem.”

AP3-14

“As usual, the culture of the company will have a bearing upon the “rate of transition.”

AP3-15

“Having decided to implement a new process and given due consideration to the company’s culture a redesign can be initiated.”

AP3-16

“The fundamentals of a process-orientated approach must be at the core of redesign.”

AP3-17

“In concluding this module, an extremely important subset of Supply Chain management needs to be introduced, especially in the context of projects. Logistics will be the subject of a supplementary VEP to be published later. In the meantime some of the issues are identified as a framework.”

“Definition of logistics.”

AP3-18

“Issues in logistics.”

AP3-19

“Strategic decisions will be taken in the field of logistics”

AP3-20

“There are also a number of important business links between the Supply and Logistics chain and business performance.”

AP3-21

AP3-22

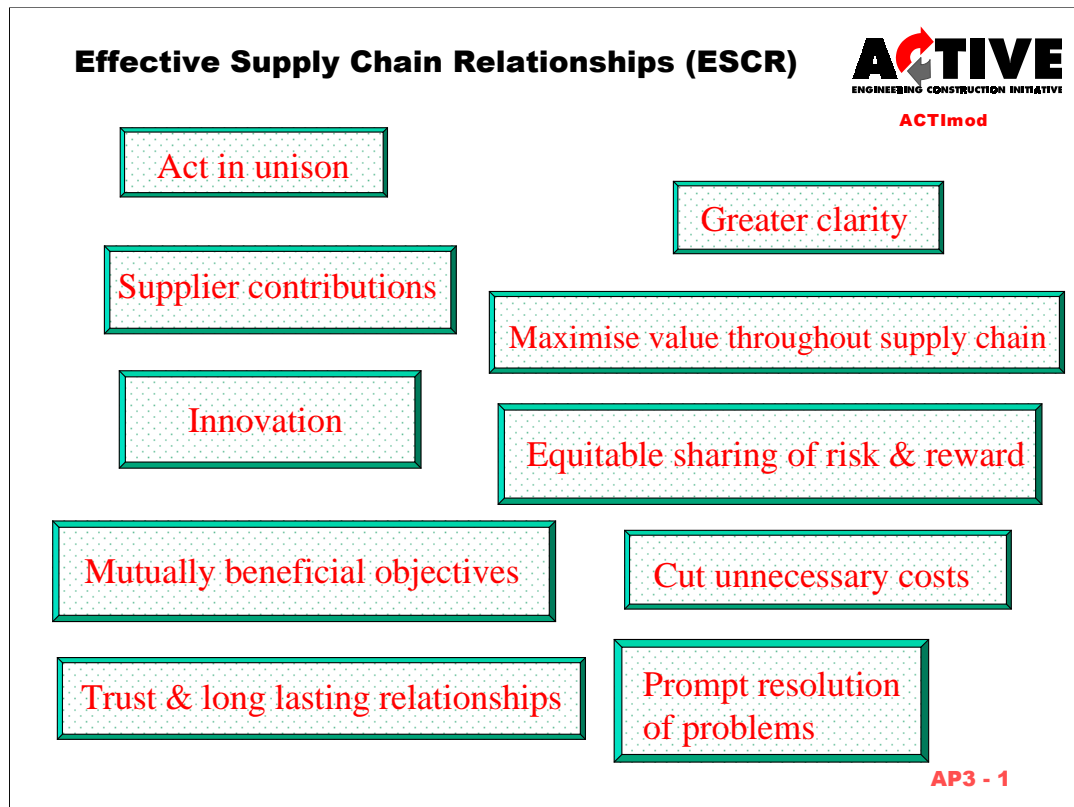
AP3-23

“Supplementary topics”

AP3.24

“Supporting value enhancing practices”

AP3-25



“Highlight key words from AP3 which lead into the framework for this module”

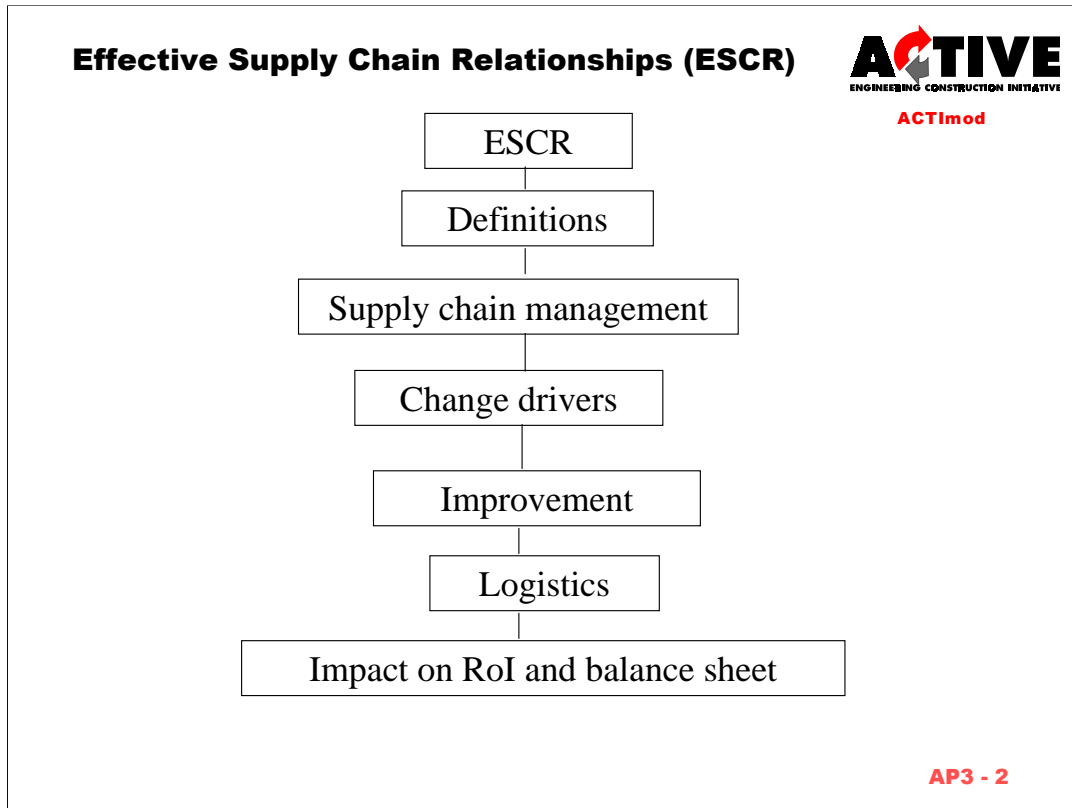
Project relationships should be focused on **encouraging the whole supply chain to act in unison to achieve clearly stated project goals**. Overall **supplier contribution** in terms of **broader project benefits must be recognised**, rather than judgement being based solely on price. Within the context of the project objectives, **innovation should be fostered** and an **equitable sharing of risk and reward** should be **incorporated** into the commercial relationship.

Within the process industry it has only recently been recognised that to achieve business competitiveness, **project performance is as important as superior product and process technology**. For projects to be successful the entire supply chain must be aligned to project objectives, while proper apportionment of risk and reward should provide the opportunity for all participants in the supply chain to benefit.

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“Key elements for supply chain improvement” are:

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With these **elements in place**, the **effectiveness of the supply chain** will contribute to the **long term performance of the industry**. Confidence between buyers and the sellers will, over a period of time, **develop into trust**, thereby **creating effective and long lasting relationships** which **benefit all parties**.

The **changing demands** of buyers can be accommodated by an **efficient and responsive supply chain** provided there is **proper recognition** of the **effort and resources** needed to deal with the challenge.

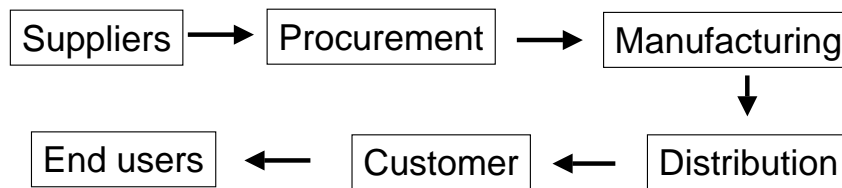
Only by striving to **create a value based supply chain** with a **vision to create a globally successful industry** which **encourages reinvestment**, will the **long term future for the industry** be assured.

## Supply chain - definitions



The network of organisations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of goods and services.

### Manufacturing model:



AP3 - 3

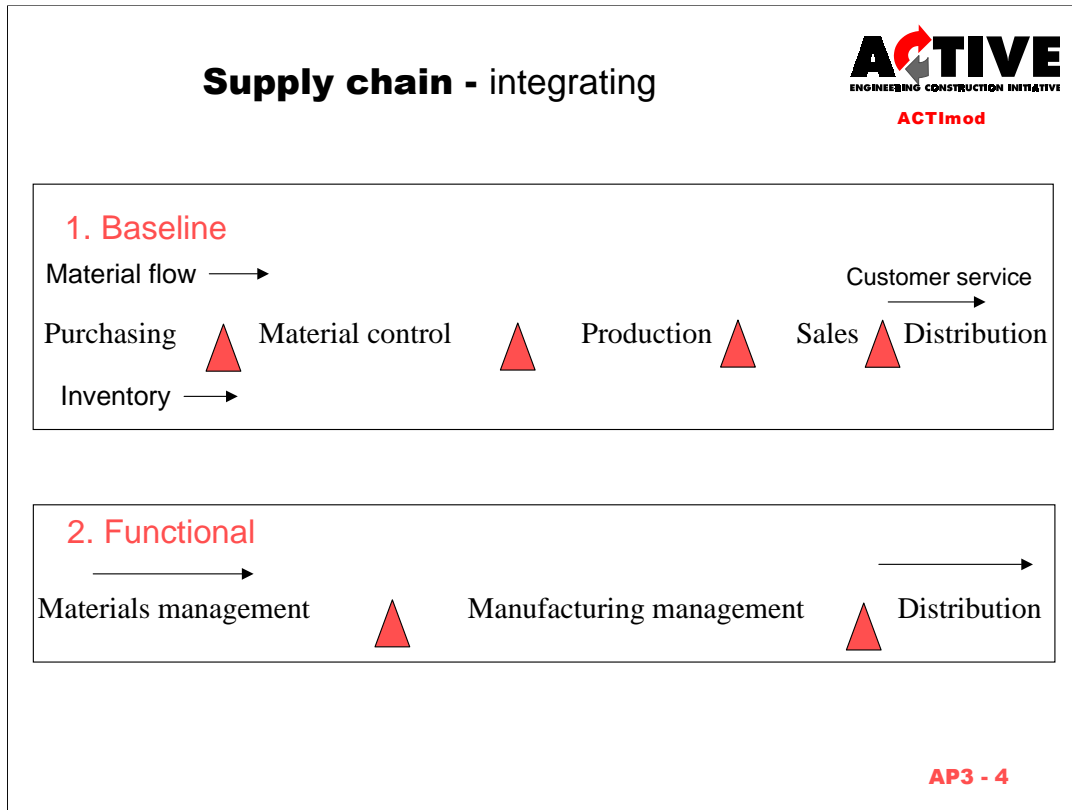
“Definitions of supply chains.”

Additional:

“The resources utilised in the delivery of a service from supplier to customer or client”

or

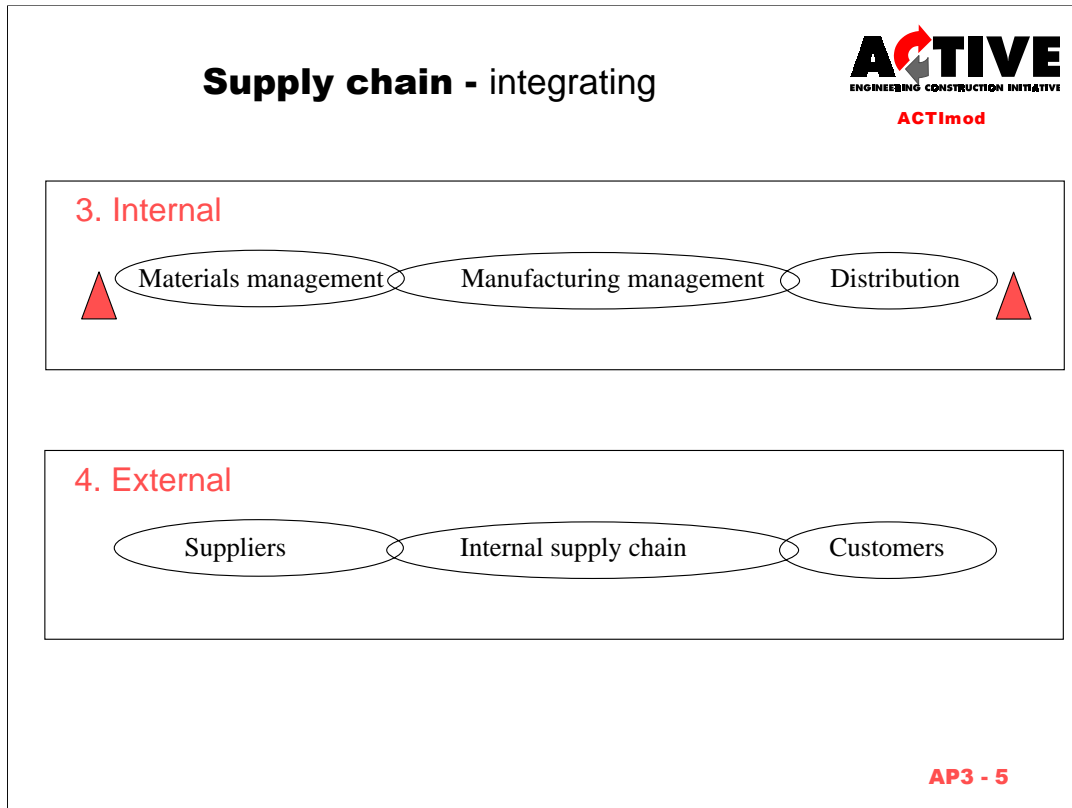
“The whole process with raw material inputs and customer or client delivery output”



“Integration of supply chains at the baseline and functional levels.”

On redesigning the process to incorporate all the salient features of supply chain management, a series of steps need to be considered.

- 1. Baseline.** The ‘traditional’ view with various functions interfacing to manage the flow of raw materials from entry to exit and the customers finished product.
- 2. Functional.** A model which reduces the process to three basic elements of materials acquisition, conversion and eventual distribution.



“Integration of supply chains at the internal and external levels.”

**3. Internal integration.** The functional model developed by removing the functional divisions and replacing them with a process linked together without traditional separations.

**4. External integration.** The incorporation of the external suppliers and customers into a totally integrated chain.

## **Supply chain management**

### **Key Objectives:**

- To satisfy client needs more effectively & efficiently
- To obtain competitive advantage
- To minimise total cost

### **Characteristics:**

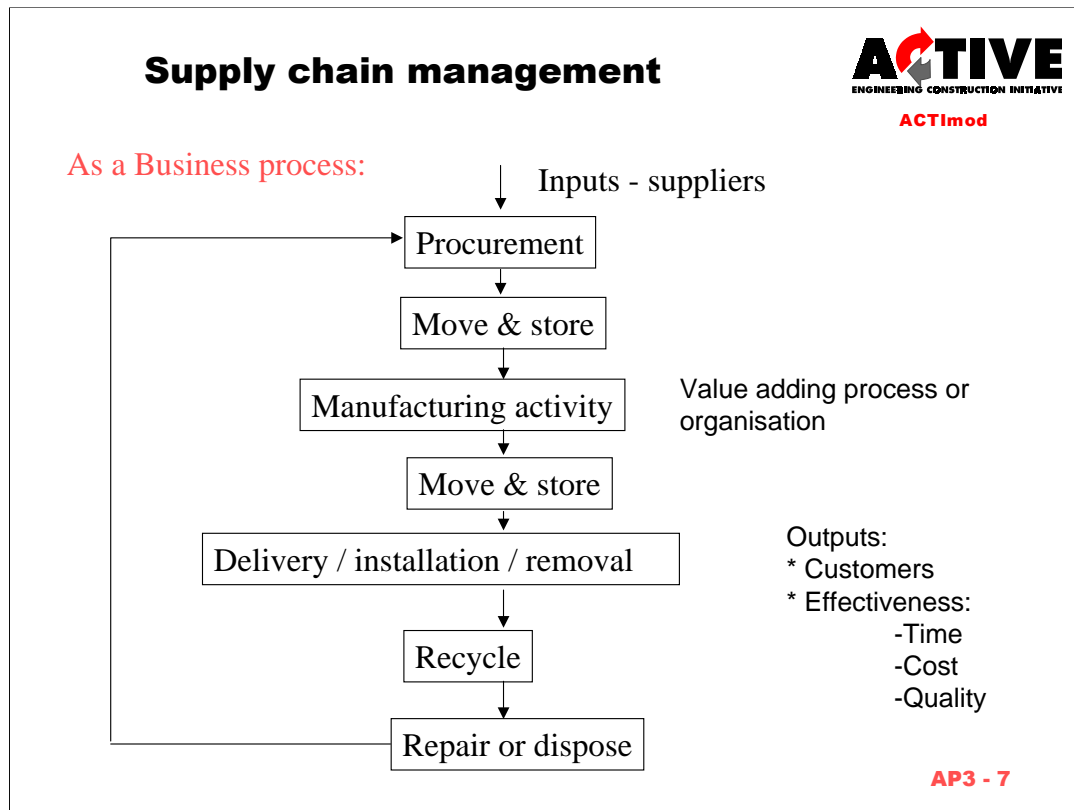
- Top level commitment
- Clearly stated and jointly agreed objectives
- Long term relationships
- Working together in the project team
- Involvement of all disciplines

**AP3 - 6**

“There is a need to establish objectives and the characteristics in order that a company can address a potential change ---“

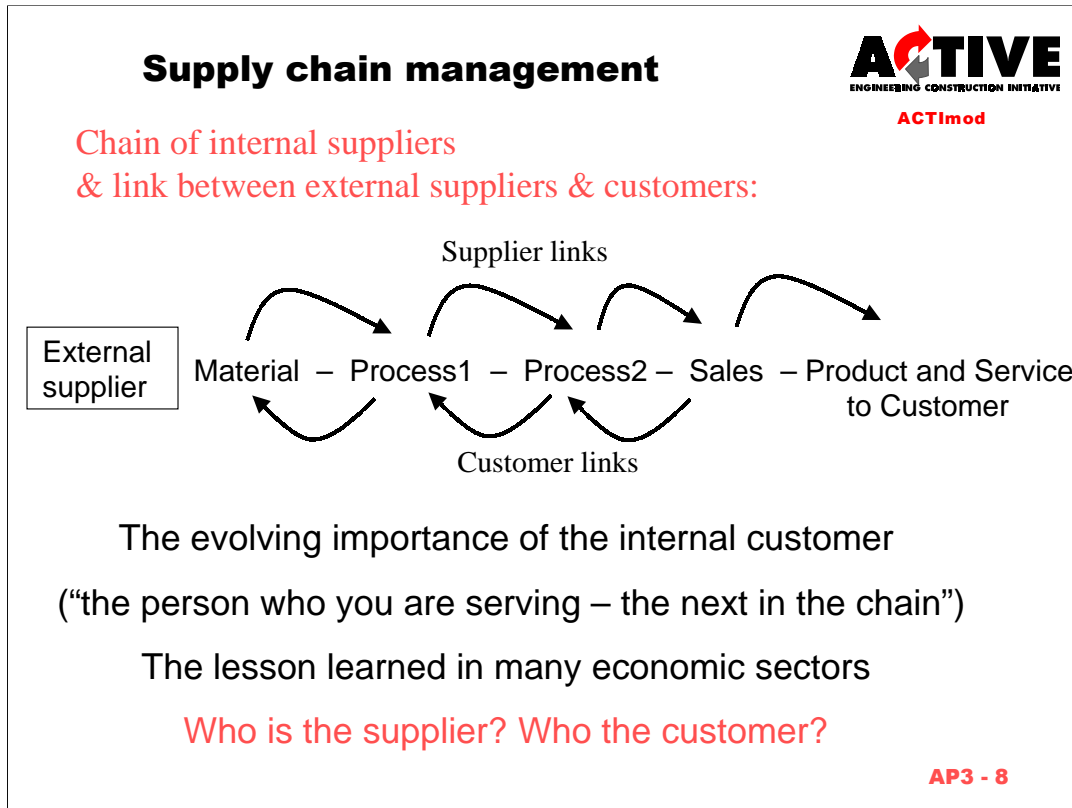
Supply Chain Management (SCM) is not primarily about the issues of performance measurement and cost reduction measures. It is a recognition that by involving individuals, be they client or supplier, in a more open relationship benefits will accrue all round.





“---and understand the supply chain as a process and the supplier/customer relationships which are an essential feature of supply chains.”

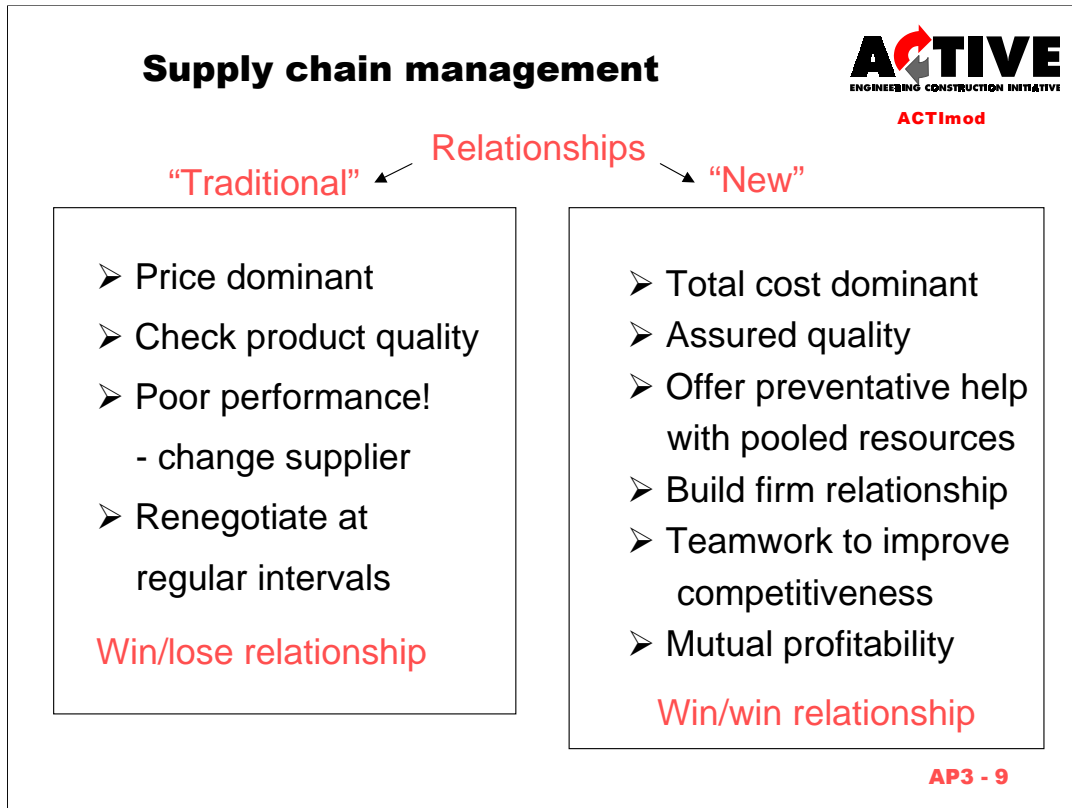
SCM is not only a production related process but it affects the whole of the business and impacts upon the financial performance of the company.



“---and understand the supply chain as a process and the supplier/customer relationships which are an essential feature of supply chains.”

One of the most important lessons to have been learned in business re-organisation is the place of the Customer, both internal and external to the company.

A simple but extremely effective and quite profound concept, borrowed initially from the financial service sector, is that the next person in the chain is your customer.



“The evolving relationships have changed the traditional view of procurement.”

There is a clear difference between the traditional and emerging view of the supplier relationship -----

## Supply chain management

### Advantages:

#### Purchasers

- Secured supply
- Design costs cut
- Delivery on time
- Foster service development
- Improved quality

#### Suppliers

- Improvement management capability
- Long term agreement
- Marketing advantage
- Improved technological capability
- Financial stability

AP3 - 10

“From the “purchasers” and “suppliers” point of view there are a number of advantages.”

----- with advantages to each of the participants in the chain.

## Supply chain drivers



- Client demands
- Technological solutions are more complex
- Resource optimisation
- Project time scales are critical
- Threat of competition

Within projects, certainly in the global environment, each of these are present in an increasingly competitive market.

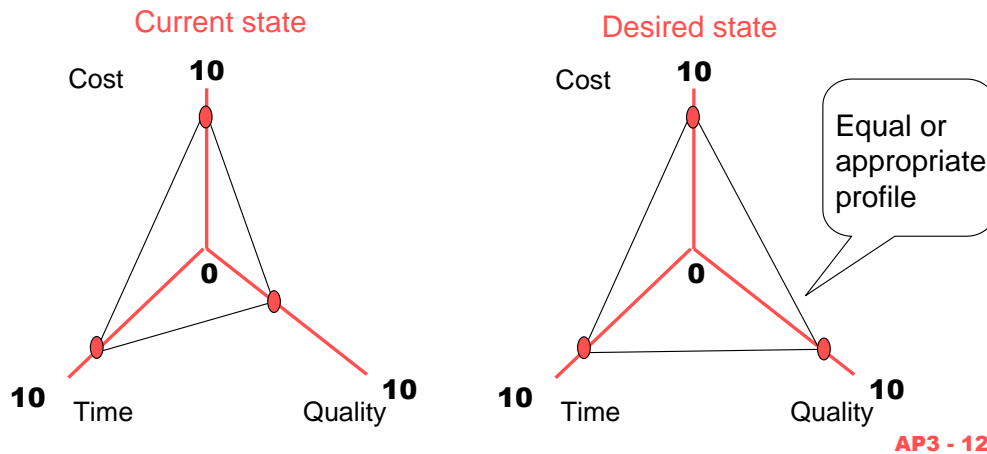
AP3 - 11

“But why should a company wish to change?”

The globalisation of the market-place has been the catalyst for change. The drivers of the required change are very real and, in the main, are customer or client led.

## Supply chain improvement

“There needs to be a change from a cost dominated approach to a value adding one which improves project performance overall.”



“And what fundamental change, especially in projects, will improve the process?”

The changes to the supply chain should ensure a balancing of the objectives of the participants certainly in terms of the Time, Cost and Quality criteria.

## Supply chain improvement



Solution to the problems of implementing SCM – *an Industry view*

- better relationships based on trust and mutual understanding
- “open book” procedures and clearer payment terms
- non-adversarial forms of contract
- more appropriate form of dispute resolution
- improved communication and exchange of information
- greater emphasis on the development of interpersonal skills
- feedback intra and inter companies

*“Utopia or an achievable culture change?”*

**AP3 - 13**

“There will undoubtedly be problems arising from the transition to a Supply Chain culture. The solutions may seem to be difficult to implement but in many sectors these have been overcome.”

An Industry perspective of implementation reinforces the fundamental view of the benefits envisaged in the initial model.

## Supply chain improvement



“Subcontractors are not viewed as equal partners in a project”

“Partnering is where a group of contractors get into bed together  
– the trouble is the main contractor has all the bedclothes”

“It doesn’t matter how clear the payment terms are, if they  
don’t want to pay, they won’t”

“Most contractors still perceive it as being in their own  
interest to continue with adversarial attitudes  
towards subcontractors”

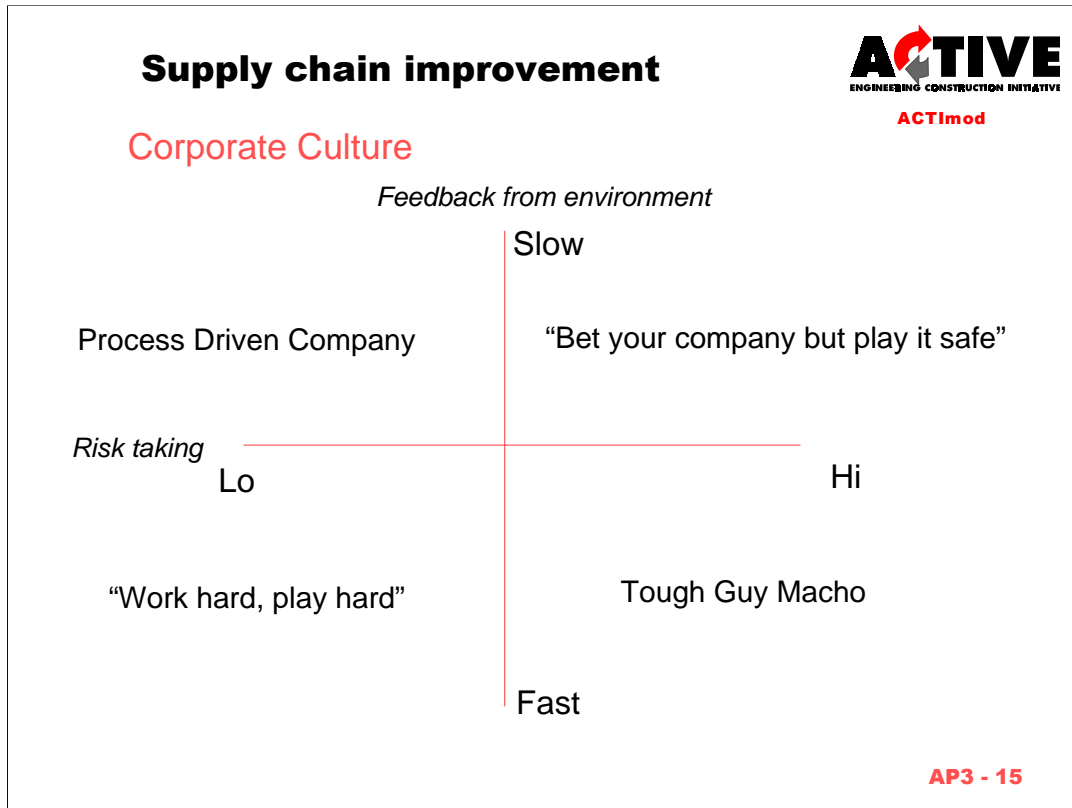
*Saad and Jones 1998*

AP3 - 14

“A set of quotations from industry highlights the “depth” of the problem.”

However there are many cultural ‘hurdles’ to be overcome as is evidenced by direct quotations recorded during a recent research study.

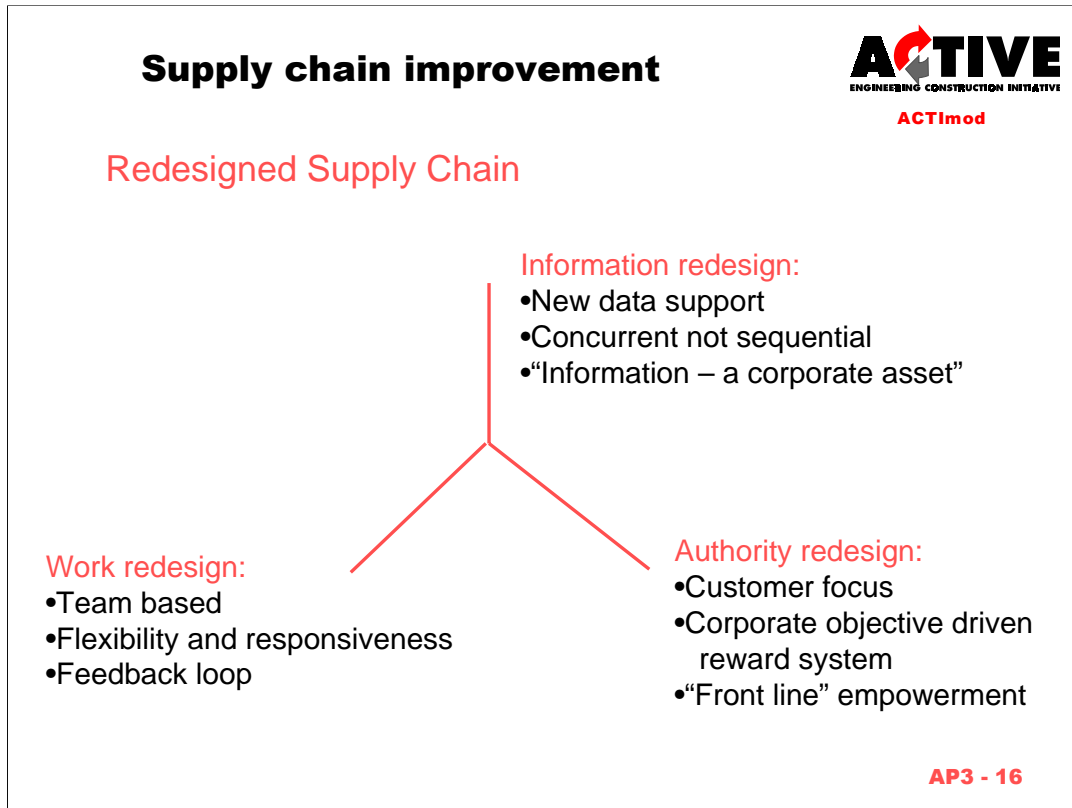




“As usual, the culture of the company will have a bearing upon the “rate of transition.”

The “cultural types” in other AP modules will also provide a focus for discussion.

In facing change, and the cultural implications for a company, one of the corporate models should act as an starting point in discussion.



“Having decided to implement a new process and given due consideration to the company’s culture a redesign can be initiated.”

In re-designing the supply chain three elements need to be considered

To move dynamically from the prior state to the desired state.

*“How can this process be introduced into the project environment?”*

## Supply chain improvement



### The Process-Orientated Approach

- described specific inputs and outputs for each stage
- crosses organisational boundaries
- focuses on goals and ends rather than action and means
- makes processes comprehensible to all involved
- relates processes to customers and their needs

*Saad and Jones 1998*

AP3 - 17

“The fundamentals of a process-orientated approach must be at the core of redesign.”

## Logistics - Definition

“The process of strategically managing the flow of materials, parts and finished goods from suppliers through the firm and on to the customers”

*Professor Martin Christopher*

AP3 - 18

“Definition of logistics.”

“In concluding this module, an extremely important subset of Supply Chain Management, Logistics, needs to be introduced, especially in the context of projects.

Defining the subsets, the strategies and the business relationships are included as an introduction in AP3-18 to AP3-23.

Logistics will be the subject of a supplementary VEP to be published later. In the meantime some of the issues are identified as a framework.”

## **Logistics - Issues**



### **Transportation**

How a firm gets goods in and out

### **Materials handling**

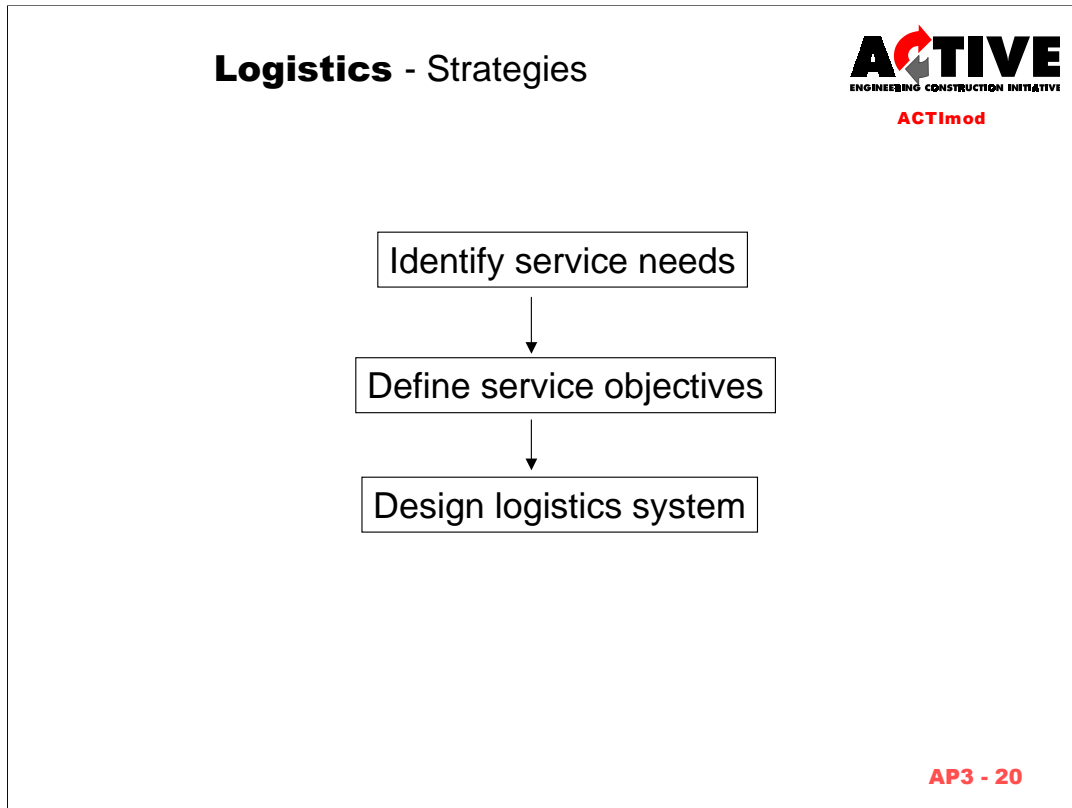
How materials are physically manipulated through the firm or project

### **Location factors**

Where the project is located

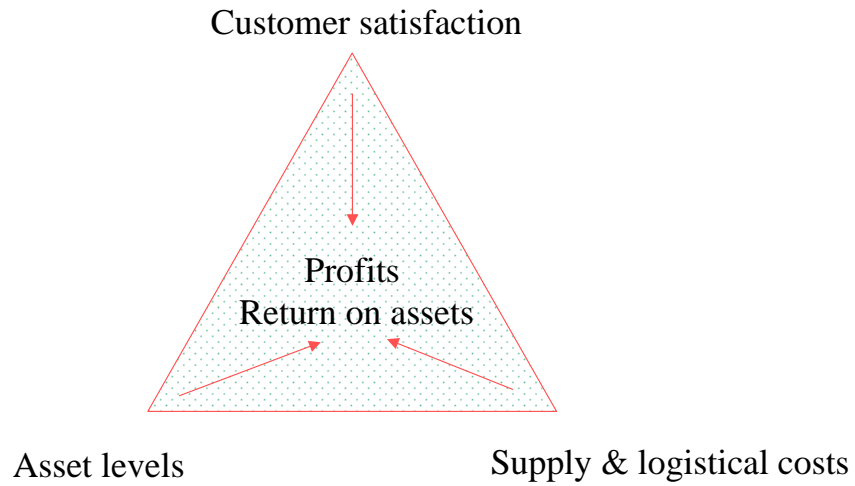
**AP3 - 19**

“Issues in logistics.”



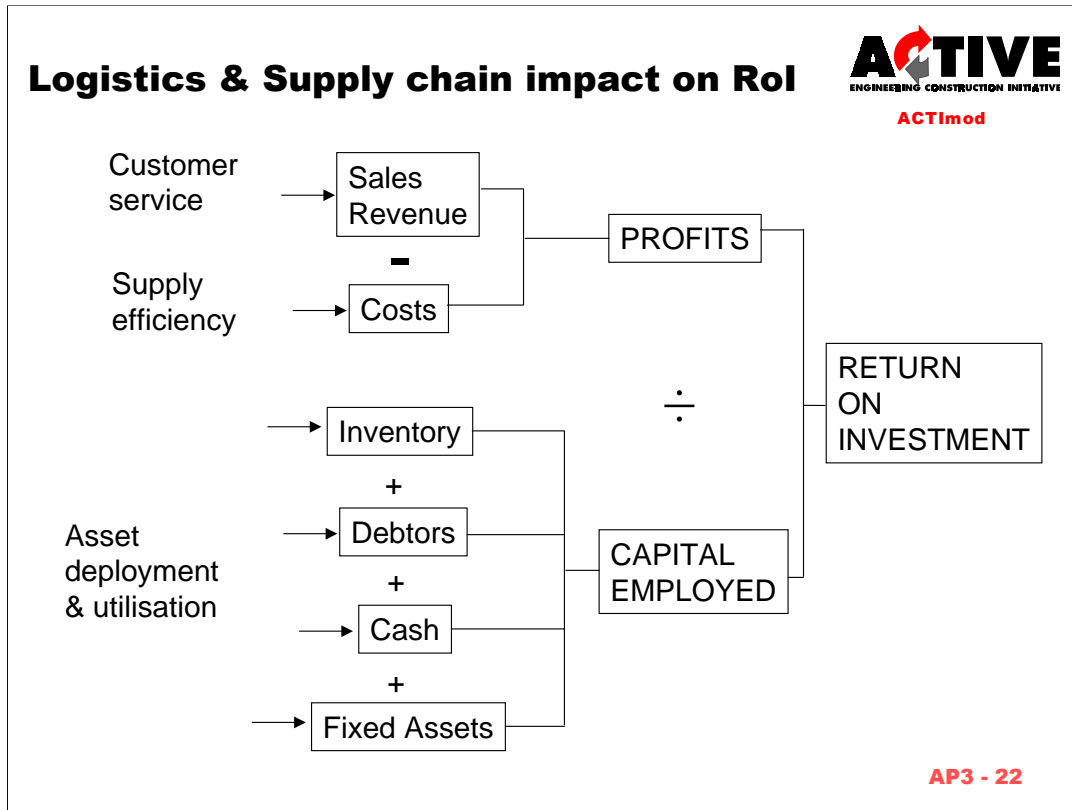
“Strategic decisions will be taken in the field of logistics”

**Logistics - & supply chain triangle**



AP3 - 21

“There are also a number of important business links between the Supply and Logistics chain and business performance.”



“There are also a number of important business links between the Supply and Logistics chain and business performance.”



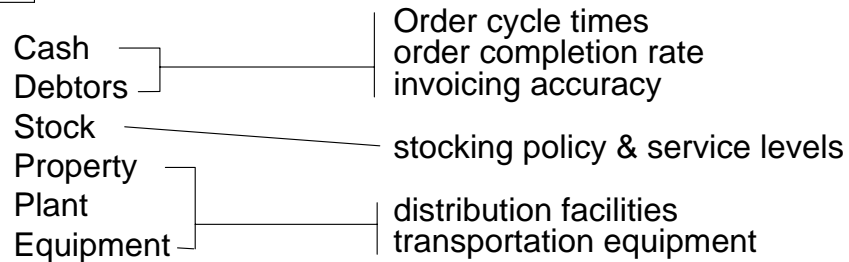
## Logistics & Supply chain management & the balance sheet



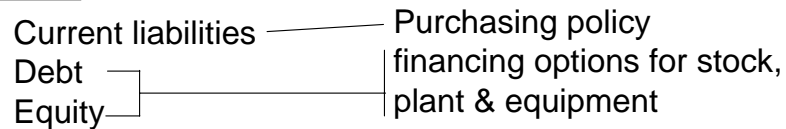
Balance sheet:

Supply chain & logistics variables:

### Assets



### Liabilities



AP3 - 23

“There are also a number of important business links between the Supply and Logistics chain and business performance.”

## Supplementary topics



Further consideration should be given to:

- Trust
- Business ethics
- Logistics: freight forwarding
- Financing projects: international
- Tax
- Insurance: export

AP3 - 24

This list of topics flows from the material presented in this module. They are at “the next level” of detail and interest. The intention is to develop additional material to cover these areas as Addenda to the module.

**AP3 :- Effective supply chain relationships**

**Supporting Value Enhancing Practices:**

VEP 3.1 Project Team Organisation

VEP 3.2 Supplier Selection

VEP 3.3 Contract Dispute Resolution

AP3 - 25

**VEP 3.1 Guidelines:**

business ethics	partnering and alliances
contract behaviour	risk management
procurement strategies	innovation and intellectual property
documentation	scoping
types of contract	supplier selection
contract monitoring and measurement	payment arrangements
resolving disputes	continuing relationships

**VEP 3.2 Guidelines:**

gathering supply market intelligence	supplier evaluation
preparation and issue of enquiry documents	pre-tender meetings
tender submission and bid evaluation	contract award
partner selection	

**VEP 3.3 Guidelines:**

contract drafting	negotiations
partnering and alliancing	mediation
MedArb	disputes review board
expert determination	mini-trial
rent-a-judge	adjudication

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## **ACTIVE Principle 4: Effective Information Management and Communication**

Capital projects require the generation and handling of large amounts of information, much of which is required subsequently in the operation and maintenance of the facility. The effective management of information during the life cycle of a project will do much to improve communications and increase project performance in terms of both time and cost.

During project execution, unnecessary duplication and regeneration of information should be avoided which not only saves time and resources but reduces opportunities for errors. Information must be provided in a timely way to project participants, relevant senior managers and others who need to know, thereby improving communications within the supply chain. The requirements for project handover to operations and maintenance at the time of project completion should be established at the outset of the project, covering information content, format and timing. The compilation of this information must be managed throughout the execution of the project to ensure handover with the minimum of effort and delay.

Key activities to achieve effective management of information include:

- Early mobilisation of appropriate personnel from client and contractor to agree the information requirements of the project
- Preparing a project information management strategy at an early stage of the project
- Communicating that strategy to everyone involved
- Using the most appropriate information technologies to generate, transmit, index, store and communicate documents and data
- Agreement throughout the supply chain on essential information and documentation requirements, identifying responsible parties and timing requirements.
- Avoiding unnecessary documentation and needless circulation
- Presenting information in a concise and clear way to users at each project stage
- Collating information which can be handed over and transferred into operations and maintenance systems with maximum efficiency

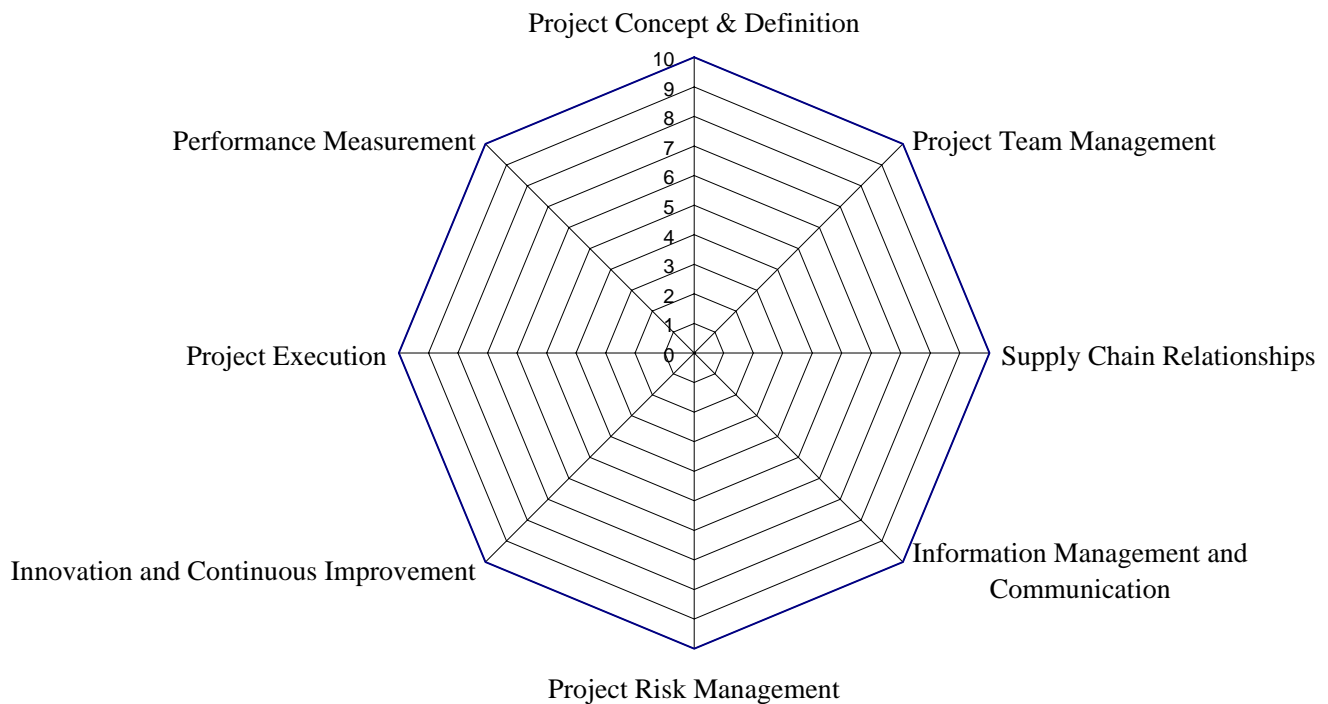
Extract from ACTIVE WORKBOOK Rev. 02. October 1998 *ACTIVE Principles* Section 2 Page 11 of 20

## ACTIVE Index Assessment

### AP4. Information Management and Communications

		VEP Ref:	Mark	W't	Score
4/1	Is it routine within the company to prepare an information management strategy for each project?	4.1		2	
4/2	Does the company have an effective internal communications strategy on projects?	4.1		3	
4/3	Does the company have defined formats and systems for the management of information?	4.1		2	
4/4	Are key supply chain partners involved in helping define the information requirements of projects?	4.1		2	
4/5	Does the company have mechanisms in place for the transfer of information from design to construction?	4.1		3	
4/6	Is the policy of the company to properly assess the value and relevance of paperwork generated on projects and minimise unnecessary or excessive documentation?	4.1		2	
4/7	Are the information systems used by the company on projects providing rapid access to information by those who need to use it?	4.1		3	
4/8	Is the use of information systems by the company seen to be effective by suppliers in improving communications within the supply chain?	4.1		3	

**Total Score for Section 4:**



### Guide to presentational material

“Highlight key words from AP4 which lead into the framework for this module”.

AP4-1

“Key elements of a project information management and communication process.”

AP4-2

“Definitions of data, information and communications.”

AP4-3

“The fundamentals of information and communication need to be introduced.”

AP4-4

“In considering the information needs of a company, the levels of management activity will affect the development of an information system.”

AP4-5

“In formulating a strategy for the development of an information system, the role of management needs to be understood.”

AP4-6

“The company needs to make a basic decision about handling its information.”

AP4-7

“The success of an information system will largely depend upon the management of timing.”

AP4-8

“Communicating information is basically one of the simplest and practically one of the most complex models.”

AP4-9

“Communication is “bi-directional”.”

AP4-10

“Within any organisation there are many and diverse linkages and interfaces internally and externally to its environment.”

AP4-11

“Similarly within projects, many organisations in the same location, in multiple locations both local and global will need to interface.”

AP4-12

“The communication system operates in two basic domains, one formal and the other informal.”

AP4-13

“Formal communication networks will develop and are often reinforced by informal and social relationships.”

AP4-14



“Some of the most powerful “communication devices”, both positive and negative, are the informal networks!”

AP4-15

AP4-16

“In order that communication will result in greater efficiency and effectiveness a number of factors need consideration.”

AP4-17

“Good communications benefit from a framework within which to operate.”

AP4-18

AP4-19

AP4-20

“As a divertissement an exemplar of “good” communication!!!!”

AP4-21

“In the context of projects an information system has been proposed - PMIS.”

AP4-22

AP4-23

AP4-24

“Supplementary topics.”

AP4-25

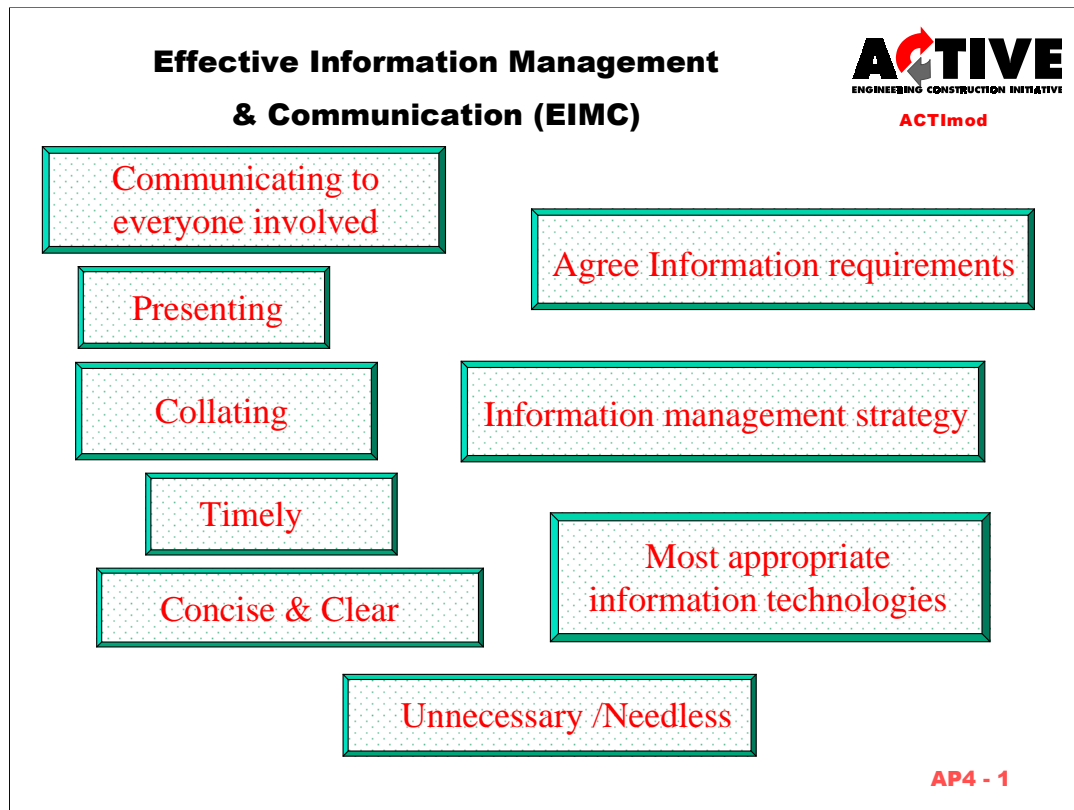
“Supporting value enhancing practices.”

AP4-26

“Life cycle management of information - Diagrams from VEP1.6 Attachment 1.6-A Appendix A”

AP4-27 to AP4-36

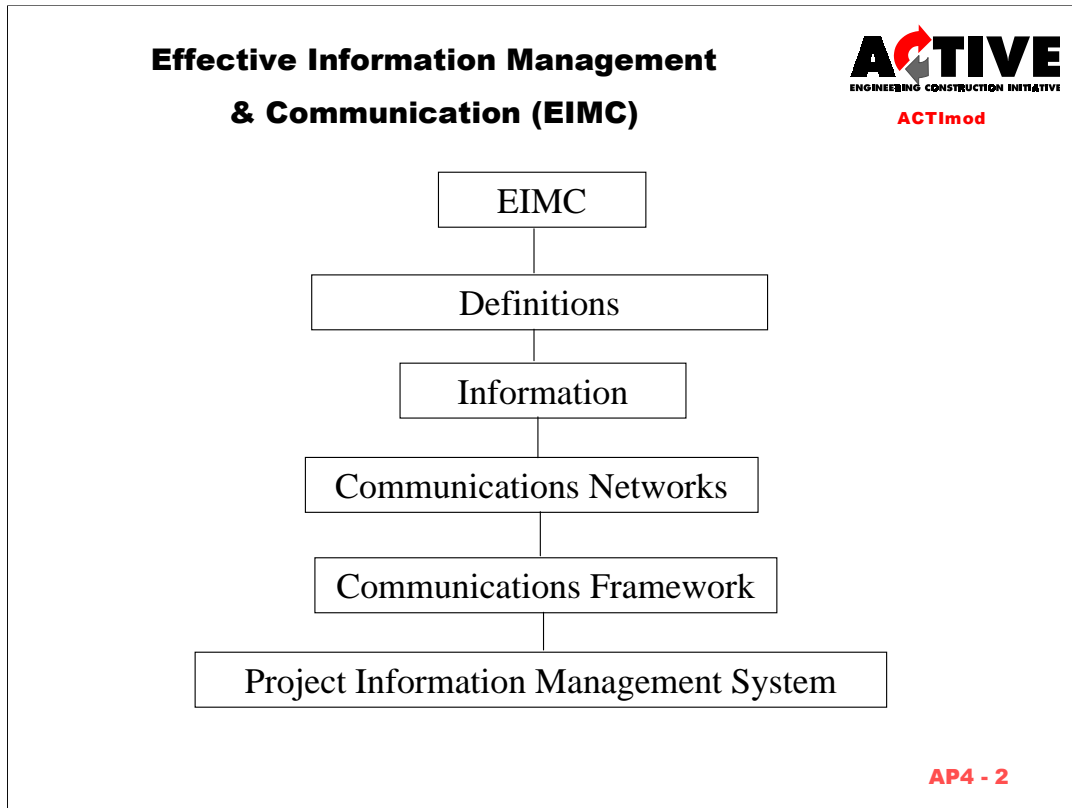
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“Highlight key words from AP4 which lead into the framework for this module”

Capital projects require the **generation and handling of large amounts of information**, much of which is **required** subsequently in the **operation and maintenance of the facility**. The effective **management of information** during the life cycle of a project will do much to **improve communications** and **increase project performance** in terms of both **time and cost**.

During **project execution**, **unnecessary duplication and regeneration of information** should be **avoided** which not only **saves time and resources** but **reduces opportunities for errors**. **Information** must be **provided** in a **timely way** to **project participants**, relevant senior managers and **others who need to know**, thereby **improving communications** within the supply chain. The **requirements** for project handover **to operations and maintenance** at the time of project completion should be **established at the outset of the project**, covering **information content, format and timing**. The **compilation of this information** must be **managed throughout the execution** of the project to ensure handover with the minimum of effort and delay.



Key activities to achieve effective management of information include:

- **Early mobilisation** of appropriate personnel from client and contractor to **agree** the information **requirements** of the project
- Preparing a **project information management strategy** at an early stage of the project
- **Communicating** that **strategy** to **everyone** involved
- Using the **most appropriate information technologies** to generate, transmit, index, store and communicate documents and data
- Agreement **throughout the supply chain** on essential information and documentation **requirements**, identifying **responsible parties** and **timing** requirements.
- **Avoiding unnecessary** documentation and **needless** circulation
- Presenting information in a **concise** and **clear** way to users at each project stage
- **Collating** information which can be handed over and transferred into operations and maintenance systems with maximum efficiency

## Definitions



### **Data**

“Facts which, when processed, are the basis of information”

### **Information**

“Result of processing data drawn from different sets, combined and analysed into one piece of management information”

### **Communication**

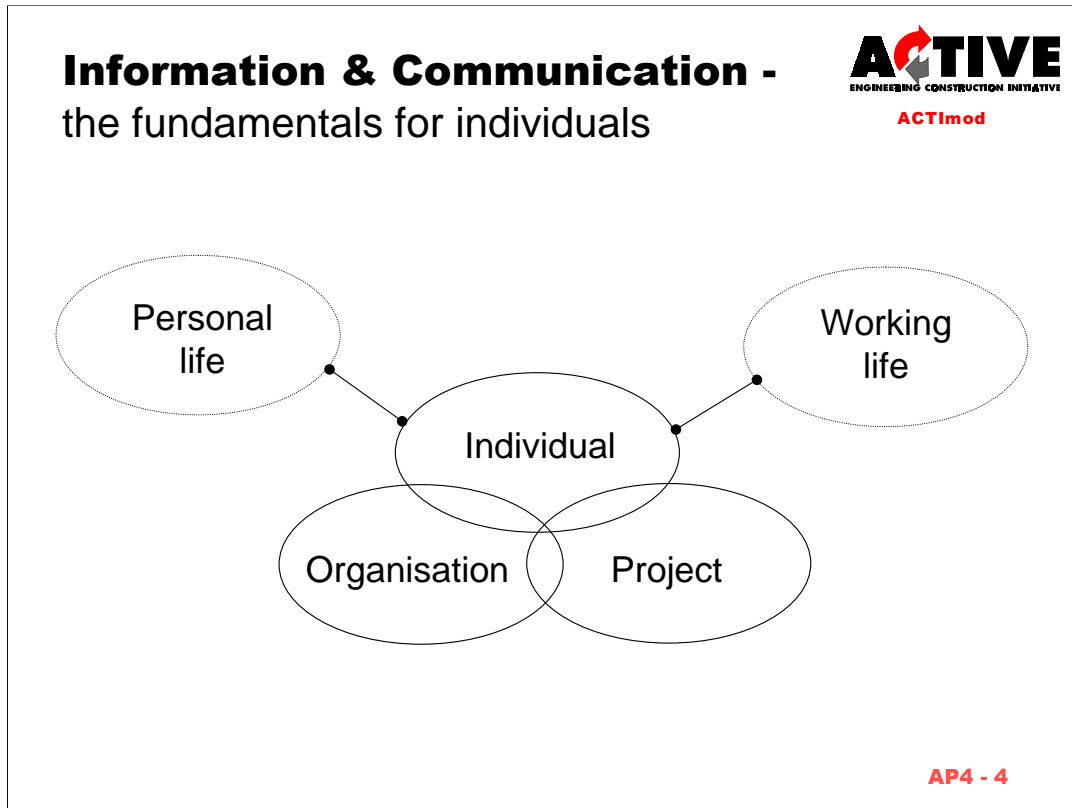
“Transmission and reception of data, information or knowledge from one person to another in a fully comprehensible way”

*“An individual without information cannot take responsibility. An individual who is given information cannot help but take responsibility.”*

*Jan Carlson, Former Chairman, SAS Airlines*

**AP4 - 3**

“Definitions of data, information and communications.”



“The fundamentals of information and communication need to be introduced.”

**Personal environment**

“We take in data, which we link together and convert into information.”



“We make choices on priorities and are exposed to various pressures in all aspects of our personal lives.”



“We decide what information to communicate, to whom and when.”



“The method and format by which we choose to communicate depends on personal preferences of the source, their understanding of the recipient’s preferences, proximity, convenience, etc.”

**Organisational environment**

“The objectives of the company should be at the forefront of an individual’s mind when deciding what, to whom and when to communicate.”

**Project environment**

“The objectives of the project should be at the forefront of an individual’s mind when communicating but the influence of the company and other stakeholders may introduce complications.”

## **Information - levels of management**



Categories of management activity:

### **Strategic Planning**

The development and implementation of the organisation's or project's goals and objectives.

### **Management Control**

The process of ensuring that goals and objectives are being achieved.

### **Operational Control**

The process of ensuring that specific tasks are completed effectively and efficiently.

A4 - 5

“In considering the information needs of a company, the levels of management activity will affect the development of an information system.”

In developing an information system for an organisation the definition of the levels of responsibility and the processes, which the information needs to serve, is extremely important and essential to the creation of an effective system.

## **Information - role of management**

- Formal authority and status
- Interpersonal roles as figurehead and leader
- Informational roles as monitor, disseminator & spokesperson
- Decisional roles as entrepreneur, negotiator and resource manager

A4 - 6

“In formulating a strategy for the development of an information system, the role of management needs to be understood.”

### **Monitor:**

Seeks and receives information that may be used to advantage in the management of a project.

### **Disseminator:**

Distributes important information that may not otherwise be available.

### **Spokesperson:**

Transmits information to individuals outside of the team.



## Information - Push or Pull?



There are two extremes for communicating information:

**Push** - Is all information “pushed-out” to everyone in the organisation?



**Pull** - Do individuals “take” information they need out of the system when needed?

***Where does your company lie?***

A4 - 7

“The company needs to make a basic decision about handling its information.”

A balance needs to be achieved between, on the one hand overloading all individuals in the organisation with all of the information and on the other denying access to individuals.

The most efficient system, as evidenced by a number of in-company studies, is to create a system that serves the individual on an “as needs” basis.

## Information & Time Management

Important to have information available:

- **In the correct format**
- **In the right quantity**
- **At the proper time**

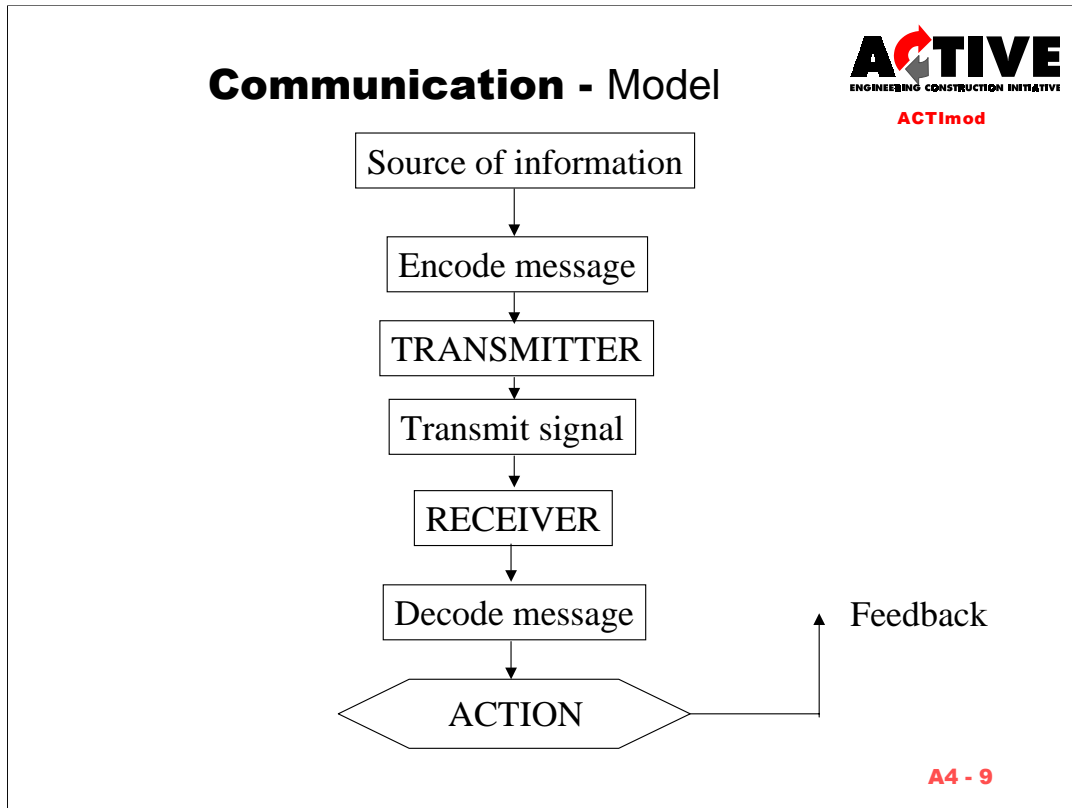
*“It is no good having too much of the wrong information too late!”*

**A4 - 8**

“The success of an information system will largely depend upon the management of timing.”

The paramount need is for “Just-in-time Information”, whether that be quarterly, monthly, weekly or daily. Timeliness is the key.

*“No point in having daily information if quarterly information is what is necessary!”*



“Communicating information is basically one of the simplest and practically one of the most complex models.”

Reasons for breakdowns in communication:

**Physical and Technical**

- long lines of communication
- transient locations
- mechanical and electronic malfunction
- noise interference

**Coding**

- interpretation of language and vocabulary
- specialised technical “jargon”

**Psychological**

- cultural misunderstanding
- intellectual differences, thinking in the abstract rather than the concrete
- power relationship; team leader and the team’s acceptance of attitude
- trust

**Overload**

- need to prioritise to avoid problems associated with increasing volume of information

## **Communication - Between individuals**

**“Tell”** - One-way communication with  
no response expected

**“Ask”** - Two-way communication with  
a response expected

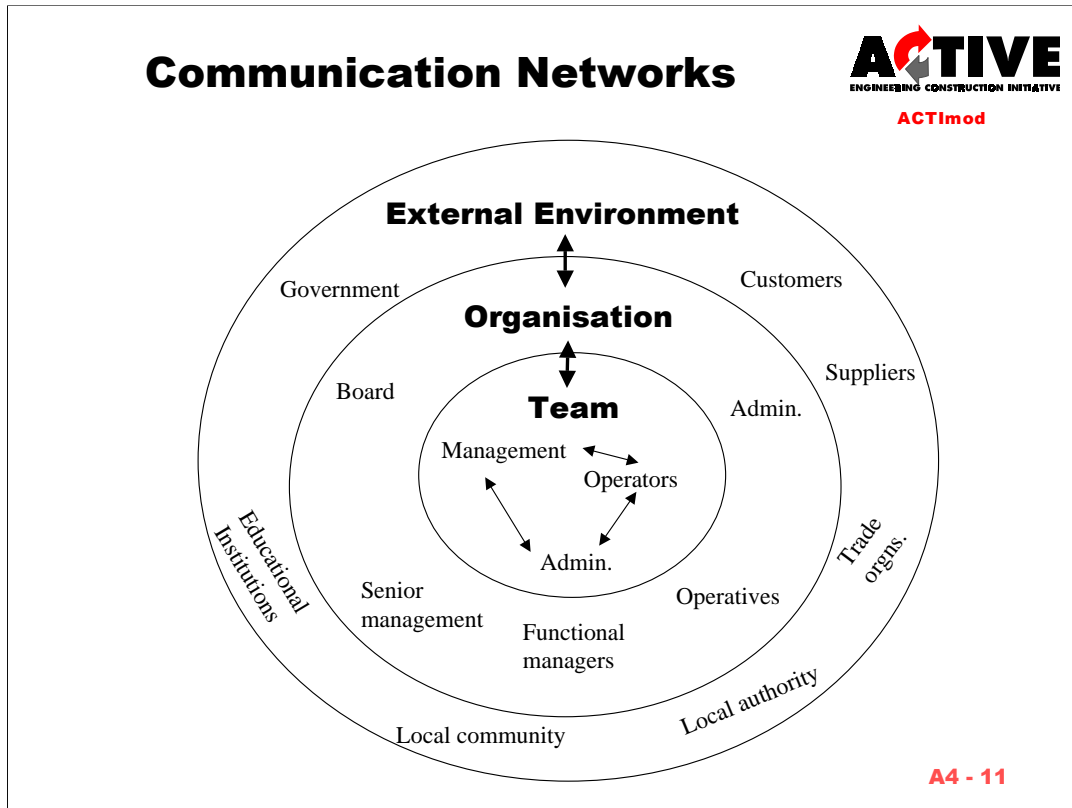
**“Consult”** - Two-way communication with  
a response required or demanded

A4 - 10

“Communication is “bi-directional”.”

Communication generally is seen to be “common sense”. Many of the recorded project failures however can be attributed to a “breakdown in communication”. None more important, and obvious, than between individuals.

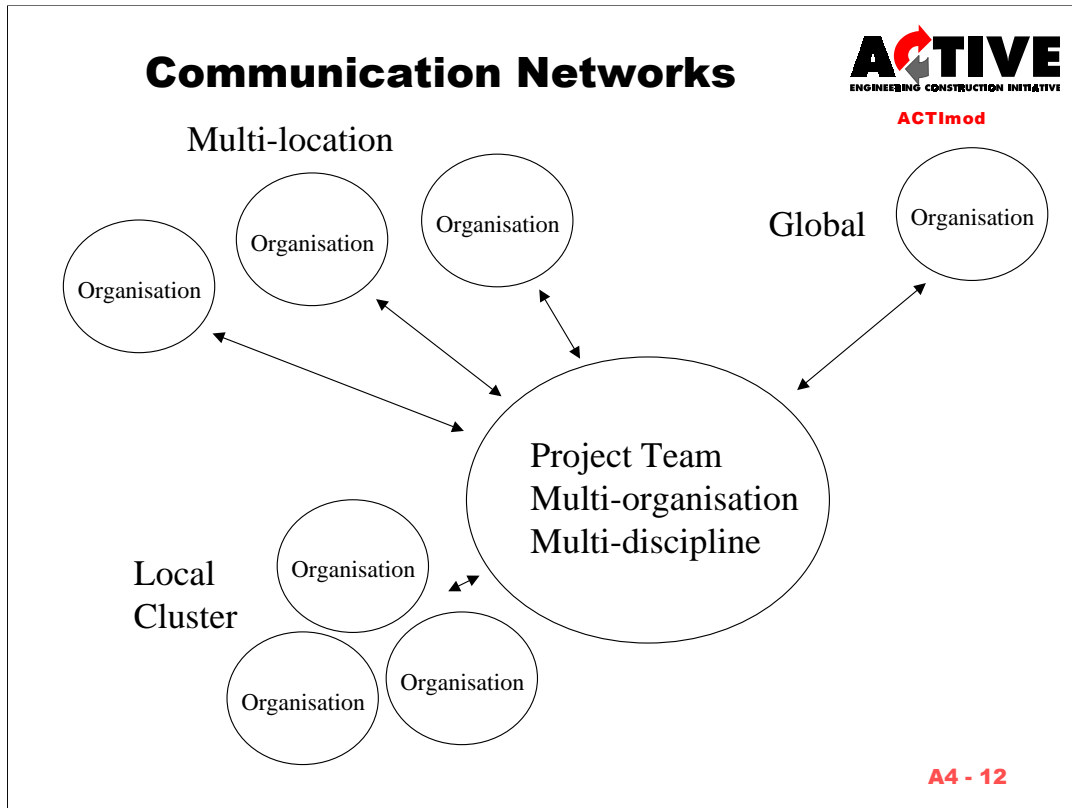
The way a “communication” is framed will affect the response to the “communication” and will potentially lead to misunderstandings and conflicts.



“Within any organisation there are many and diverse linkages and interfaces internally and externally to its environment.”

This is a rather traditional view of teams which are embedded within an organisation, which is itself the focal point, and often therefore hampers information flows.

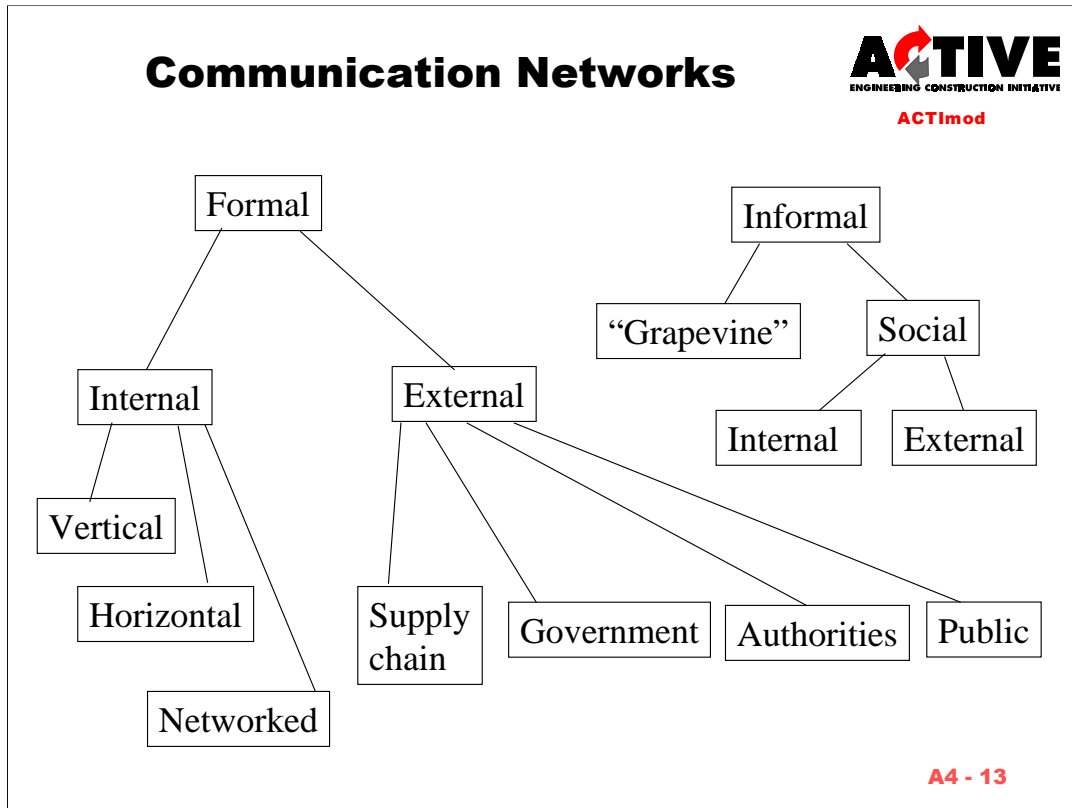
The communication network is complex and multi-dimensional. It is obviously necessary to manage the situation by ensuring that the level of the content, terminology and timing of a “communication” is wholly appropriate.



“Similarly within projects, many organisations in the same location, in multiple locations both local and global will need to interface.”

Now the Project Team is the focal point and feeds off the organisations it needs to achieve its goal. The information flows will cross many traditional boundaries which may have to adapt or even disappear !

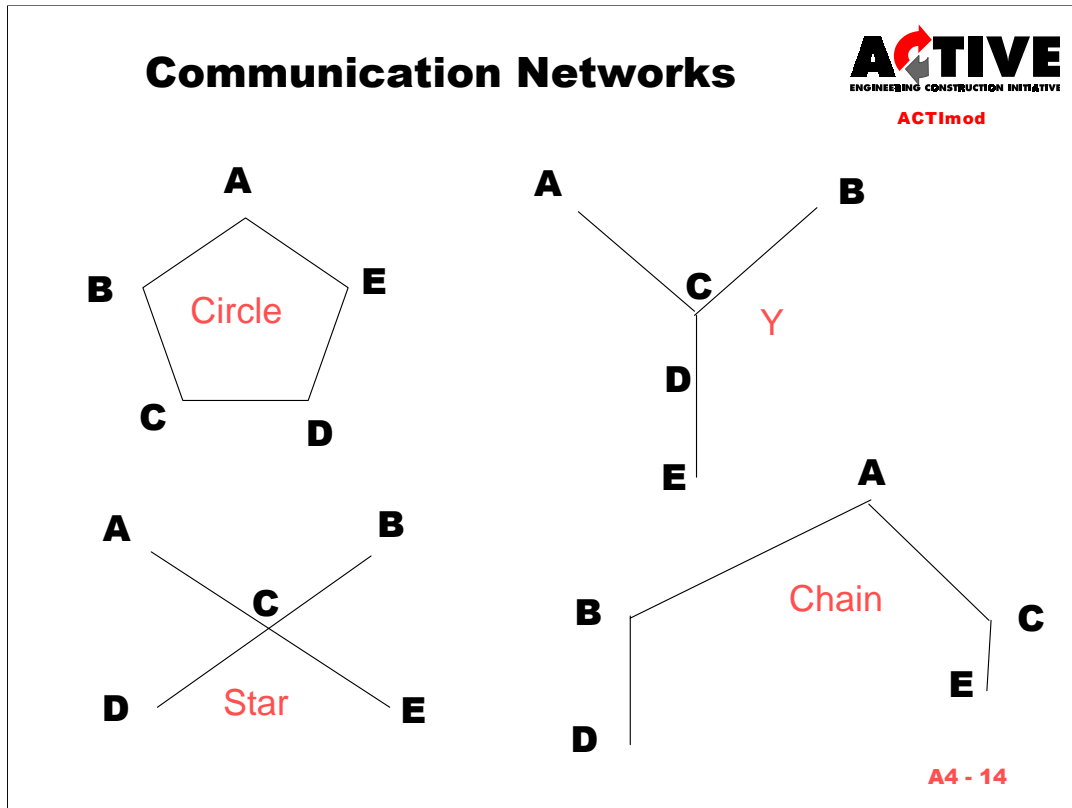
As one moves out from the co-located project team, the balance between face-to-face and appropriate electronic media for communication is shifting rapidly to a highly-connected network environment which will increasingly exploit the internet.



“The communication system operates in two basic domains, one formal and the other informal.”

Communication operates in two separate areas. The formal area is very much concerned with the practicalities of the transfer of information both internally within the company and externally to the company’s supply chain and external agencies.

A potentially more dynamic area is that of the informal network where both positive and negative outcomes can result from “word of mouth” communications (AP4-14 to AP4-16 extend the basic model).



“Formal communication networks will develop and are often reinforced by informal and social relationships.”

**Circle:**

“A should only communicate with B & E and through them to C & D.”

**Star:**

“C communicates directly with A B D & E.”

**Y:**

“C communicates up to A & B and down to D & E”

“D & E can only communicate with A & B through C.”

**Chain:**

“B & C communicate with A.”

“D & E communicate to and through B & C.”

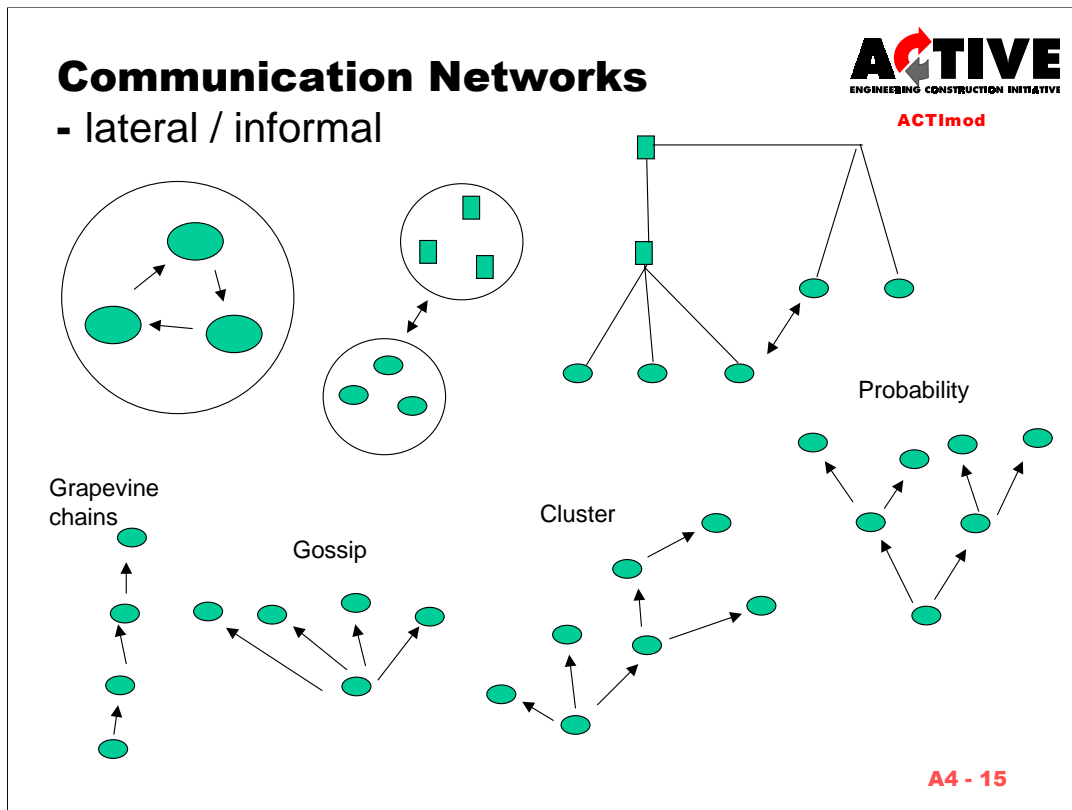
In performing simple tasks centralised networks (Star and Y) perform faster and more accurately than decentralised networks.

The converse is comparatively true for complex tasks.

Centrality affects the perception of the leader’s role and group member satisfaction.

	Leader	Group satisfaction
Centralised	Obvious	Low
Decentralised	Not obvious	High





“Some of the most powerful “communication devices”, both positive and negative, are the informal networks!”

### Grapevine chains

*A tells B tells C etc* – Problem of chinese whispers

### Gossip

*A seeks out and tells B,C,D,E, and F* - Interesting but usually non job-related information

### Probability

*A selects at random and tells F and Z who select at random and tell T,P,N and C*  
- Individuals indifferent about to whom they offer usually insignificant information

### Cluster

*A conveys information to a few selected individuals, C,D and F who select their individuals* - Information, which will be useful, passed to those who are trusted.

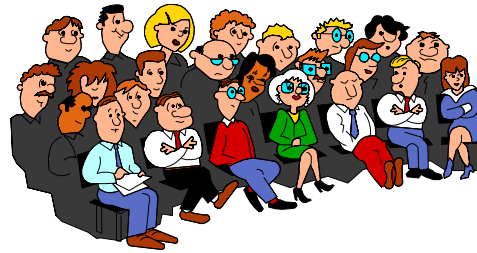
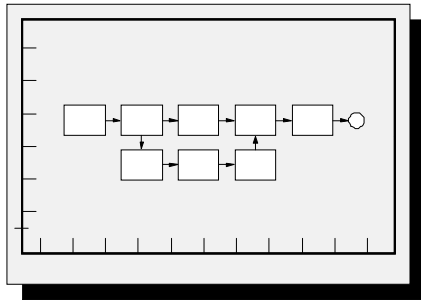
## Communication - lateral / informal

Follows the patterns of:

work flow

&

personal relationships



A4 - 16

“Some of the most powerful “communication devices”, both positive and negative, are the informal networks!”

- Occurs between members of work groups, project teams or functional departments
- Provides a direct channel for co-ordination and problem solving
- Occurs outside the chain of command with the approval and encouragement of team leaders
- Avoids possibility of slower formal channels
- Enables team members to form relationships

### Lateral Communication

- The “grapevine” operates at and across all levels, although not formally sanctioned, and is important in the formation of social groups
- Social occasions are important vehicles for informal communication

## Effectiveness of Communication



Factors that influence effectiveness:

- Formal channel of communication
- Authority structure
- Job specification
- Information ownership

A4 - 17

“In order that communication will result in greater efficiency and effectiveness a number of factors need consideration.”

Formal channels of communication:

- Cover widening distance as organisation grows
- Inhibition of free flow of information between organisational levels

Authority structure:

- Determination of who will communicate openly with whom
- Content and accuracy affected by individual differences

Job specialisation:

- Facilitates communication within groups
- Inhibition of communication between highly differentiated groups

Information ownership:

- Unique specialised information is a form of power for individuals who possess it
- Inhibition of open communication within organisations

## Good Communication - Framework

1. Seek to clarify your ideas before communicating
2. Examine the true purpose of each communication
3. Consider the total physical and human setting whenever you communicate:
  - sense of timing; circumstances under which you communicate
  - physical setting; communicate in private or elsewhere
  - social climate within project
  - custom and past practice; departing from or conforming with the expectations of team members
4. Communicate, appropriately, with others

A4 - 18

“Good communications benefit from a framework within which to operate.”

## **Good Communication - Framework**



5. Consider the overtones of the content of the communication:

- tone of voice
- body language
- receptiveness to responses
- language and vocabulary

6. Convey something of help or value to the receiver,  
whenever possible

7. Follow up your communication:

- encourage reaction
- encourage feedback

**A4 - 19**

## Good Communication - Framework

8. Ensure that actions support communications:

- good management practice as well as good communication
- clear assignment of responsibility and authority
- fair rewards and incentives
- sound policy enforcement

9. Communicate for tomorrow as well as today:

- meeting today's demands - consistent with long term goals  
and interests

10. Seek to understand as well as to be understood.

A4 - 20

## Communication - an exemplar



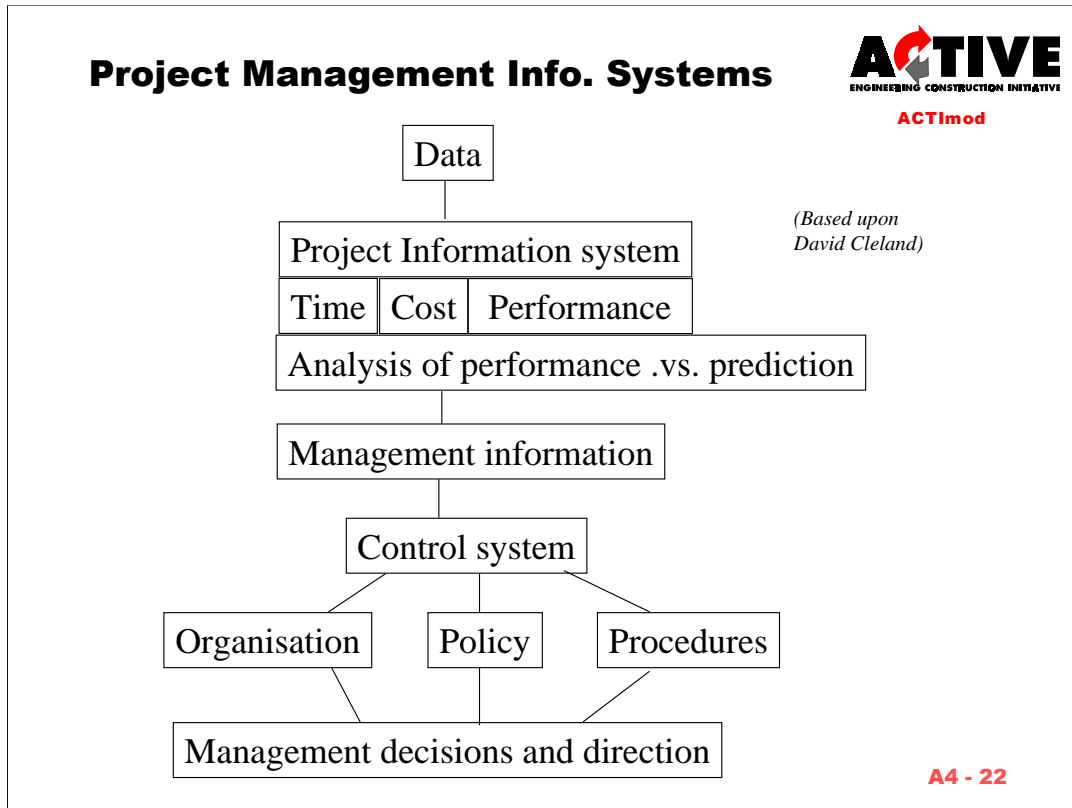
*“Because Christmas Eve falls on a Thursday, the day has been designated a Saturday for work purposes. Factories will close all day with shops open half a day only. Friday, December 25<sup>th</sup> has been designated a Sunday, with both factories and shops closed all day. Monday, December 28<sup>th</sup> will be a Wednesday for work purposes. Wednesday, 30<sup>th</sup> will be a business Friday. Saturday, January 2<sup>nd</sup> will be a Sunday and Sunday, January 3<sup>rd</sup> will be a Monday.”*

(A government edict)

A4 - 21

“As a divertissement, an exemplar of “good” communication!!!!”

Note - not UK Government!



“In the context of projects an information system has been proposed - PMIS.”

### Project Information; key questions for the Project Manager

What information do I need:

- as Project Manager
- to share with stakeholders
- about other interfacing projects in the organisation
- about the relationship between the project and the organisation's strategy
- to co-ordinate the project with other initiatives within the organisation
- about the implications of not having the project information
- to ensure the effective management of the project



## Project Management Info. Systems



What aims does the PMIS have ?

What should the PMIS not be used for ?

A4 - 23

PMIS aims to promote understanding and encourage integrated team working.

The PMIS needs to:

- Promote understanding
- Target controls
- Dispel artificial failure factors
- Allow project transactions
- Communicate status
- Predict the future
- Satisfy external enquiries
- Enhance resource usage
- Validate plans
- Comprehend change
- Reinforce perspectives
- Test expectations
- Recognise failure

PMIS should not be used to adversely affect project progress.

The PMIS should not:

- Deceive or confuse
- Postpone action
- Create and justify errors
- Retard or divert processes
- Support the status quo
- Mask failure

## Project Management Information

What additional factors  
should be considered ?

A4 - 24

### Project Management Information

- Appropriate level, depth and volume
- Agreed by all stakeholders
- Communicate information strategy to all stakeholders
- Ensure compatibility of information technologies
- Ensure that Information Gates\* are properly understood and managed in a time related way
- Transition to operations and maintenance efficiently completed
- The PMIS to be compatible with the Linear Responsibility Chart\*\*
- The technical systems to be appropriate, especially any electronic systems\*\*

\* **Information Gates.** Applying the principle of Decision Gates to information by ensuring that, at prescribed points in time, information needs and their fulfillment are formally considered and appraised. The ideal situation would be for there to be no “information delays” at a gate because of effective forethought and planning.

\*\* Supplementaries

## Supplementary topics



Further consideration should be given to:

- Linear Responsibility Chart
- Electronic systems
- CALS Industry Council (UKCIC)

AP4 - 25

This list of topics flows from the material presented in this module. They are not “the next level” of detail and interest. The intention is to develop additional material to cover these areas as Addenda to the module.

**Linear Responsibility Chart.** A two-dimensional matrix recording project activities and the individuals or organisations responsible together with a confirmation of the level of delegated action.

**CALS** The principle of Computer Aided Logistical Support is centred on the proposition that information should be available throughout the life of an asset. CALS uses modern information technology to integrate individuals, information and processes to the professional and commercial benefit of the project stakeholders.

**AP4 :- Effective information management & communications**

**Supporting Value Enhancing Practices:**

VEP 4.1 Information Management

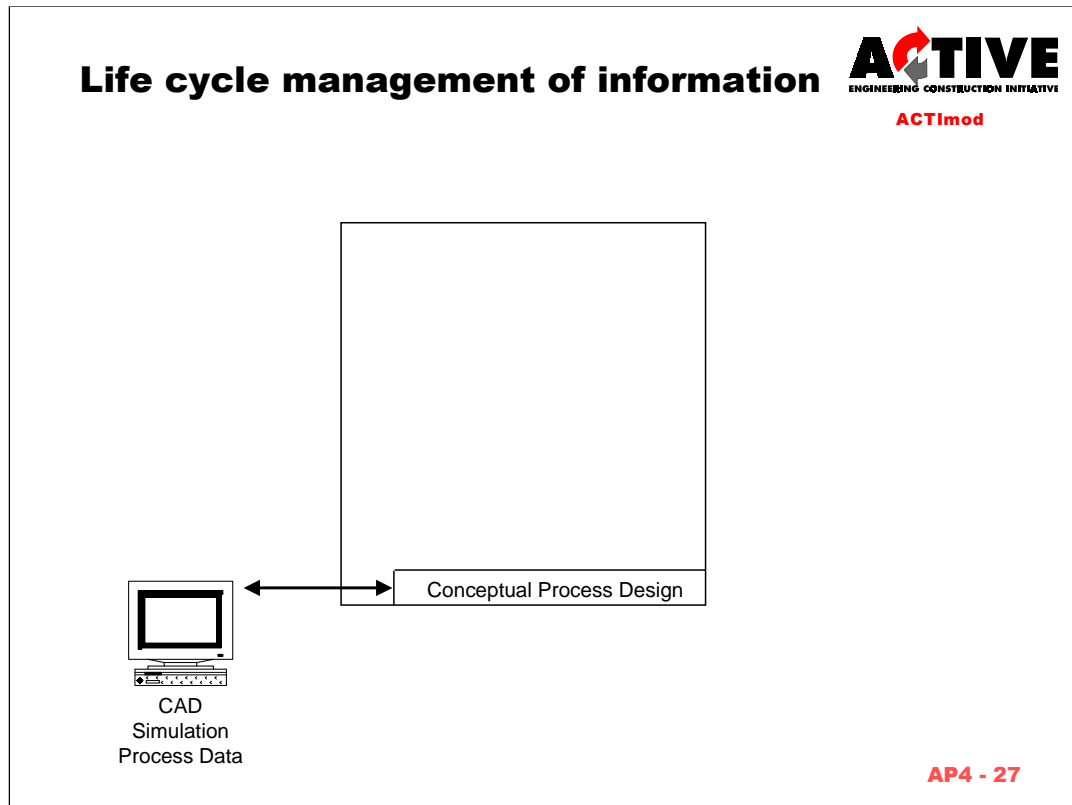
AP4 - 26

**VEP guidelines:**

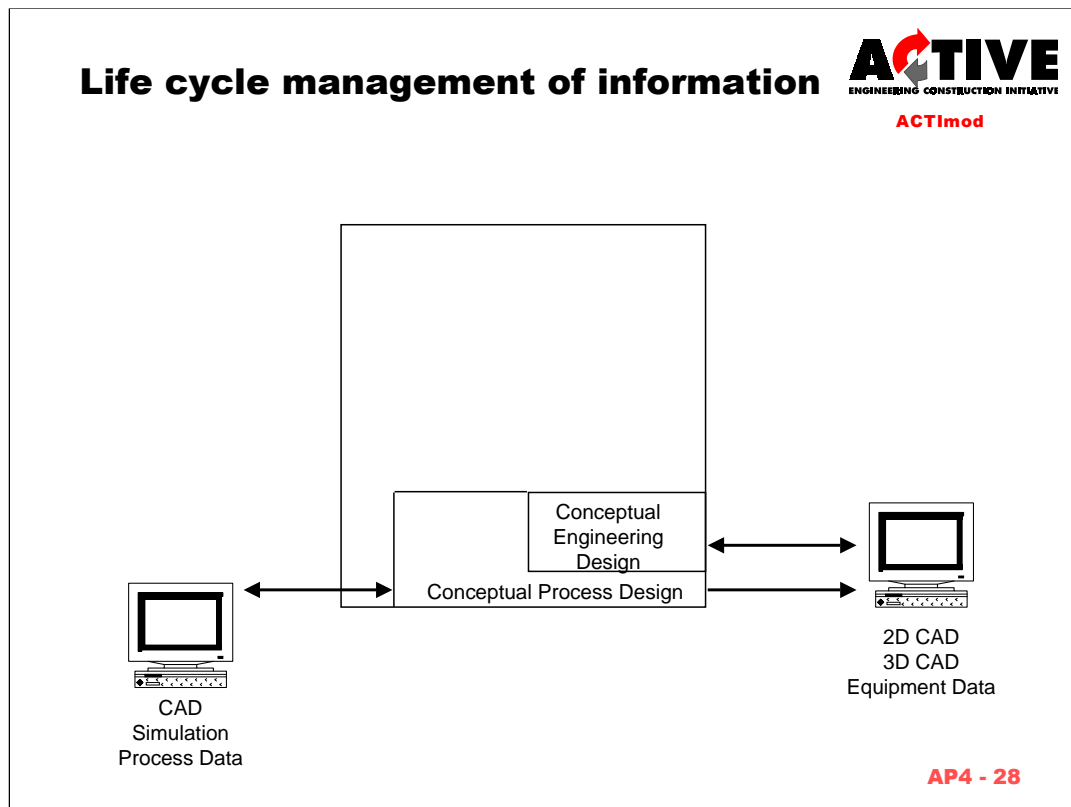
- preparing an information management strategy
- establishing information requirements
- defining data formats
- specifying information requirements
- reducing documentation
- establishing life cycle codes
- establishing information locations

**A useful pocket guide:**

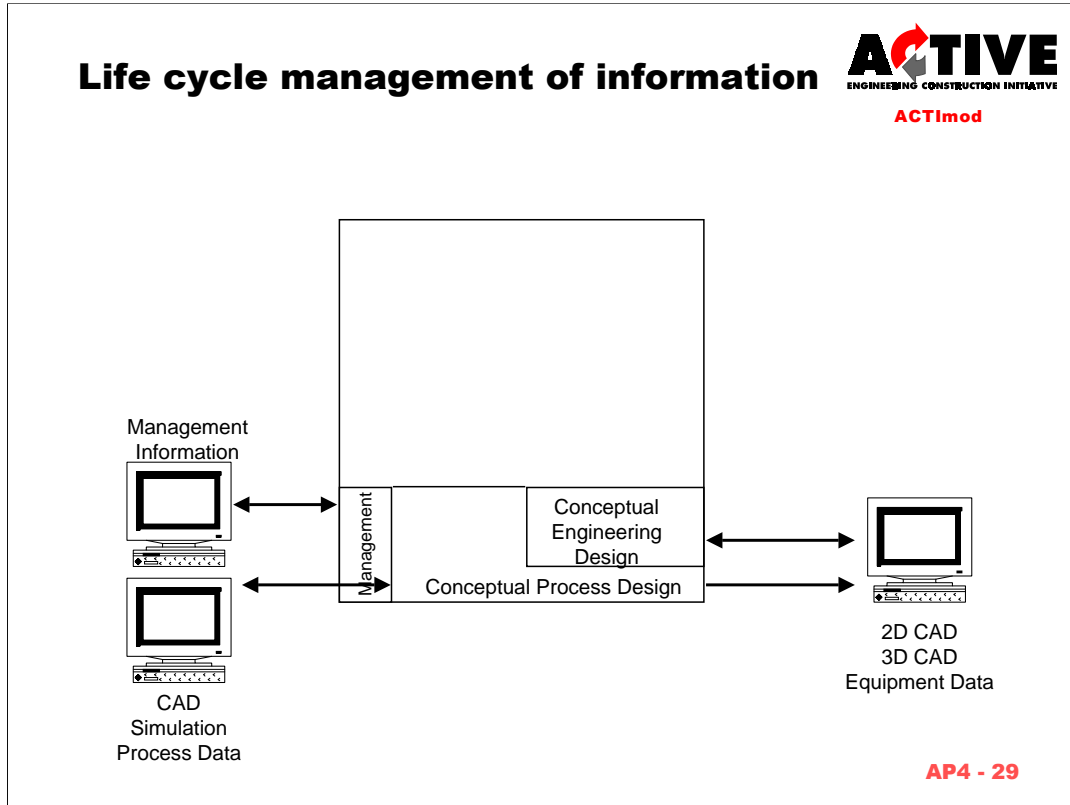
“Communication skills for engineers and scientists” Institution of Chemical Engineers, 1994 2nd edition, ISBN 0-85295-354-2



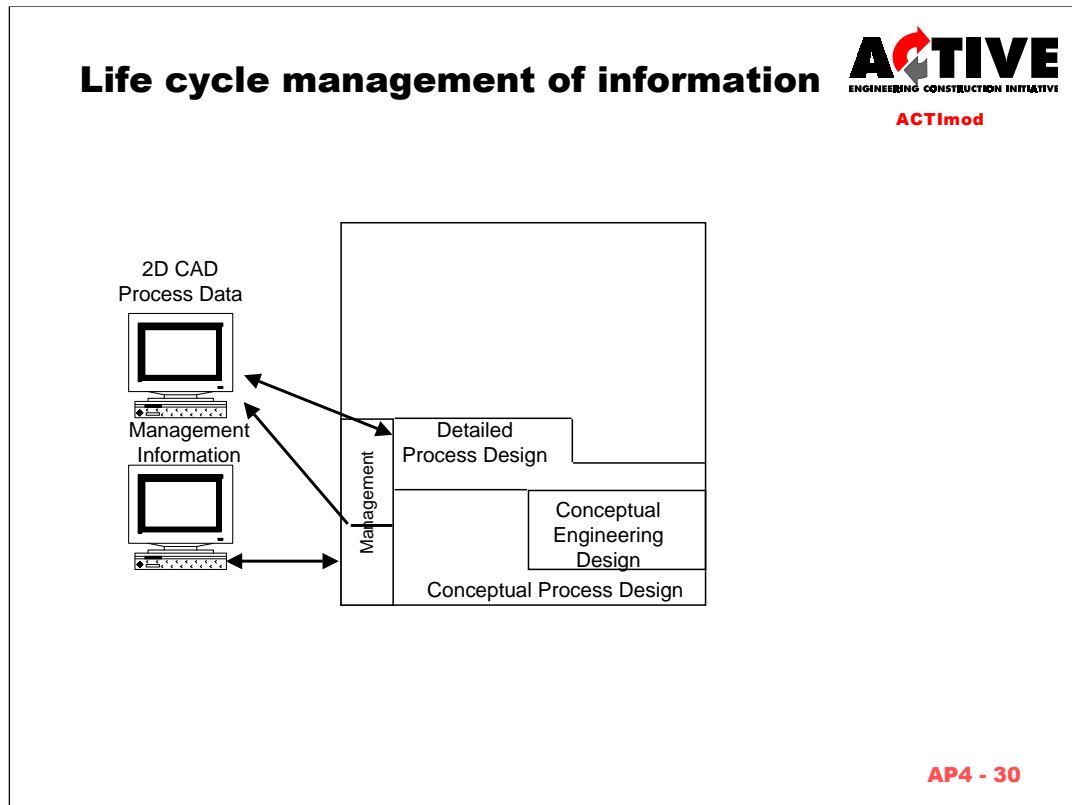
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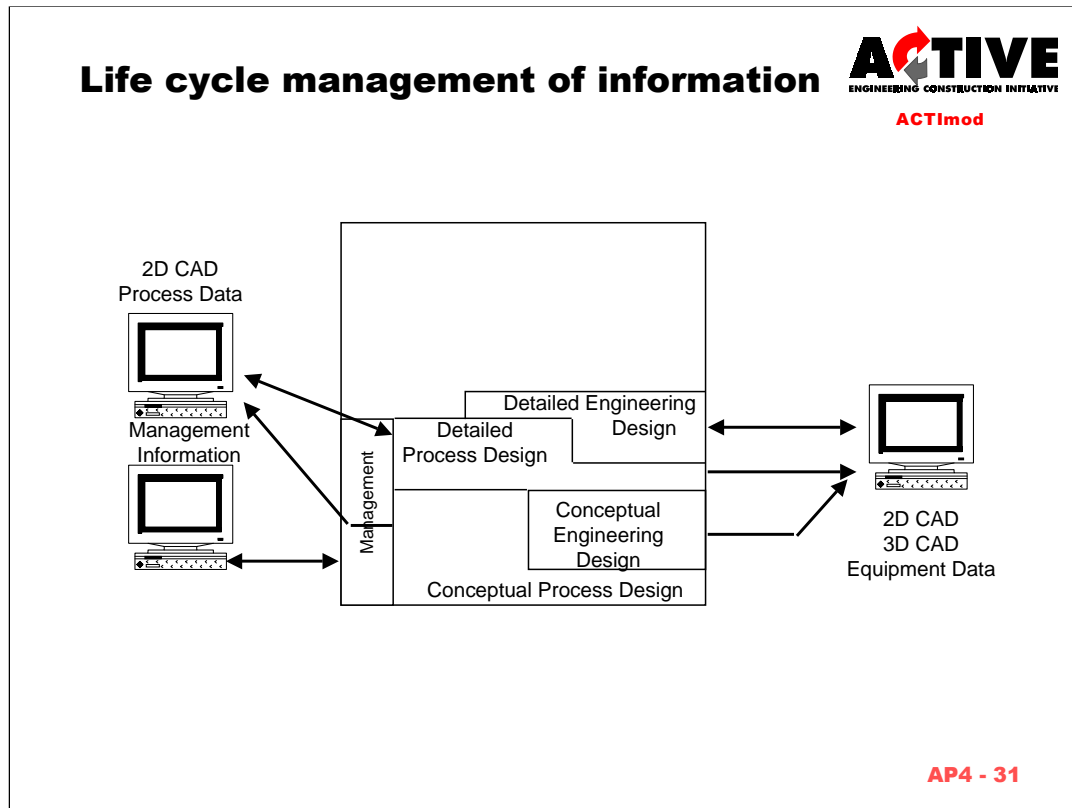


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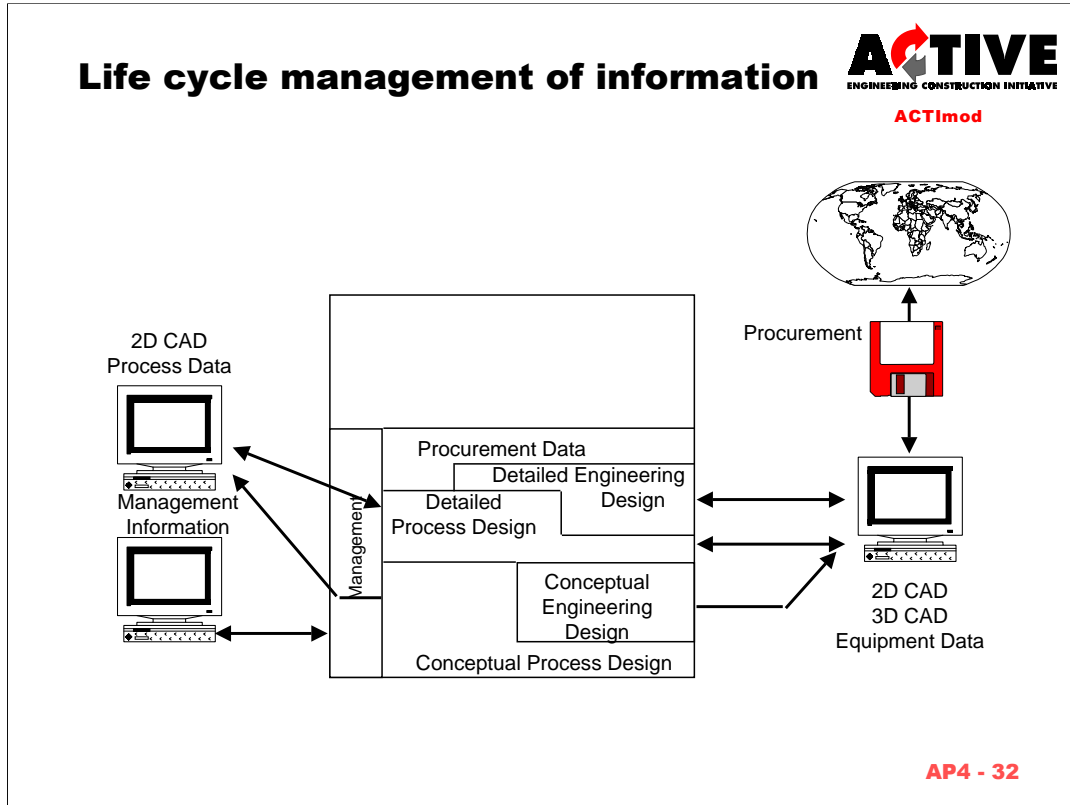


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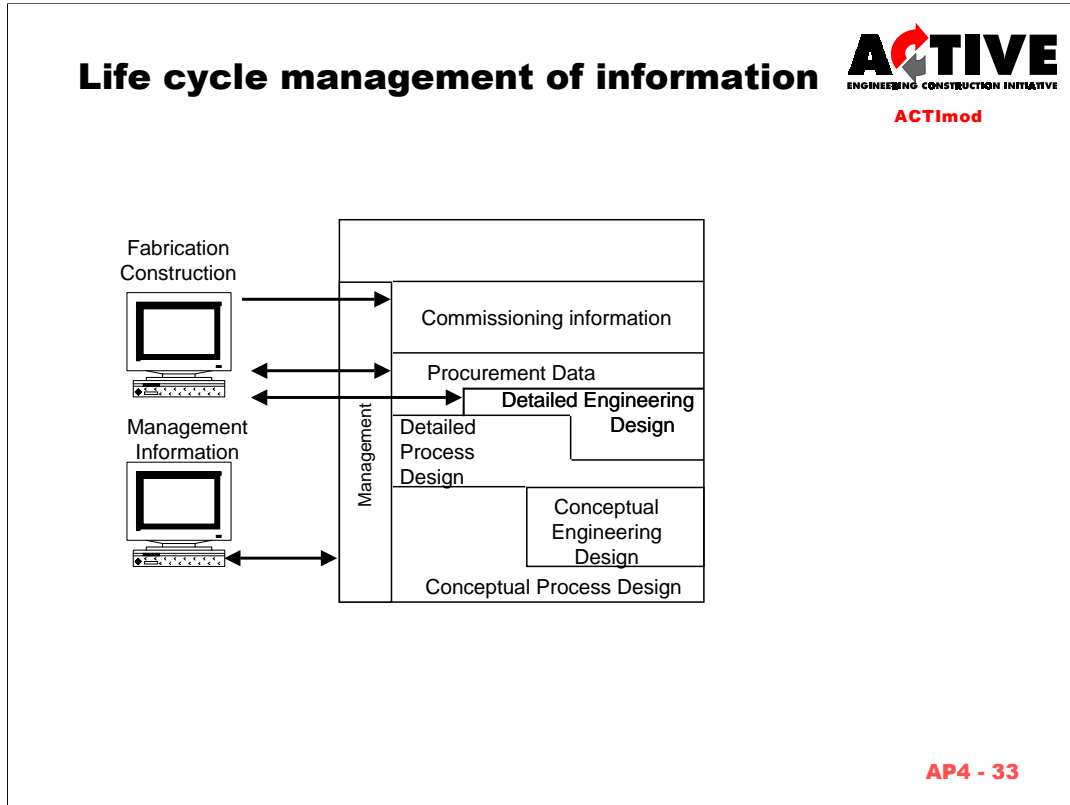




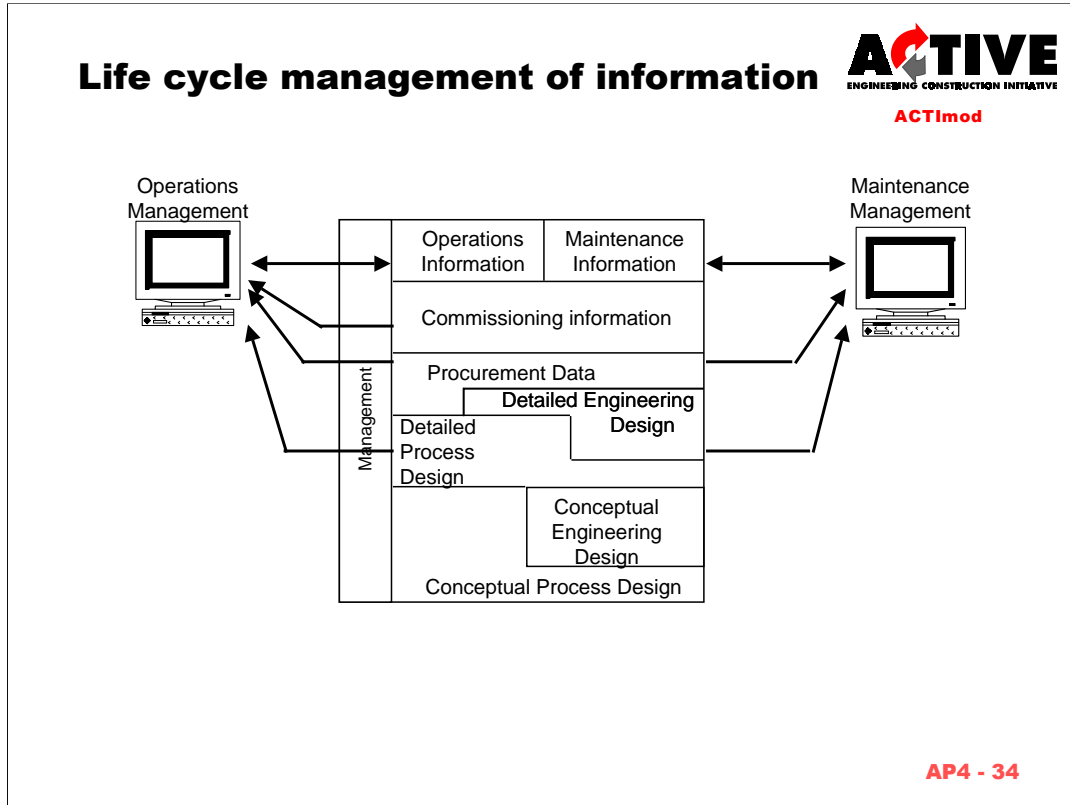
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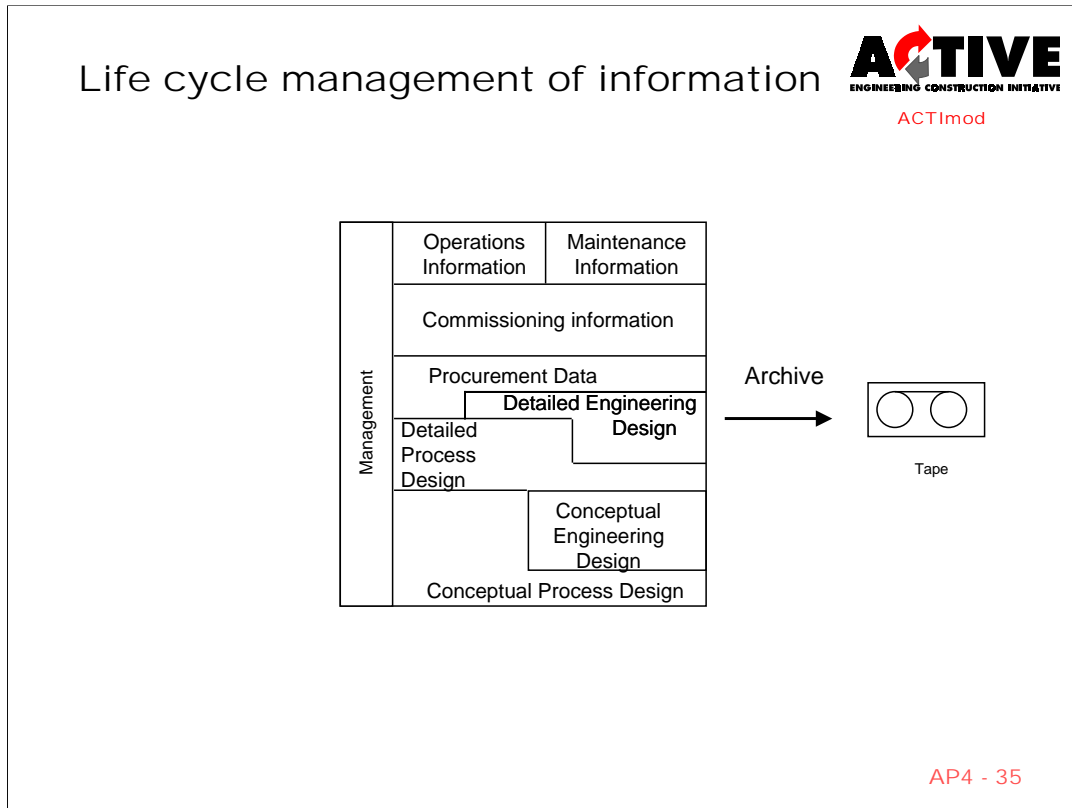
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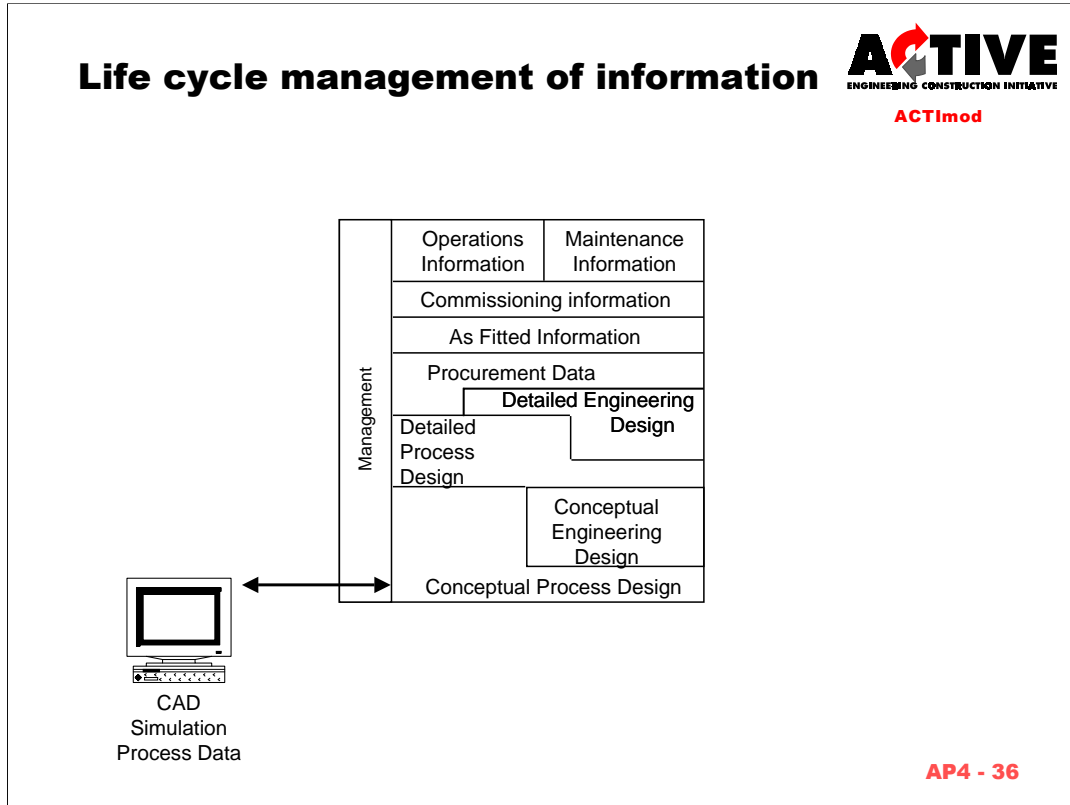
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## **ACTIVE Principle 5: Effective Project Risk Management**

The process of project risk management is a structured way of managing exposure to risk throughout the life of the project and beyond. These risks are not only technical risks but also include commercial and human risks. Uncertainty at the outset of any investment is usually high and hence the adoption of a managed process to identify, understand and analyse the likely risks before they occur will allow for their subsequent mitigation and management throughout the implementation of the project.

Risk assessment considers both the likelihood of events occurring and the possible consequences. If the identified risks are unacceptable, ways of mitigating or reducing those risks can be sought and contingency plans made. In some cases, risks can be eliminated completely while other risks are completely external to the project, presenting little scope for reduction. Since the risk profile will change with time as the project develops, reassessment of risk should continue throughout the life of the project as part of the risk management process.

Within contractual relationships on the project the aim should be for specific risks to be managed by the party best equipped to deal with that risk at least cost. The potential benefits available to each of the parties in a contractual relationship should reflect the degree of risk borne by each party. Proper management of risk in supply chain relationships should encourage and reward effective innovation and performance.

Key elements of a project risk management process should include:

- Establishing at the outset of the project an efficient risk management programme to monitor and manage risks throughout the life of the project
- Ensuring personnel are trained to identify key risk areas as the project proceeds
- Identifying all known risks at an early stage of the project and establishing a risk register describing the nature of the risk, probability of occurrence and impact should it occur, along with methods for its elimination, mitigation or management.
- Having in place a process for monitoring, updating and reviewing the risk register throughout the life of the project
- Within supply chain relationships, identifying and agreeing the risks to be borne by each party balanced against the potential benefits. The risk/benefit balance should be reflected formally in the contracts between the parties

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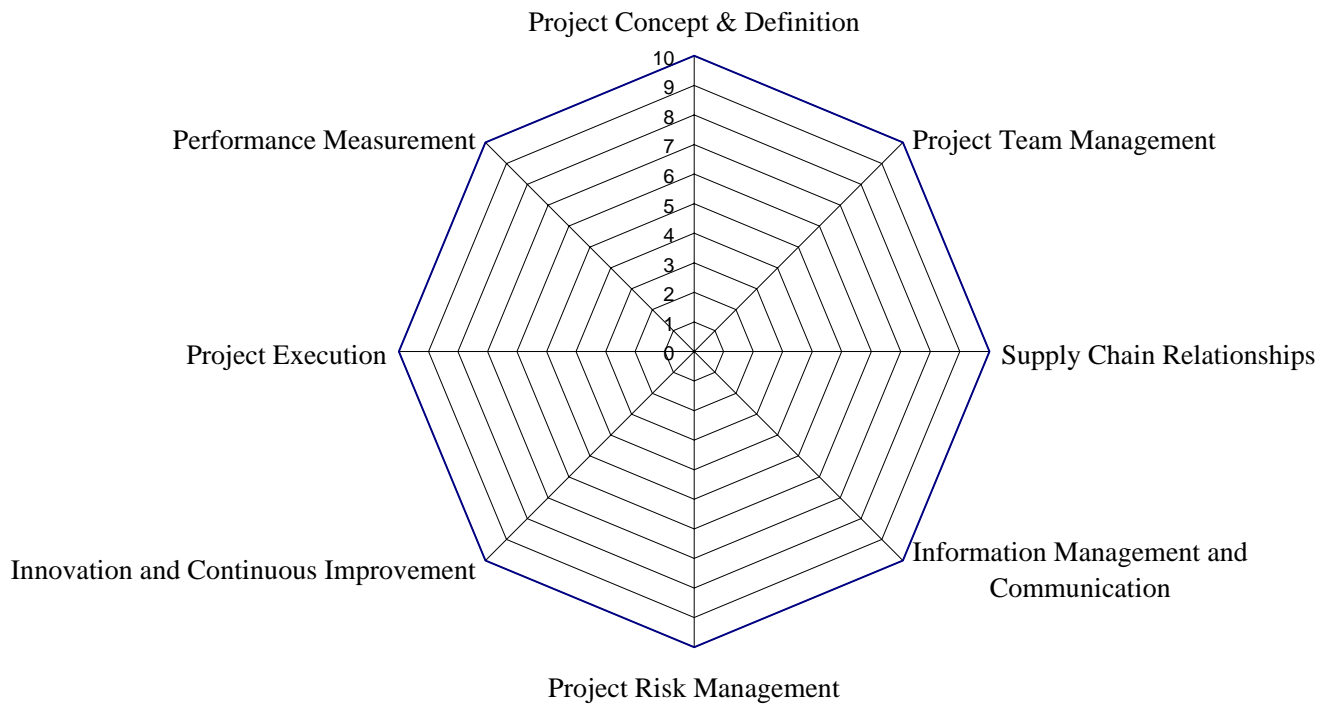
## ACTIVE Index Assessment

### AP5. Project Risk Management

		VEP Ref:	Mark	W't	Score
5/1	Does the company have a risk management process which is routinely applied to all projects?	5.1		4	
5/2	Are appropriate techniques for quantification available and used on projects to analyse risks?	5.1		3	
5/3	Do projects in the company produce risk management action plans with responsibilities assigned for managing risks?	5.1		3	
5/4	Are reviews carried out throughout projects within the company to capture learning on how risks were managed and how risks to future projects might be better managed?	5.1		3	
5/5	Are risk and benefit framework agreements with key vendors in use in-the company?	5.2		2	
5/6	Is it part of the company procurement strategy to explore with potential supply chain partners the potential for risk and benefit framework agreements?	5.2		2	
5/7	Does the company hold regular reviews with partners in risk and benefit framework agreements?	5.2		2	

**Total Score for Section 5:**





## Extracts from BS6079:1996 “Project Management”

### 4.6.3 Risk Management

#### 4.6.3.1 General

All projects, in common with all future work, are risky. A sponsor cannot be absolutely certain that the anticipated benefits from the project will be fully realized however successfully the project has been carried out. The sponsor is the primary risk taker but a project manager also faces risk in the form of the inevitable uncertainty surrounding the project process and unpredictable project environments.

For the project manager, project risk is primarily the likelihood of negative occurrences adversely affecting the project so that its objectives become more difficult or even impossible to achieve. The project manager should therefore take positive steps to identify, assess and ultimately manage all risk inherent in the project, as an integral part of the project management process.

By using a structured risk management process the project manager should ensure that as many risks as possible are identified, thus enabling the following action to be initiated:

- a) categorisation according to the nature of the risk;
- b) assessment of the probability of occurrence and potential impact on the project;
- c) the application of suitable risk response measures including contingency planning;
- d) the sharing, transfer or full acceptance of risks to the project;
- e) taking account of risks in management planning.

Risk management, whether separately identified or not, should continue throughout the project life cycle. It should always be given special emphasis as a key element in project planning. Project planning cannot be realistic unless serious account is taken of what could go wrong and what can be done to increase the chances of success and lessen the prospects of partial or complete failure. Risk management techniques should be used to identify in advance the risk from problems and threats to the project. They then need to be continuously applied as a means of effectively reducing risk to a tolerable level.

#### 1.3.16 risk

A combination of the probability, or frequency, of occurrence of a defined threat or opportunity and the magnitude of the consequences of the occurrence.

#### 1.3.17 risk management

The process whereby decisions are made to accept a known or assessed risk and/or the implementation of actions to reduce the consequences or probability of occurrence.

#### 4.3.6.9 Assessment of risks

The SOW should record the results of qualitative and quantitative risk assessment for the task where appropriate. Qualitative risk assessment should be based on identifying certain events with which risk is associated and then describing the risk. Quantification of each risk should be shown where appropriate and may be stated simply as the best, worst and most likely distribution in terms of cost, timescale and specification. The impact on delivery to specification is a technical statement of risk and needs to be translated into a cost and timescale effect before the project manager can process the information for project management purposes.

The impact of a risk may be graded as follows:

- a) likelihood of occurrence (high/medium/low);
- b) impact on timescales (catastrophic/critical/marginal/negligible);
- c) impact on costs (catastrophic/critical/ marginal/negligible);
- d) impact on delivery (catastrophic/critical/ marginal/negligible).

#### 4.4.6 Assess risks

The risk of success or failure should be assessed continuously by means of cost and time estimates of the interdependent network of tasks that make up the project. The overall project risk factor can be analyzed by simulating project progress, in a series of tests, using random sampling from the best-worst-most likely time and cost distributions for each task and calculating where the critical path most often lies. This will produce cumulative cost and time distributions around the planned project cost and finish date. It can also produce a list of all project tasks ranked in order of the likelihood that each task will be on the critical path. Thus a task with a 95 % chance of being critical should warrant more attention than a task with only a 5 % chance of being critical.

#### 4.4.7 Manage risks

As a result of monitoring and analyzing risks, the project manager should be able to identify those tasks where an alternative course of action is needed to mitigate the risk. Using the project plan the project manager can experiment with various alternative risk avoidance tactics and select those actions that best contain or avoid the risk. The project manager may need to obtain the support of, the project sponsor to follow two parallel courses of action in order to manage an otherwise unavoidable risk.

The project manager needs to gain the support of task owners when deciding a new course of action. The negotiation is likely to follow the steps in the planning process until agreement is reached, when a revised project plan may be issued.

## **Guide to presentational material**

“Highlight key words from AP5 which lead into the framework for this module”.

AP5-1

“Key elements of a project risk management process.”

AP5-2

“The first essential is to ensure everyone is using words / terms with a common understanding so we need some definitions!”

AP5-3

“Risks associated with a project’s potential impact change progressively over time throughout its life.”

AP5-4

“The ability to predict the exposure to, and the impact of, risks is largely a function of the level and detail of information and knowledge available to and within the decision making process.”

AP5-5

“There are many and varied “risk” situations all project dependent. Risks need to be identified and classified as a precursor to any risk management process.”

AP5-6

“The individual components of this process will be covered in turn.”

AP5-7

“In evaluating or assessing risk on a qualitative basis, Probability and Impact can be combined to a single value (P x I)”

AP5-8

“Establish a Risk Register in tabular form containing all current information on each risk - perhaps only dealing with those in high risk category.”

AP5-9

“Agree and incorporate in Register the agreed risk management strategy for each risk, having discounted those which may be avoided and mitigated others.”

AP5-10

“Risk analysis is obviously an essential component in the analysis of Time & Cost. It has been excluded in order to concentrate on the process. “The project risks incorporated within the Register must be monitored regularly throughout the project.”

AP5-11

“The key elements of AP5 are summarised to complete the circle.”

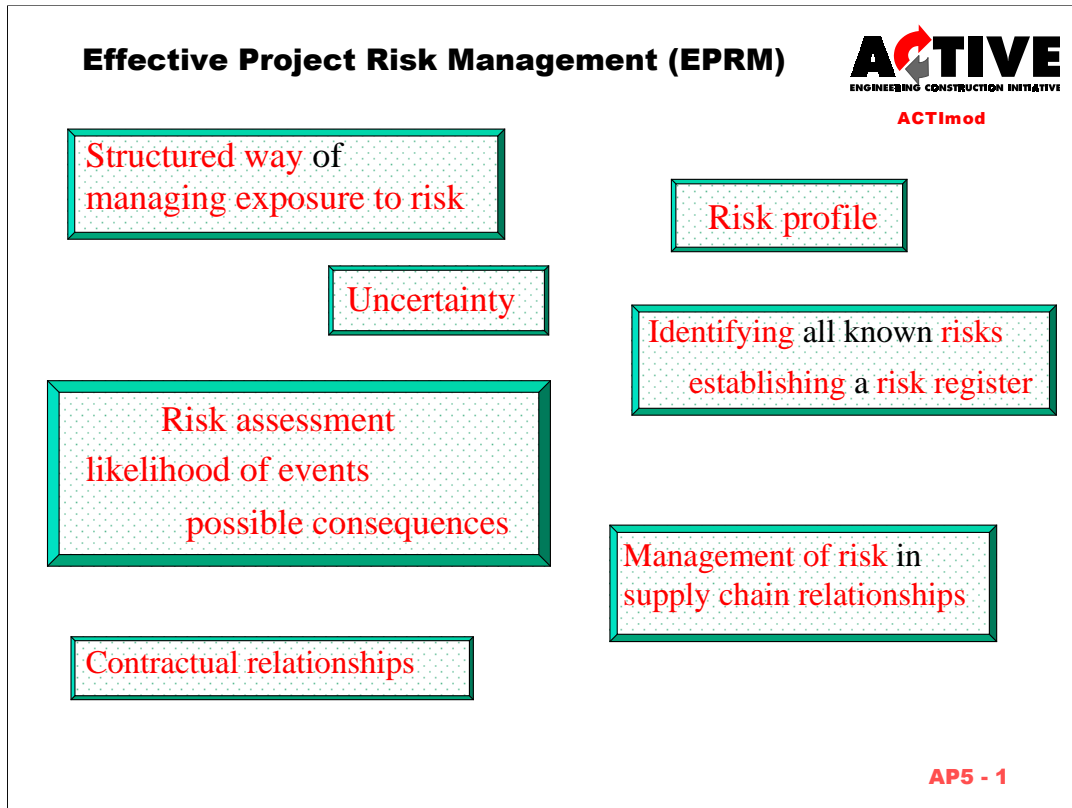
AP5-12

Supplementary presentations AP5-13 to AP5-20

Alternative format for statement of AP5 – AP5-21 to AP5-25

List of relevant VEPs – AP-26

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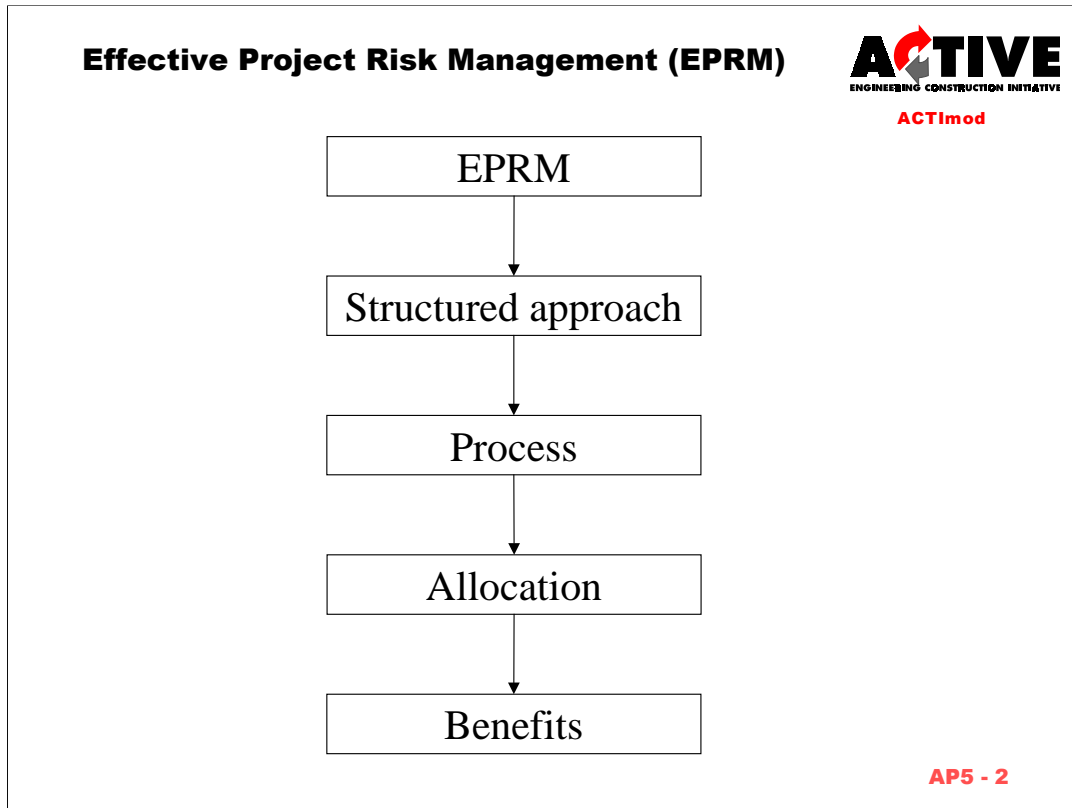


“Highlight key words from AP5 which lead into the framework for this module”

The process of project risk management is a **structured way of managing exposure to risk** throughout the **life of the project and beyond**. These risks are not only **technical risks but also include commercial and human risks**. **Uncertainty** at the outset of any investment is usually high and hence the adoption of a **managed process** to identify, understand and analyse the likely risks before they occur will allow for their subsequent **mitigation and management** throughout the implementation of the project.

**Risk assessment** considers both the **likelihood of events** occurring and the **possible consequences**. If the identified risks are unacceptable, ways of mitigating or reducing those risks can be sought and **contingency plans** made. In some cases, risks can be eliminated completely while other risks are completely external to the project, presenting little scope for reduction. Since the **risk profile** will **change with time** as the project develops, reassessment of risk should continue throughout the life of the project as part of the risk management process.

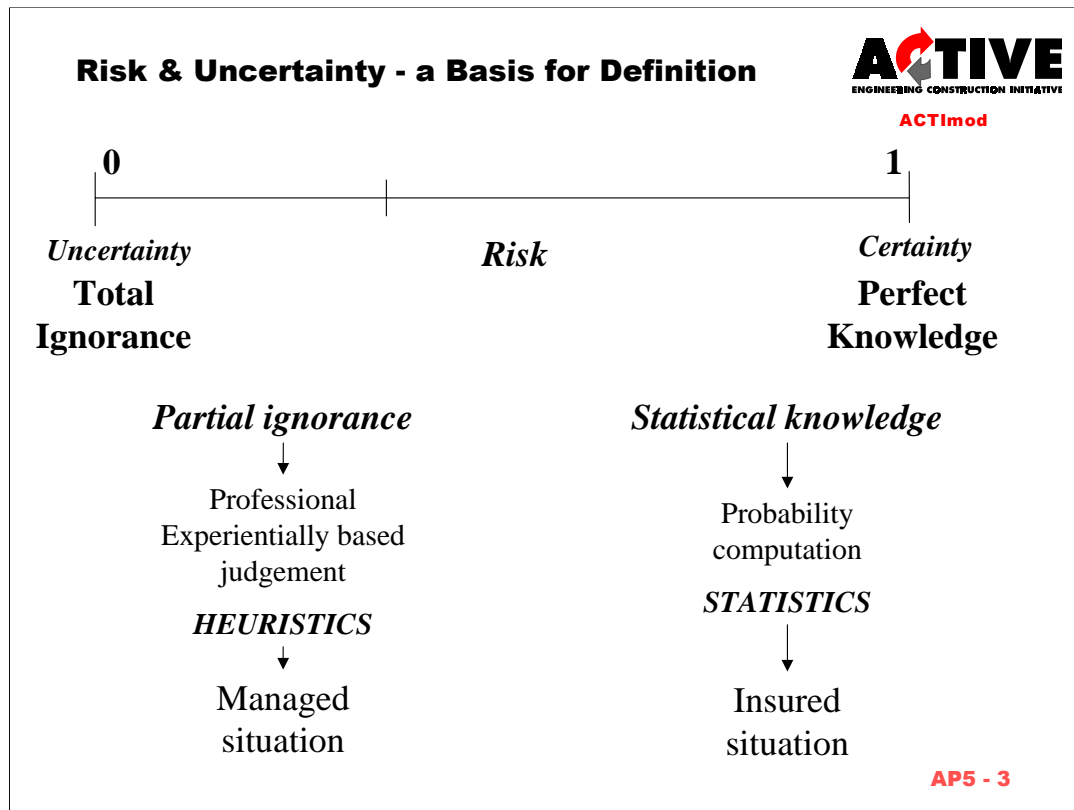
Within **contractual relationships** on the project the aim should be for **specific risks** to be **managed by the party best equipped to deal with that risk** at least cost. The potential benefits available to each of the parties in a contractual relationship should reflect the degree of risk borne by each party. Proper **management of risk in supply chain relationships** should encourage and reward effective innovation and performance.



Key elements of a project risk management process should include:

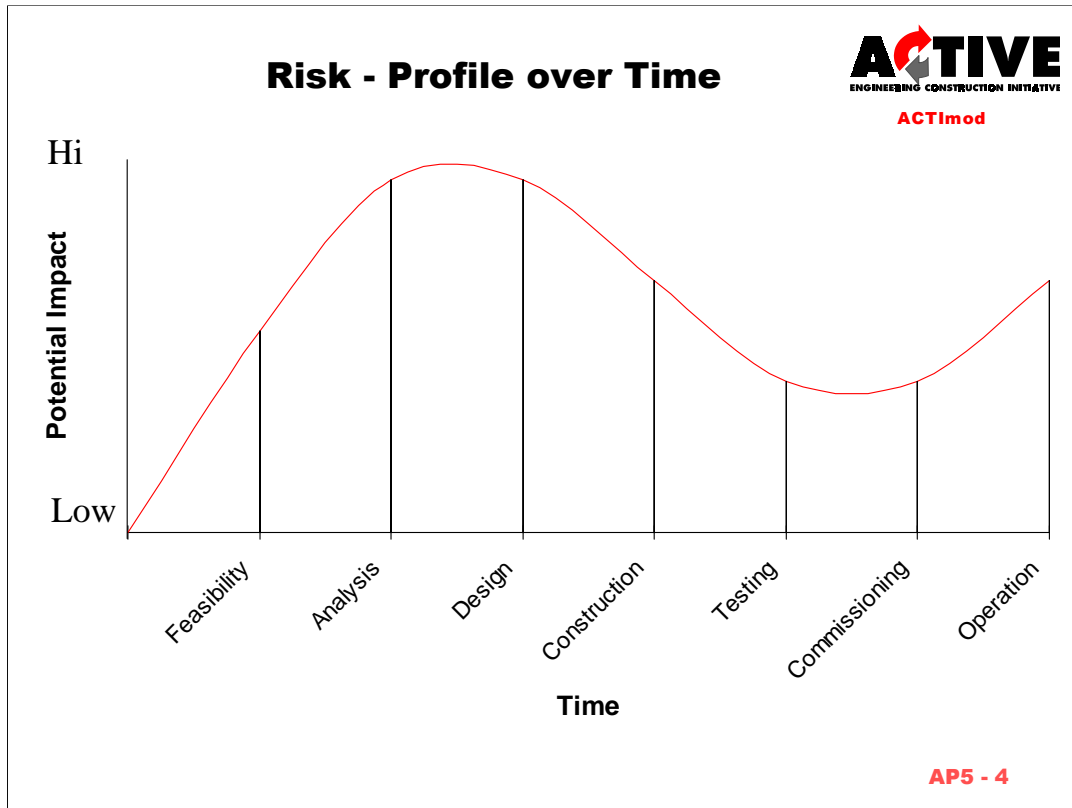
- **Establishing** at the outset of the project an efficient **risk management programme** to monitor and manage risks throughout the life of the project.
- **Ensuring personnel are trained** to identify key risk areas as the project proceeds.
- **Identifying** all known **risks** at an early stage of the project and **establishing a risk register** describing the nature of the risk, probability of occurrence and impact should it occur, along with methods for its elimination, mitigation or management.
- **Having** in place **a process for monitoring, updating and reviewing** the risk register throughout the life of the project.
- Within **supply chain relationships**, **identifying and agreeing the risks to be borne by each party** balanced against the potential benefits. The risk/benefit balance should be reflected formally in the contracts between the parties.





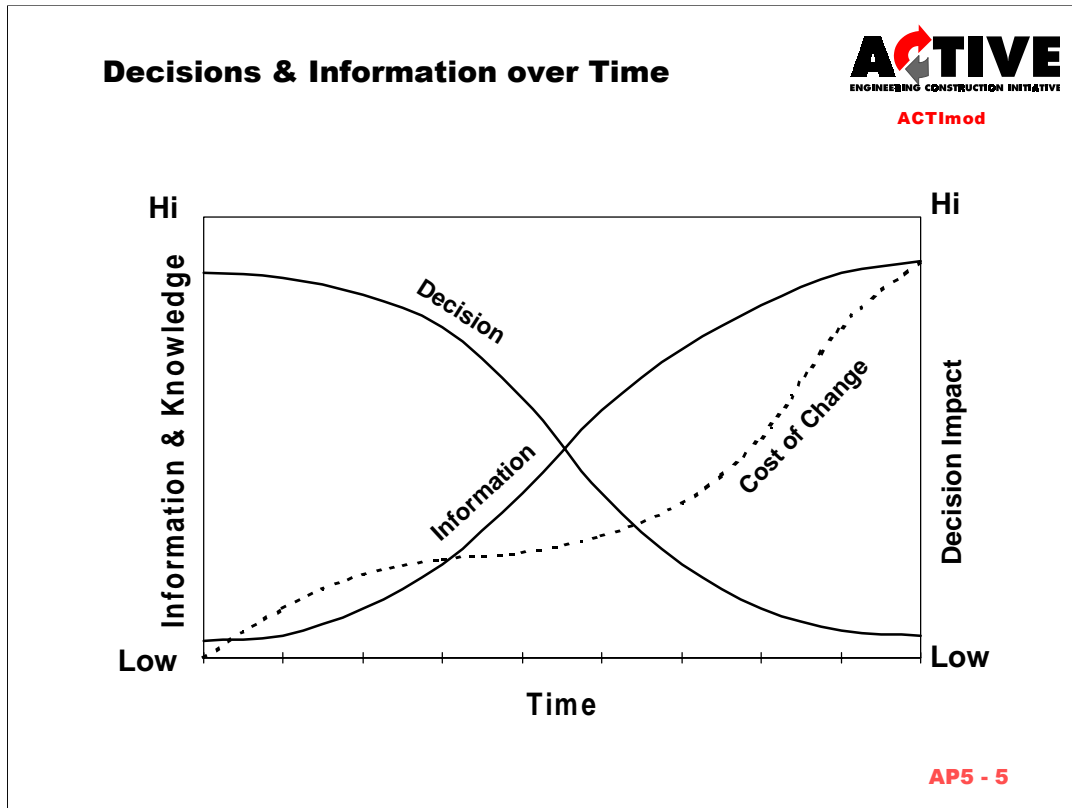
“The first essential is to ensure that everyone is using words / terms with a common understanding so we need some definitions!”

- Universally we use “risk” to mean risk and uncertainty - they are different!.
- Risk & Uncertainty can be explained by using the range of probabilities 0 - 1.
- “Only certainty is death”.
- Near certainty = 99.9999%.
- Dependent upon knowledge, experience, information and data.
- Most decisions are made under conditions of uncertainty.
- Heuristics is an established process for the examination of the “rules of thumb” we use in making decisions.
- An example of “near uncertainty” (0) might be “the probability of rowing around the world non-stop!”



“Risks associated with a project’s potential impact change progressively over time throughout its life.”

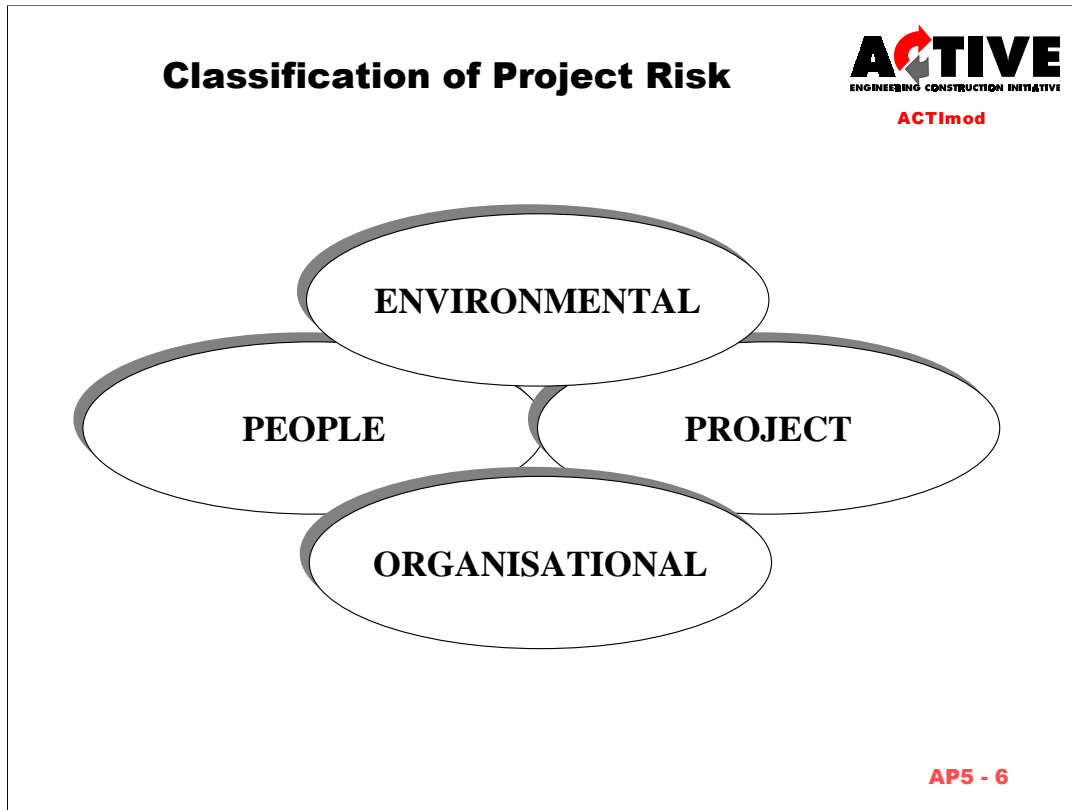
- The potential for risks to impact upon a project increase as they become more numerous and involve more parties in the supply chain.
- The major area for detailed consideration and management is during the design and implementation phase and certainly at the interface between the two.
- On the basis of Pareto (80/20) where 80% of the major decisions are made in the first 20% of the time (from the start of a project) - “early effort must pay great dividends”.



“The ability to predict the exposure to, and the impact of, risks is largely a function of the level and detail of information and knowledge available to and within the decision making process.”

- Information availability increases over time.
- The impact of decision making decreases over time.
- The cost of changing any part of the process increases over time.

“Decisions have the greatest impact at the very time when little or no information is available!”

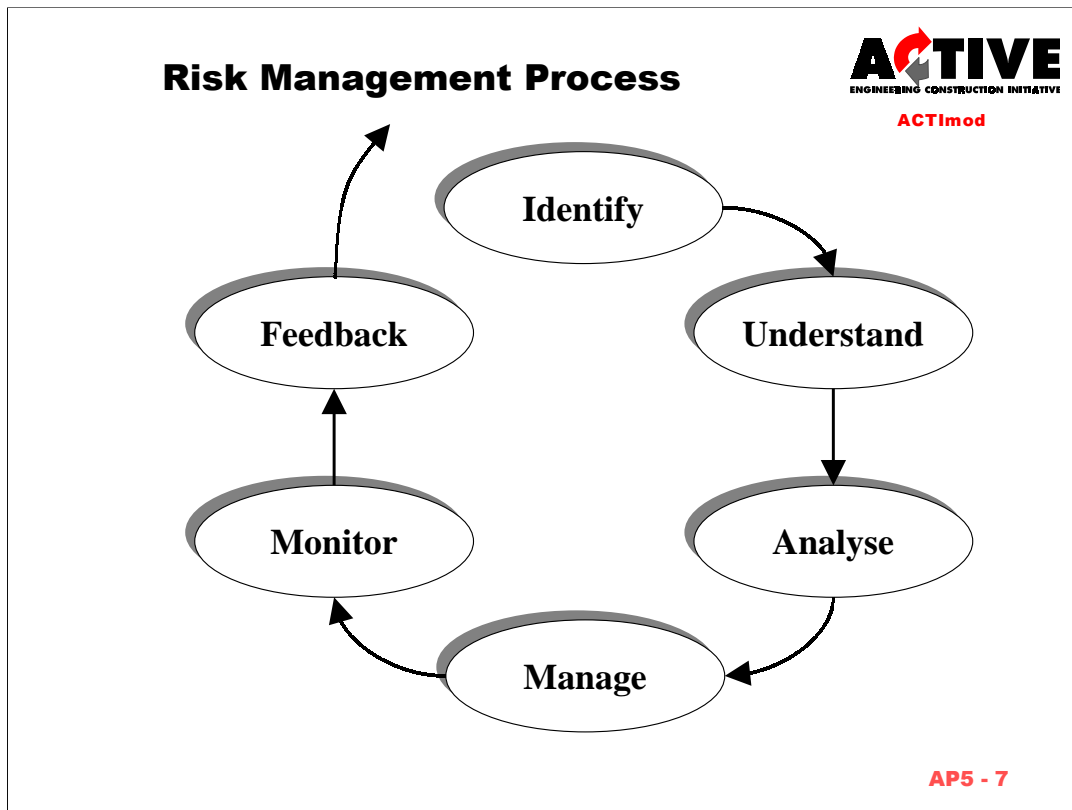


“There are many and varied “risk” situations all project dependent.

Risks need to be identified and classified as a precursor to any risk management process.”

➤The risks associated with a particular project are unique to the sector, the client and the complexity of the project.

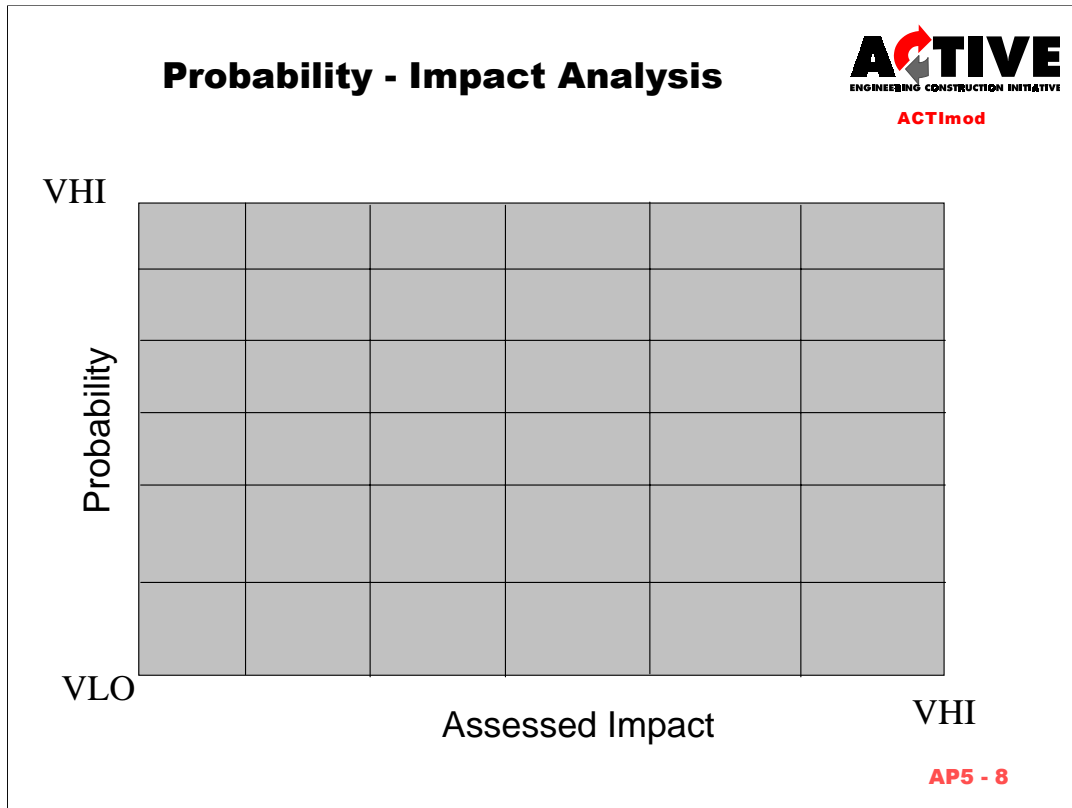
➤The headings lead to detailed examination and assessment of the potential risks which in turn acts as a mapping for the next stages of the risk management process.



“The individual components of this process will be covered in turn.”

➤ In the event that any one of the stages is adjudged to be “unacceptable” or “unsatisfactory”, a looped return to earlier stages of the process is advisable if not essential.

➤ In the event of additional risks being identified or imposed or the project being very adversely affected by a primary or secondary risk impacting upon a project, management and control methods (other ACTIVE Principles) would need to be “in place” to nullify the effect.



“In evaluating or assessing risk on a qualitative basis, Probability and Impact can be combined to a single value ( $P \times I$ )”.

➤ The probability of the occurrence of a risk.

➤ The impact of the risk upon a project.

➤ Agree a Scaling of Probability & Impact.

➤ Enter Scaling into Analysis (X and Y axes):

Probability 0 - 1

Impact Time and Cost 0 - 1

➤ Enter  $P \times I$  in matrix cells.

➤ Establish Low, Medium and High Risk values.

Example: 3 point scales (not recommended but used as illustration).

➤ In the development of the P-I Analysis and the Risk Register, the relationship between the analyses and the individual perceptions and attitudes needs to be appreciated. Reference is made to OHTs 13,14, 15 & 16.

## Risk Register



### Essential Features:

- Risk identifier, code
- Risk type, category
- Risk description
- Risk owner
- Risk assessment, P-I
- Current status, P x I

AP5 - 9

“Establish a Risk Register in tabular form containing all current information on each risk - perhaps only dealing with those in high risk category.”

➤ Risks, or those agreed to be “important” enough by prioritisation should be listed by row.

➤ The other features allocated a column each in the Register table.

## Risk Management

- Avoidance
- Mitigation
  - Probability reduction
  - Impact reduction
- Transfer
  - Insurance > Insurers
  - Contract > Supply chain
- Acceptance
- Contingency planning
  - Contingency reserve

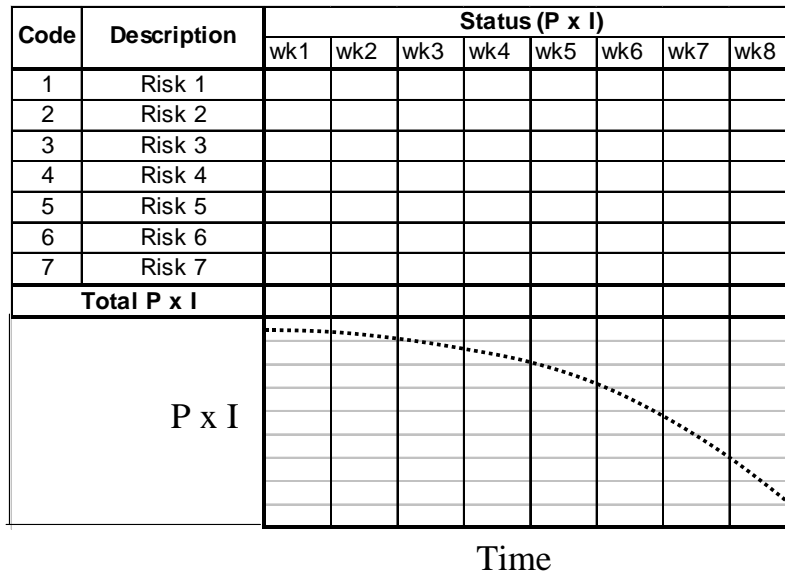
AP5 - 10

➤ Agree and incorporate in Register the agreed risk management strategy for each risk, having discounted those which may be avoided and mitigated others.

➤ Allocate risk ownership either by acceptance and retention or transfer to “the party best equipped to deal with the risk”.



## Risk Monitoring

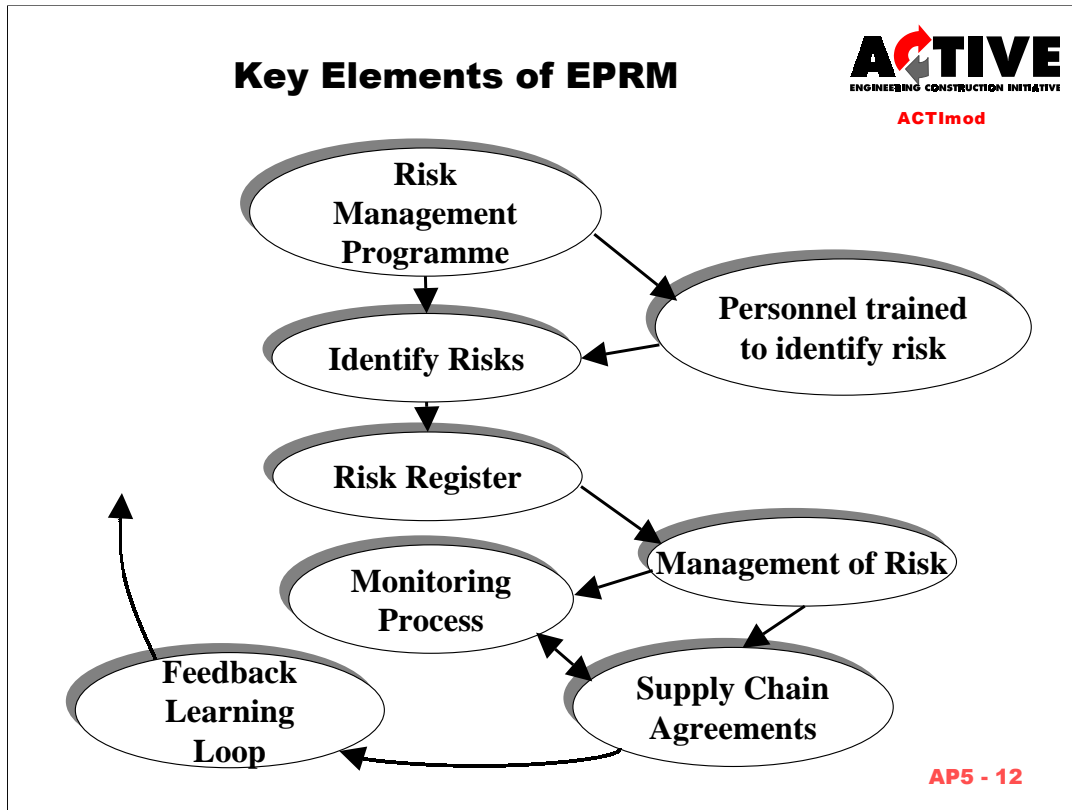


AP5 - 11

“Risk analysis is obviously an essential component in the analysis of Time & Cost. It has been excluded in order to concentrate on the process.”

“The project risks incorporated within the Register must be monitored regularly throughout the project.”

- Risk status in the form of the P-I value recorded periodically.
- Status report drawn from Register.
- Monthly based on review meeting or Milestones in tracking system.
- Total P-I for “chosen” (recorded) risks plotted over time.



“The key elements of AP5 are summarised to complete the circle.”

The outcome of the process should be a successful project with each stakeholder in the supply chain benefiting according to their criteria as a reward for effective innovation and performance.

➤ Ensure that the linkages and feedback loops are fully appreciated and understood.

➤ Ensure that learning process is in place so that the company and future projects benefit.

➤ This overhead is set within the overall set of ACTIVE Principles and leads into a number which deal with information, procurement and execution.

## **Risk Dependencies**



Our response to risk depends upon:

- Impact - what outcome
- Magnitude - How big
- Frequency - How often
- Proximity - How near
- Voluntarily accepted .versus. Imposed
- Benefit .versus. Cost
- Perception
- Attitude

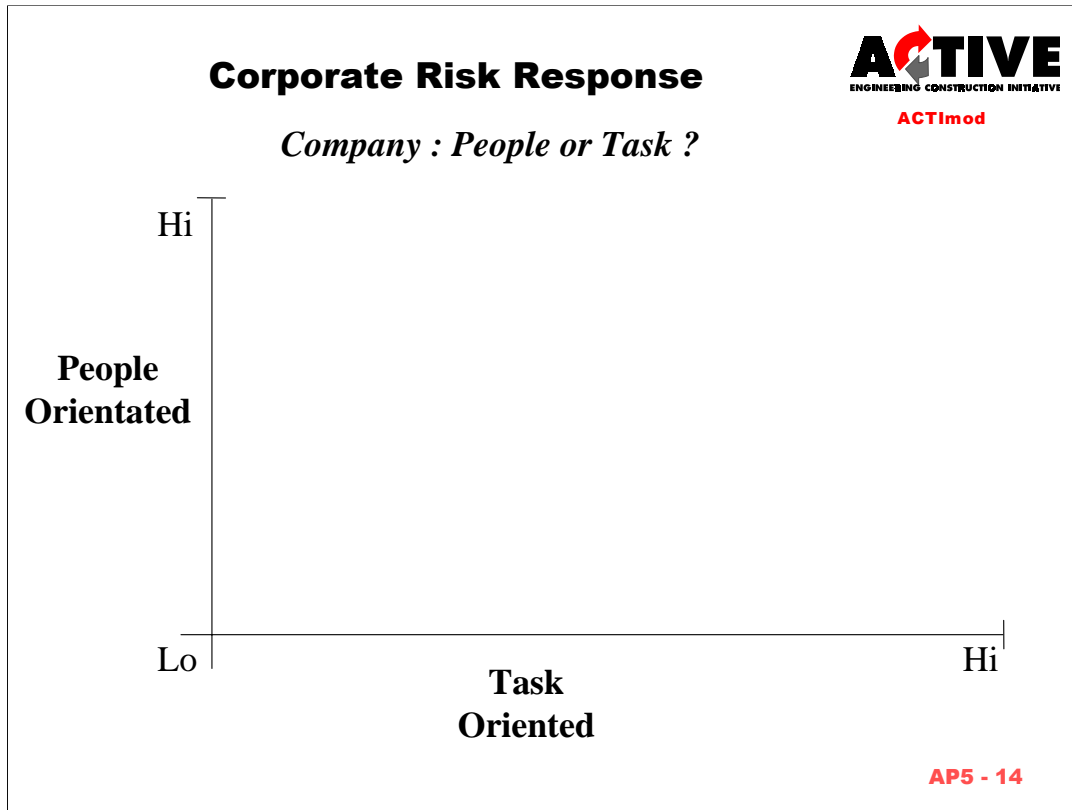
**AP5 - 13**

“Understanding of our response to risk is a complex set of variables.”

➤ How we, as individuals, and companies respond to risk or the possibility of the impact depends upon these many variables.

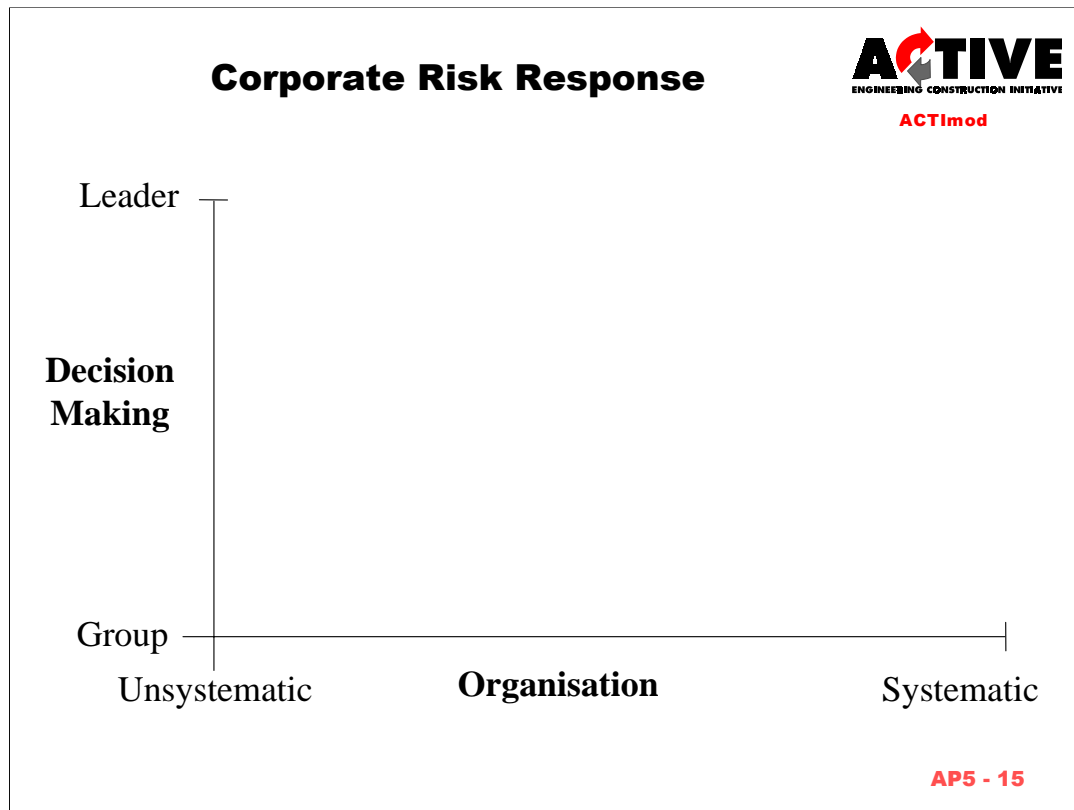
➤ Response is “coloured” by the knowledge and experience we have had of similar situations.

➤ A brief discussion of these variables with some individual anecdotal examples would be helpful in personalising an otherwise seemingly “technical process” (e.g. car accident, asteroid collision with earth!)



“Understanding of a company’s response to risk is, in large part, a function of organisation, leadership and culture.”

- Use this grid to explore where your company stands on these issues.
- Has the company got a low or high regard for the task?
- Does it, as a company, see the task or work as being more or less important than the people?
- This is a personal view to help in the understanding of responses to risk.



“Understanding of a company’s response to risk is, in large part, a function of organisation, leadership and culture.”

- Use this grid to explore where your company stands on these issues.
- Is the decision making within the company made by the leader or is there an involvement with other groups within the company in the process.
- Is the company systematic, a bureaucracy, or is it not organised in a systematic way.
- This is a personal view to help in the understanding of responses to risk.



“Understanding of a company’s response to risk is, in large part, a function of organisation, leadership and culture.”

Use this grid to explore where your company stands on these issues.

- Is the company, as perceived through its culture as seen through its acts, risk seeking or does it avoid risks, is it averse to risk?
- Has the company a high or low level of commitment by way of a strategy and management process, to the management of risk.
- This is a personal view to help in the understanding of responses to risk.

## **Risk - Role of Contracts**



The basis of liability and the transfers of risk to the stakeholders involved in the capital projects:

- Client
- Employer
- Contractor
- Supplier

The range of contractual arrangements and the relationship between client and supplier risk

The place of Bonds, Warranties and Guarantees

**AP5 - 17**

➤ This supplementary is intended to “flag up” the fundamental problem of liability which is inherent in any risk situation and which will lead to the transparent transfer to other parties within the supply chain.

➤ The detail of this area may be developed in a VEP post pilot.

## Risk - Role of Insurance

The management of an insurance programme incorporating residual risks transferred to the insurers

AP5 - 18

“There are many and varied “risk” situations all project dependent

Risks need to be identified and classified as a precursor to any risk management process.”

➤ This Supplementary is a development of OHT17 and is intended to “flag up” the importance of the Insurance option in Risk transfer.

➤ The detail of this area may be developed in a VEP post pilot.



## **Risk - Contingency Management**



The establishment of a contingency reserve based upon a probabilistic analysis of the capital cost of projects and an agreement as the acceptable levels of risk

Managing claims against the contingency reserve

Alternative forms of risk financing

**AP5 - 19**

“There are many and varied “risk” situations all project dependent.

Risks need to be identified and classified as a precursor to any risk management process.”

➤The analysis of risk in the context of the Time/Cost model for a project is a subset of the assessment process.

➤The Contingency fund needs to be established from the start with its basis in an analysis centred on Time scheduling, resourcing and cost analysis. The fund will diminish in size as the project proceeds in detail

➤The detail of this area may be developed in a VEP post pilot.

## Risk - Relevant British Standard

BS 6079:1996 “Project Management” definitions:

4.6.3	Risk Management
4.6.3.1	General
1.3.16	Risk
1.3.17	Risk Management
4.3.6.9	Assessment of risks
4.4.6	Assess risks
4.4.7	Manage risks

AP5 - 20

There are a number of sections in BS6079:1996 which give relevant definitions.

HANDOUT AVAILABLE

**AP5 :- Effective project risk management**



- A structured way of managing exposure to risk throughout the life of the project and beyond.
- Technical risks plus commercial and human risks.
- Handling uncertainty.
- Usually high at the outset of any investment.
- Adoption of a managed process to identify, understand and analyse the likely risks before they occur will allow for their subsequent mitigation and management throughout the implementation of the project.

AP5 - 21

**AP5 :- Effective project risk management**



- Risk assessment:
- Likelihood of events occurring.
- Possible consequences.
- Unacceptable risks.
- Ways of mitigating or reducing those risks can be sought and contingency plans made.
- Risks eliminated completely.
- Other risks are completely external to the project, presenting little scope for reduction.

**AP5 - 22**

**AP5 :- Effective project risk management**



- Risk profile - Changes with time as the project develops.
- Reassessment of risk should continue throughout the life of the project as part of the risk management process.
- Contractual relationships - Specific risks managed by the party best equipped to deal with that risk at least cost.
- The potential benefits available to each of the parties in a contractual relationship should reflect the degree of risk borne by each party. Proper management of risk in supply chain relationships should encourage and reward effective innovation and performance.

**AP5 - 23**

**AP5 :- Effective project risk management**



*Key elements of a project risk management process should include:*

- Establishing at the outset of the project an efficient risk management programme to monitor and manage risks throughout the life of the project
- Ensuring personnel are trained to identify key risk areas as the project proceeds

**AP5 - 24**

**AP5 :- Effective project risk management**



- Identifying all known risks at an early stage of the project and establishing a risk register describing the nature of the risk, probability of occurrence and impact should it occur, along with methods for its elimination, mitigation or management.
- Having in place a process for monitoring, updating and reviewing the risk register throughout the life of the project.
- Within supply chain relationships, identifying and agreeing the risks to be borne by each party balanced against the potential benefits. The risk/benefit balance should be reflected formally in the contracts between the parties.

AP5 - 25

**AP5 :- Effective project risk management**



**Supporting Value Enhancing Practices:**

VEP 5.1 Project Risk Management

VEP 5.2 Risk and Benefit Framework Agreements

AP5 - 26

**VEP 5.1 guidelines:**

- setting objectives
- risk identification
- risk analysis
- risk handling
- risk monitoring

Attachment 5.1-A Checklist for sources of project risk

**VEP 5.2 guidelines:**

- establishing risk and benefit framework agreement principles
- defining the aims of the risk and benefit framework agreements
- implementing risk and benefit framework agreements

Attachment 5.2-A - examples of key success criteria

Attachment 5.2-B - sample framework agreement

Attachment 5.2-C -post project checklist



## **ACTIVE Principle 6: Effective Innovation and Continuous Improvement**

In order to survive in a competitive environment, it is essential that companies innovate. Innovation should not be confined to product technology but should be apparent throughout the business process including the capital project process. While this is desirable it is not easy to achieve since many current practices in the industry discourage innovation. However, for the industry to move forward to greater competitiveness, traditional practices must be challenged and, if found lacking, replaced by more effective solutions.

From the start of a project, teams should consider innovative alternatives to achieve the business and project objectives which challenge existing assumptions. Significant benefit can be achieved by channelling innovation towards improving operational systems, technology and plant performance. The application of innovative solutions to both project engineering and project management can significantly enhance the performance of a capital investment.

This culture of innovation and continuous improvement should also extend throughout the supply chain. Innovation should be encouraged at all stages of the project process from feasibility to completion. New ideas which facilitate the achievement of project objectives should be properly rewarded while confidentiality and intellectual property rights are upheld. This entails changing many traditional contractual arrangements which often discourage or do not properly reward innovation.

The benefits of technical innovation are greater at the conceptual stage of a project before implementation commences. Much can be gained by developing cost effective options during the project definition phase, particularly through the involvement of contractors or suppliers with special expertise, or when a novel design is being proposed. Use of novel or complex technology, such as complex control systems, can sometimes be difficult to manage with increased uncertainty of project outcomes. It is important, therefore, that the application of new technology is properly assessed beforehand in terms of risk, and that development programmes are not allowed to create disruptive changes during project execution.

Innovation and continuous improvement also have a significant part to play during the project execution phase where imaginative solutions can often yield benefits in terms of time, cost or technical effectiveness. Aspects of project implementation such as contracts, site working practices, safety, design methods, project organisation, troubleshooting and communications are areas where there is often scope for innovative ideas to improve methods of achieving the project goals.

All phases of the project life cycle will benefit from exploiting the integrated experience and capability of the project team, while ensuring that efforts are focused on improving, in practical achievable increments, the methods and procedures adopted.

Lessons learned as the execution of the project proceeds should be captured through a process which encourages those involved to feed experiences forward for the benefit of future projects. This process should be ongoing beyond the end of the project to ensure operational experience is also captured. Lessons learned at the early developmental stages of projects are often of most value since it is at this stage that the biggest opportunity for value enhancement exists. It is often beneficial to hold periodic 'peer reviews' with other projects, including projects from other companies, to share learning and experience.

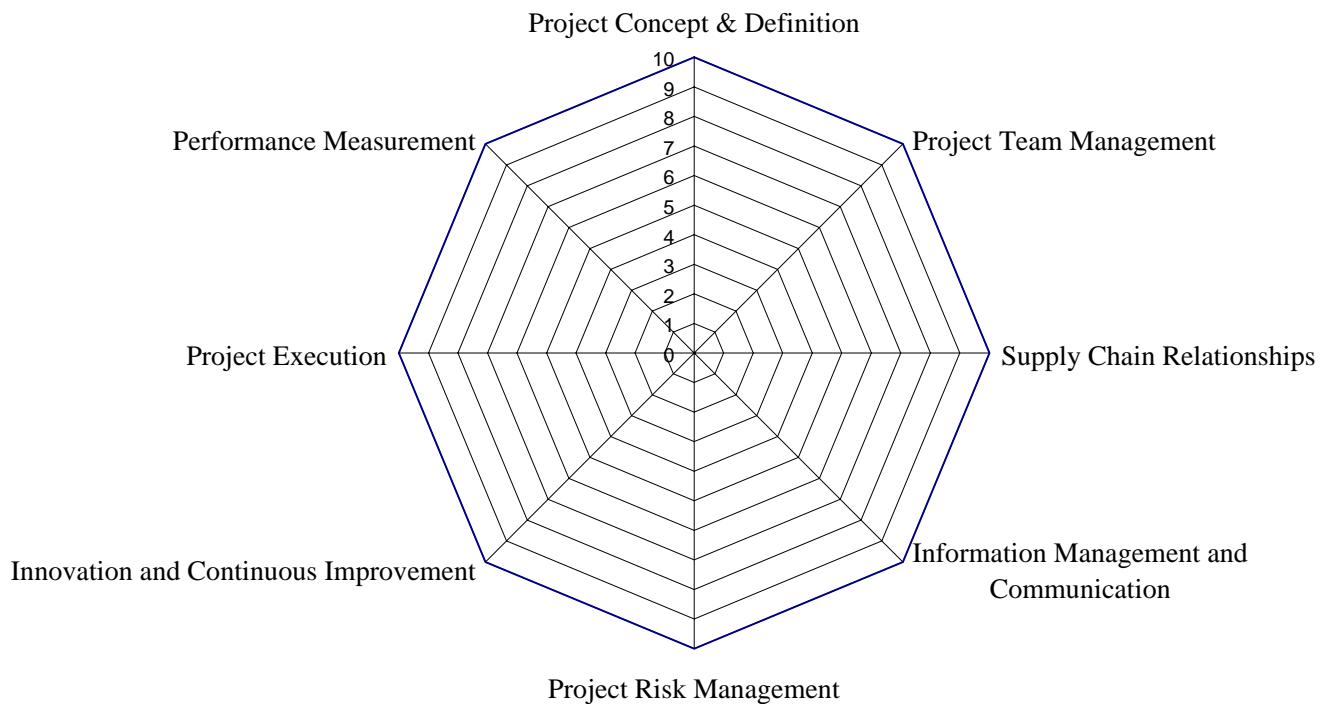
Extract from ACTIVE WORKBOOK Rev. 02. October 1998 **ACTIVE Principles** Section 2 Page 15 of 20

## ACTIVE Index Assessment

### AP6. Innovation and Continuous Improvement

		VEP Ref:	Mark	W't	Score
6/1	Has a corporate strategy for continuous improvement of projects through all their stages been established across the company?	6.1		3	
6/2	Has the company set up integrated work groups to review improvement opportunities and identify specific areas for action?	6.1		2	
6/3	Have individuals in the company been set personal performance targets for improvement in projects?	6.1		2	
6/4	Has the company followed up improvement ideas with methods defined and programmes in place to implement them?	6.1		3	
6/5	Does the company have training programmes in place to generate a challenge culture and promote improvement thinking for all those involved in the project process?	6.1		2	
6/6	Does the company establish benchmarks to ensure improvement targets are challenging?	6.1		2	
6/7	Is the company seeking to address confidentiality and intellectual property issues to encourage innovative ideas from across the supply chain?	6.2		2	
6/8	Does the company have a process in place to test innovative ideas to ensure that they contribute to project objectives at an acceptable level of risk?	6.2		2	
6/9	Is it company policy to encourage supply chain partners where appropriate to challenge and test assumptions and ideas?	6.2		2	
6/10	Have contractual arrangements been established within the company which encourage and reward innovative ideas which enhance achievement of project objectives?	6.2		2	
6/11	For larger projects, does the company seek when possible to locate project teams in multifunctional offices where sharing of ideas can flourish?	6.2		2	
6/12	Are innovative approaches being adopted by the company during the site construction and off-site assembly phase of projects?	6.2		2	
6/13	Does the company have in place an effective process for debriefing project teams at the completion of projects?			3	
6/14	Are lessons learned during projects effectively captured and shared across the Organisation?			3	

**Total Score for Section 6:**



### Guide to presentational material

“Highlight key words from AP6 which lead into the framework for this module”.

AP6-1

“Key elements in developing continuous improvement on projects.”

AP6-2

“Definitions of creativity, innovation and continuous improvement.”

AP6-3

“A supportive environment has to be created in which individuals are encouraged to come up with ideas, share them with colleagues and implement those that merit a go!”

AP6-4

AP6-5

“How successful companies are winning.”

AP6-6

“How successful companies are managing their people.”

AP6-7

“An example of one companies, BAE SYSTEMS, environment for their innovation process.”

AP6-8

AP6-9

“There are a series of activities, which when managed pro-actively, create a self-reinforcing environment for innovation.”

AP6-10

“The Deming cycle for continuous improvement.”

AP6-11

“Lean thinking approach to continuous improvement.”

AP6-12

“Kaizen approach to continuous improvement.”

AP6-13

“Example of a more structured process for managing continuous improvement.”

AP6-14

AP6-15

“A more fluid improvement model based on 5 key activities.”

AP6-16

“Agreeing the basis on which success will be judged can ensure everyone is aligned.”

AP6-17

“Continuous improvement can yield a progressive improvement in performance but it is often an innovative breakthrough which has the most dramatic effect and can change the basis of competition in a market.”

AP6-18

“Typical project stages highlight that the greatest scope for innovation can occur at the conceptual stage when decisions are taken which can constrain subsequent stages.”

AP6-19

“Innovation is a process which can be managed by a stage gate methodology.”

AP6-20

AP6-21

AP6-22

AP6-23

AP6-24

“Techniques for continuous improvement.”

AP6-25

AP6-26

“Creativity approaches and techniques”

AP6-27

“Creating a learning organisation”

AP6-28

AP6-29

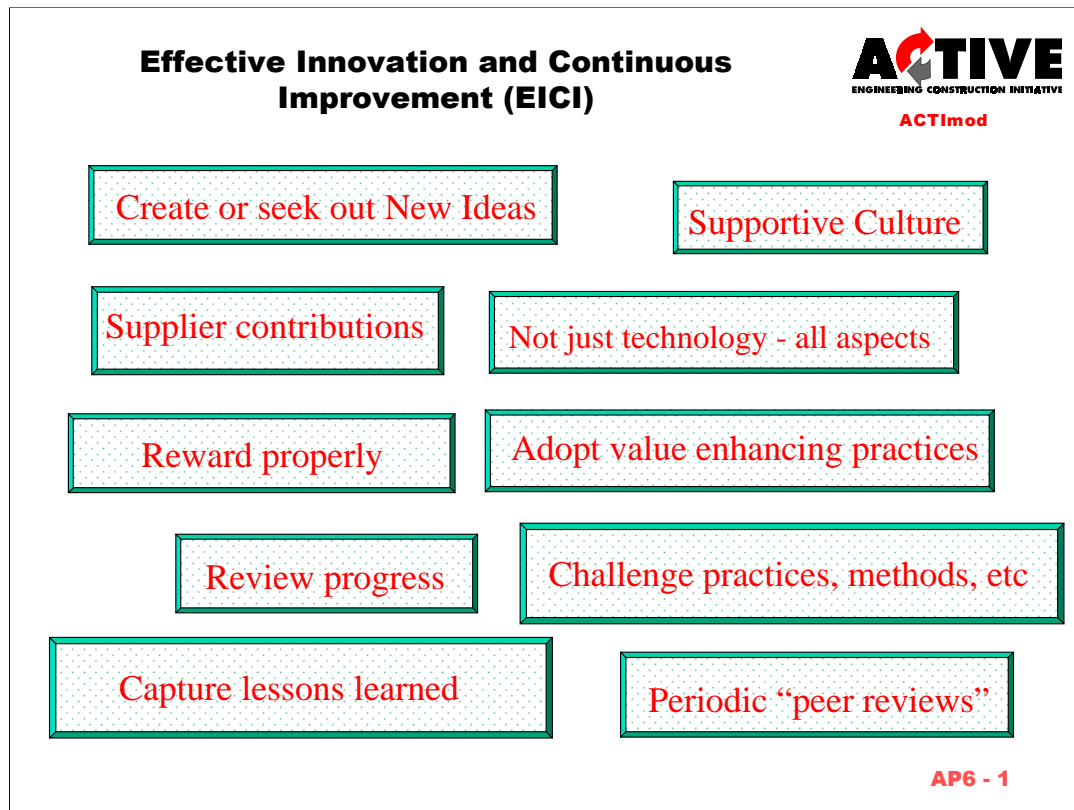
“Supplementary topics”

AP6-30

“Supporting Value Enhancing Practices”

AP6-31

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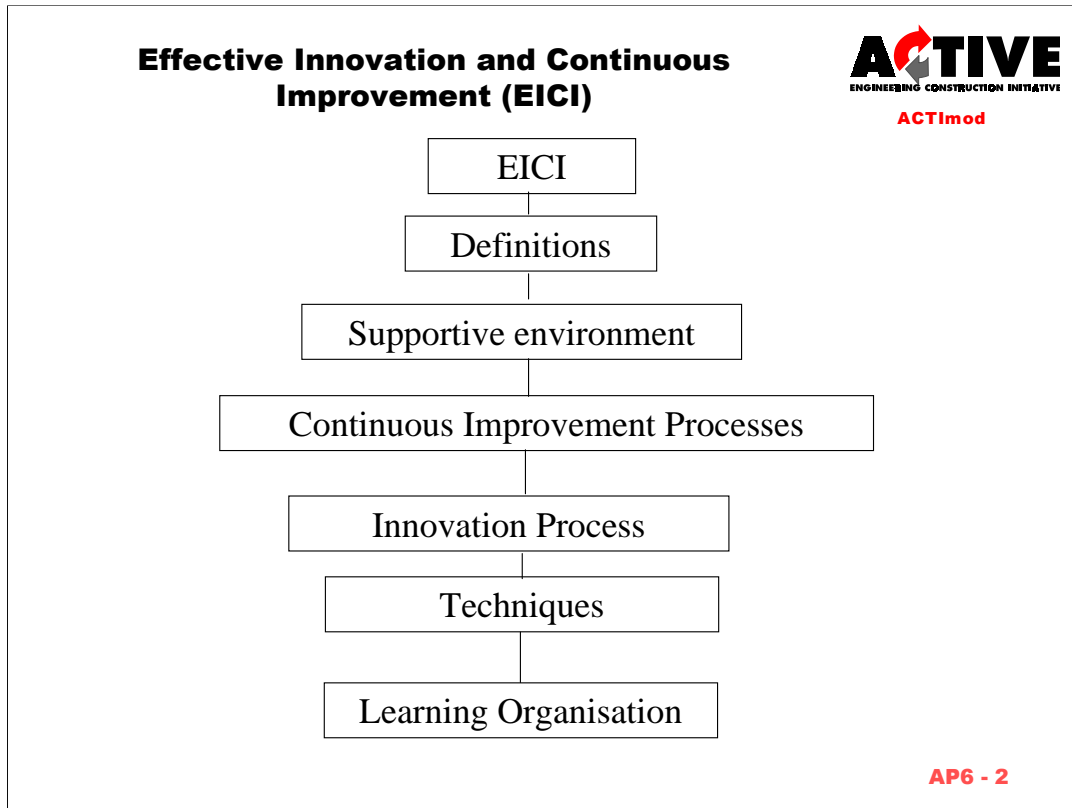
“Highlight key words from AP6 which lead into the framework for this module”

In order to survive in a competitive environment, it is **essential that companies innovate**. Innovation should **not be confined to product technology** but should be apparent throughout the business process including the capital project process. While this is desirable it is not easy to achieve since many current practices in the industry discourage innovation. However, for the industry to move forward to greater competitiveness, **traditional practices** must be **challenged** and, if found lacking, replaced by more effective solutions.

From the **start of a project**, teams should **consider innovative alternatives** to achieve the **business and project objectives** which **challenge existing assumptions**. Significant **benefit** can be achieved by **channelling innovation** towards **improving operational systems, technology and plant performance**. The application of **innovative solutions** to both **project engineering and project management** can significantly **enhance the performance** of a capital investment.

This **culture of innovation and continuous improvement** should also **extend** throughout the **supply chain**. Innovation should be **encouraged** at all stages of the project process from **feasibility to completion**. **New ideas** which facilitate the **achievement of project objectives** should be **properly rewarded** while **confidentiality and intellectual property rights** are **upheld**. This entails **changing many traditional contractual arrangements** which often **discourage** or do **not properly reward innovation**.

The **benefits** of **technical innovation** are **greater** at the **conceptual stage** of a project before implementation commences. Much can be **gained by developing cost effective options** during the **project definition phase**, particularly through the **involvement of contractors or suppliers** with special expertise, or when a novel design is being proposed. Use of novel or complex technology, such as complex control systems, can sometimes be difficult to manage with increased uncertainty of project outcomes. It is important, therefore, that the **application of new technology** is **properly assessed beforehand in terms of risk**, and that **development programmes** are **not allowed to create disruptive changes during project execution**.



“Highlight key words from AP6 which lead into the framework for this module”

Innovation and continuous improvement also have a significant part to play during the project execution phase where imaginative solutions can often yield benefits in terms of time, cost or technical effectiveness. Aspects of project implementation such as contracts, site working practices, safety, design methods, project organisation, troubleshooting and communications are areas where there is often scope for innovative ideas to improve methods of achieving the project goals.

All phases of the project life cycle will benefit from exploiting the integrated experience and capability of the project team, while ensuring that efforts are focused on improving, in practical achievable increments, the methods and procedures adopted.

Lessons learned as the execution of the project proceeds should be captured through a process which encourages those involved to feed experiences forward for the benefit of future projects. This process should be ongoing beyond the end of the project to ensure operational experience is also captured. Lessons learned at the early developmental stages of projects are often of most value since it is at this stage that the biggest opportunity for value enhancement exists. It is often beneficial to hold periodic 'peer reviews' with other projects, including projects from other companies, to share learning and experience.



## Definitions



**Creativity - A concept:**

“Thinking of novel and appropriate ideas”

**Innovation - A process:**

“The successful exploitation of new ideas”

**Continuous improvement:**

“A never-ending journey to seek out and secure better performance”

AP6 - 3

“Key activities in developing continuous improvement on projects” are:

- **Defining and targeting specific areas** where improvement can be achieved
- Setting **specific improvement objectives** and, where possible, **benchmarking the outcome**
- Establishing a **'challenge' culture** on projects where the project team can challenge and test assumptions within the constraints of the project objectives
- Establishing an effective process for **capturing learning** and ensuring it is **applied on future projects**
- **Reviewing options** and selecting methods by which improvements can be achieved, establishing the most practical means to implement these
- **Continually monitoring performance** against agreed objectives and targets
- **Reviewing progress** and ensuring that all positive feedback is channeled towards further performance improvement
- **Holding periodic 'peer reviews'** with other projects to share learning
- **Reviewing operational experience** on the plant one year after start up

### Additional definitions/quotations:

Creativity - “To look where everyone else is looking and see what no-one else can see!”

“Innovation is the central issue in competitiveness.” Michael Porter

“Innovation is the only unique competence in the 1990s.” Tom Peters

## Supportive environment

It has been shown that the distinguishing feature of very successful organisations which sustain innovation and continuous improvement is:

**A supportive environment**

Two major Innovation Unit, DTI studies of successful companies have revealed the key factors:

**“The Winning Report”**

**“Partnerships with People”**

**AP6 - 4**

“A supportive environment has to be created in which individuals are encouraged to come up with ideas, share them with colleagues and implement those that merit a go!”

Details of the studies and other material on innovation is available from the innovation unit web site : [www.innovation.org.uk](http://www.innovation.org.uk)

Daniel Goleman’s analysis of business success identified that emotional intelligence is twice as important cognitive abilities, such as IQ or technical expertise. His book “Working with Emotional Intelligence” shows how to build your own self-awareness and motivation and strengthen your influencing, conflict management and team-building skills, published by Bloomsbury Publishing plc, 1998, ISBN 0-7475-3984-7.

## Supportive environment



### Innovation is supported by:

- Allowing experimentation
- Allowing people freedom to try new ways of working
- Encouraging people to share ideas
- Recognising diversity in colleagues and seeking out others who may offer a new perspective (eg kids, artists)
- Giving people space to learn from each other & a wide variety of external sources
- Quickly coming together to trap and correct problems and failures at an early stage

**ATTITUDE & TRUST ARE EVERYTHING!**

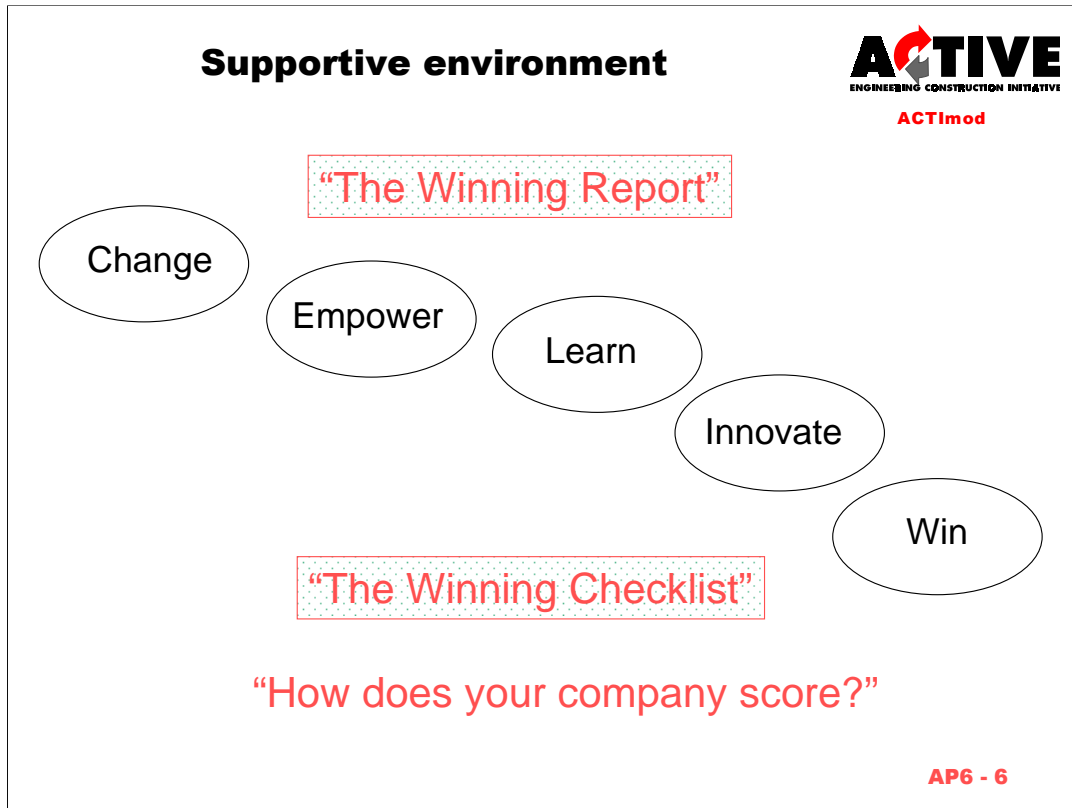
AP6 - 5

Dr Bill Coyne, 3M, the 1996 UK Innovation Lecture speaker has said that:

“the biggest motivator has always been what’s called the pinball award. As with a pinball machine, the prize isn’t money or fame. It’s **the chance to play again**. If you are the kind of person who loves to innovate... who lives to innovate.... nothing is more desirable.”

“Managers and executives need to supply the resources and a certain amount of direction then get out of the way. Hire good people then **trust** them.”

“Be **tolerant** of initiative and of the mistakes that occur because of initiative.”



An additional Microsoft® PowerPoint presentation is available for this module on:

- The Winning Report

An additional Microsoft® Word document is available for:

- The Winning Report Checklist questionnaire

These can be used either as part of the module or in a follow-on activity.

Complete the winning checklist and discuss how close your company’s values and behaviours come to creating such an environment. Is there a gap between the company’s stated values and the reality on the ground? Where are the barriers and who are the blockers?

## Supportive environment



### “Partnerships with People”

- Shared goals
- Shared culture
- Shared learning
- Shared effort
- Shared information

### “The Partnerships with People Self-assessment”

“How does your company score?”

AP6 - 7

An additional Microsoft ® PowerPoint presentation is available for this module on:

- Partnerships with People

An additional Microsoft ® Word document is available for:

- Partnerships with People Self-assessment questionnaire

These can be used either as part of the module or in a follow-on activity.

Complete the self-assessment questionnaire and discuss how close your company’s values and behaviours come to creating such an environment. Is there a gap between the company’s stated values and the reality on the ground? Where are the barriers and who are the blockers?

## Supportive environment

### BAE SYSTEMS Innovation Process Map

	Idea Development	Concept Development	Implementation
Customer Focus	Does our customer influence our ability to generate ideas which are focused on their needs?	Is involvement with customers maintained during development of ideas to ensure they remain in-line with both their needs and those of the business?	Do we ensure that customers are satisfied with implemented ideas and do we learn from the ways in which we bring ideas to fruition?
Organisational Culture	Does our culture encourage us to come up with new ideas?	Is our organisation geared towards pursuit of new ideas and removal of obstacles in the way of their development?	Is our organisation receptive to change and do our people welcome change? Are contributions to successful change assessed and recognised?
Business Process	Do our business processes stimulate creative thinking and does our awareness of business issues influence our ideas?	Are appropriate tools, methods and knowledge applied when developing ideas?	Do we measure change and ensure that changes are aligned with business objectives and are aimed at providing competitive advantage?

In each box, who in-house is doing it well?

AP6 - 8

“An example of one company’s, BAE SYSTEMS, environment for their innovation process.”

## Supportive environment



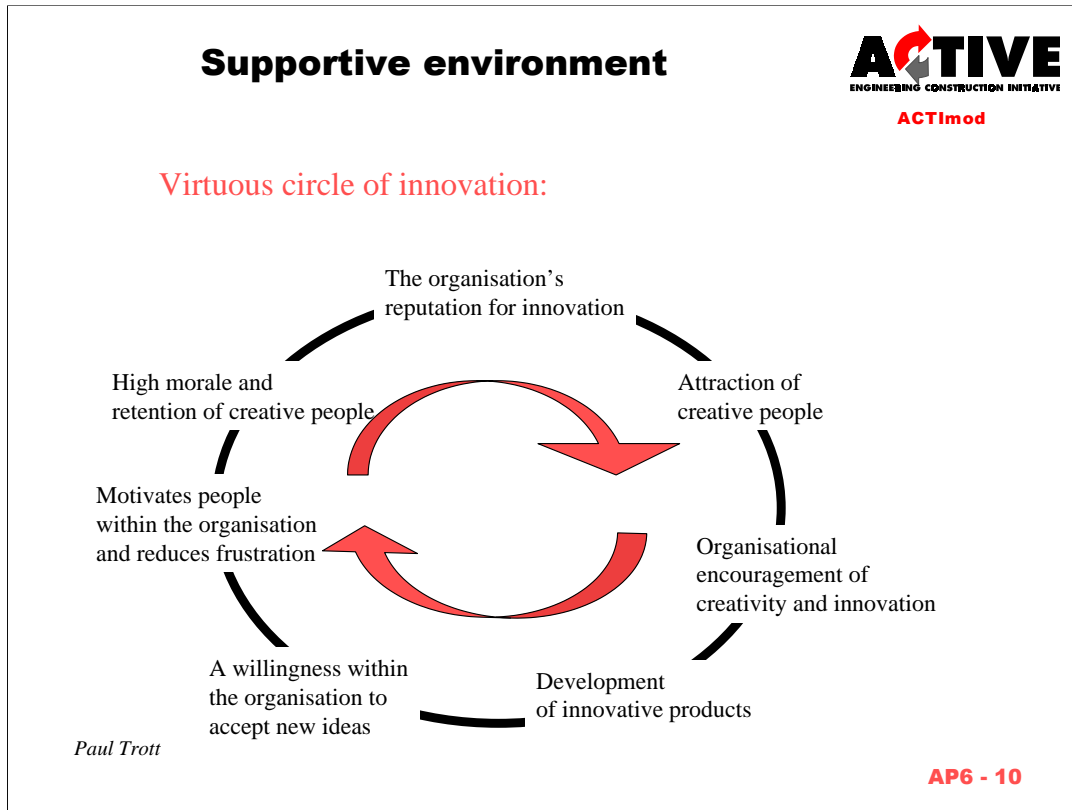
### BAE SYSTEMS Elements of Innovative Practice

	Idea Generation	Idea Development	Implementation
<b>Customer Focus</b>	External customers working on site External customers assisting strategising The customer as a friend Involving the customers' customers		
<b>Organisational Culture</b>	Enthusiasm for subject Fun factor Supportiveness of leadership Sharing of knowledge Operating a core strategy team Self selection of roles and tasks Personal development plans	'Own company' attitude Managing 'Big Bang' change Team review questionnaire procedure Mentoring	
<b>Business Process</b>	Focused induction Incubation of new ideas 'Scarfling', pilots and demonstrator programmes External Benchmarking & info gathering Tools & techniques guidance book Library of learning	Growth through working groups Local improvement projects Peer group review for reward/recognition Project Definition and development agreements Networking The use of secondments	Focused team meetings

In each box, what practices would we add?

AP6 - 9

“An example of one company's, BAE SYSTEMS, environment for their innovation process.”



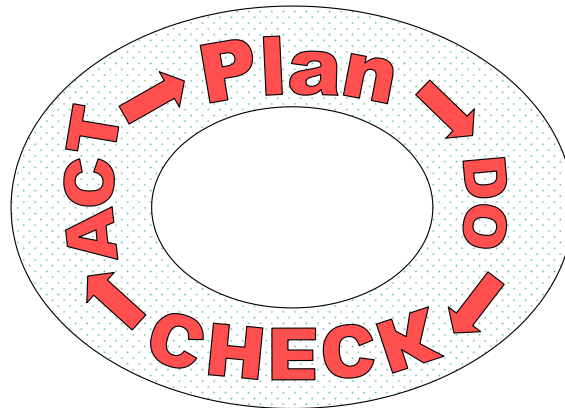
“There are a series of activities, which when managed pro-actively, create a self-reinforcing environment for innovation.”



## Continuous Improvement Processes



The classic continuous improvement process - Deming cycle



AP6 - 11

W Edwards Deming is the “father” of the continuous improvement movement following his experience in Japan, where he helped Japanese companies deal with their desire to dramatically improve the quality of their products in the 1950s.

The foundation of continuous improvement is quality. It seeks to enhance operational efficiency and productivity. It has had dramatic effects in industries such as automotive and electronics. However, it is now a necessary but not sufficient factor in competitiveness. Michael Porter has pointed out that true competitive advantage comes not from operational efficiency but from a unique combination of activities which differentiate the offering from that of competitors. This should be the goal of innovation.

**Plan:** What’s the issue/problem? If a solution can be found, what are the potential gains? What is/are the root cause(s)? How can it be solved?

**Do:** Make the necessary change.

**Check:** What happened as a result of the change?

**Act:** Learn from the experience, celebrate and seek out the next improvement challenge.

A useful pocket guide:

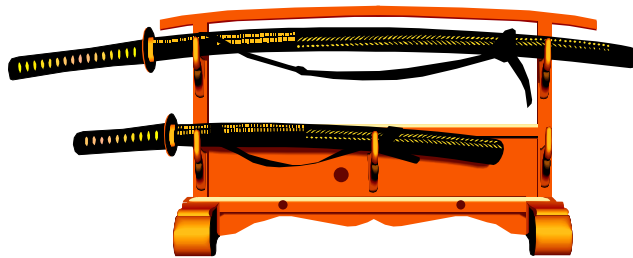
“The Memory Jogger™ II” Michael Brassard & Diane Ritter

IFS international Ltd Tel: 01234 853605 Fax: 01234 854499

## Continuous Improvement Processes

### Lean Thinking:

"Muda!"



AP6 - 12

Does anyone know the meaning of “Muda”? It’s the Japanese word for “waste”. Any human activity which uses resources but creates no value.

**Lean Thinking** has been pioneered by James Womack and Daniel Jones, published by Simon & Schuster, 1996, ISBN 0-684-81035-2

The central planks of Lean Thinking are:

**Value** - defined by the customer in terms of the whole product.

**The Value Stream** - identifying the *entire* value stream of all actions needed to bring a specific product into the hands of the customer.

**Flow** - making the remaining value creating steps flow.

**Pull** - customers pull the product from you when needed.

**Perfection** - brings transparency.

## Continuous Improvement Processes



### Kaizen:

"Kai" – change

"Zen" – good (for the better)

Kaizen means each individual looking  
for easier, cheaper, simpler  
way of doing their work

AP6 - 13

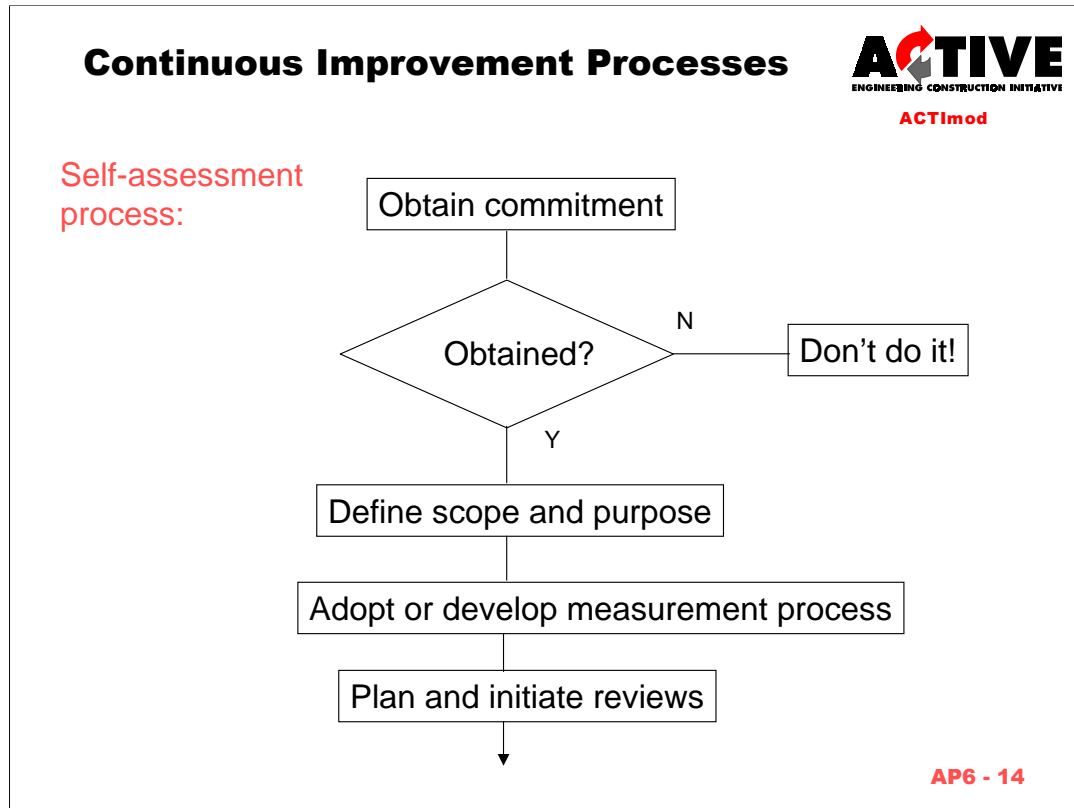
**Kaizen** - Simply getting people to play an active part in working smarter not harder!

"We pay people to come to work for their "hands" - we get their brains for free!"

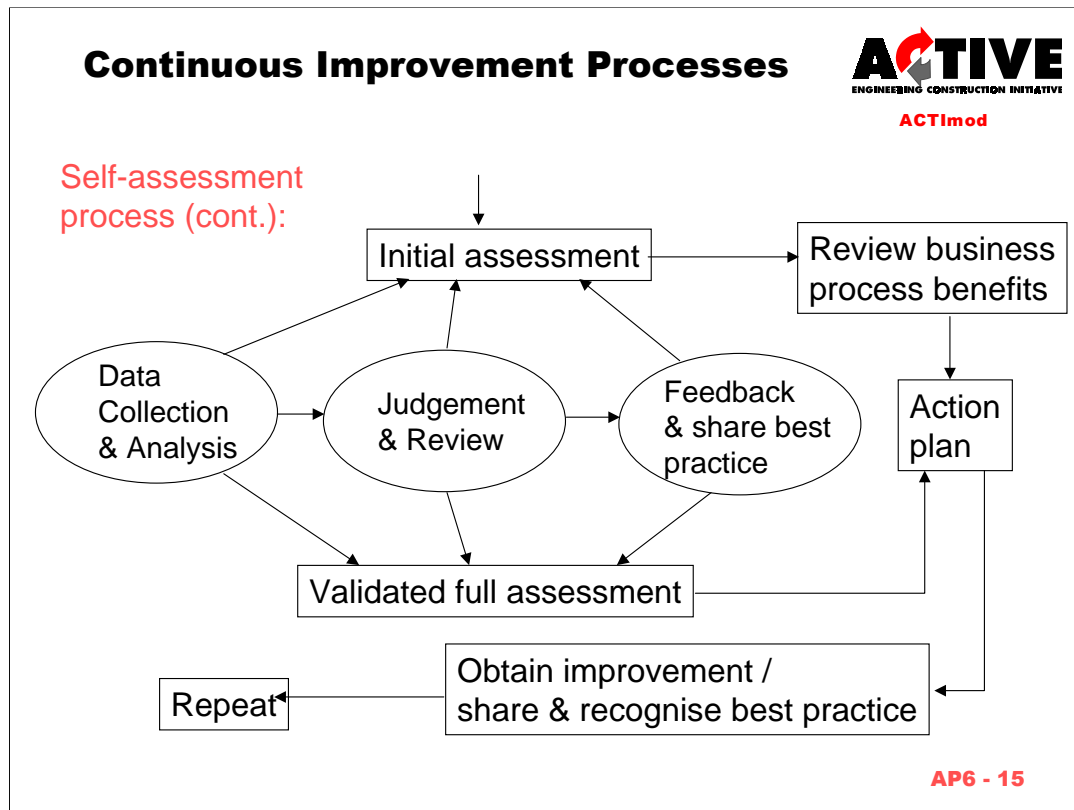
In many organisations, the pressures of "getting on with the job" can make even highly knowledgeable /skilled individuals switch to "automatic".

Kaizen relies on the realisation that literally "everyone" in an organisation can use their creativity and enthusiasm to make an improvement, however, small. It is the power of summing up all these small improvements which can bring about huge gains in productivity and competitiveness. In the vast majority of cases, Kaizen is about low cost, quick to implement options rather than costly new equipment or complex solutions.

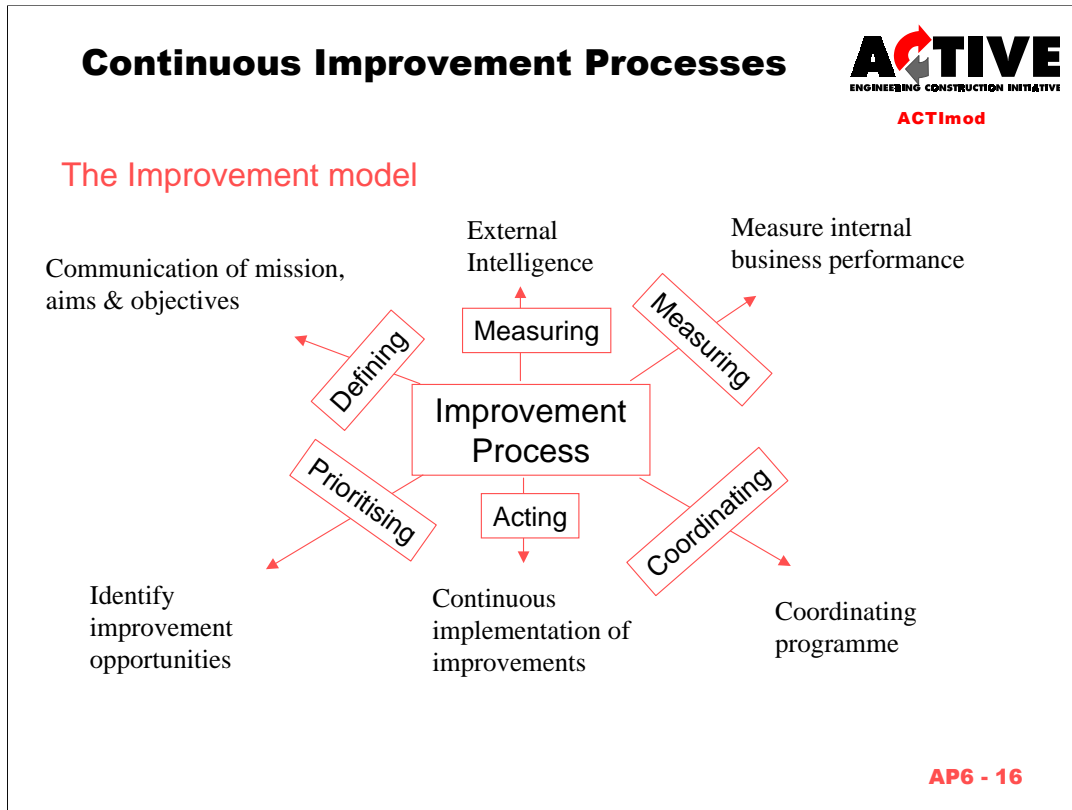
One of the best places to start is to focus on "time management". How do you spend your time? Why? If you did things differently, how could you save 30 minutes a day? Then use this "free" time for more Kaizen!



“Example of a more structured process for managing continuous improvement.”



“Example of a more structured process for managing continuous improvement.”



“A more fluid improvement model based on 5 key activities.”

## Continuous Improvement Processes



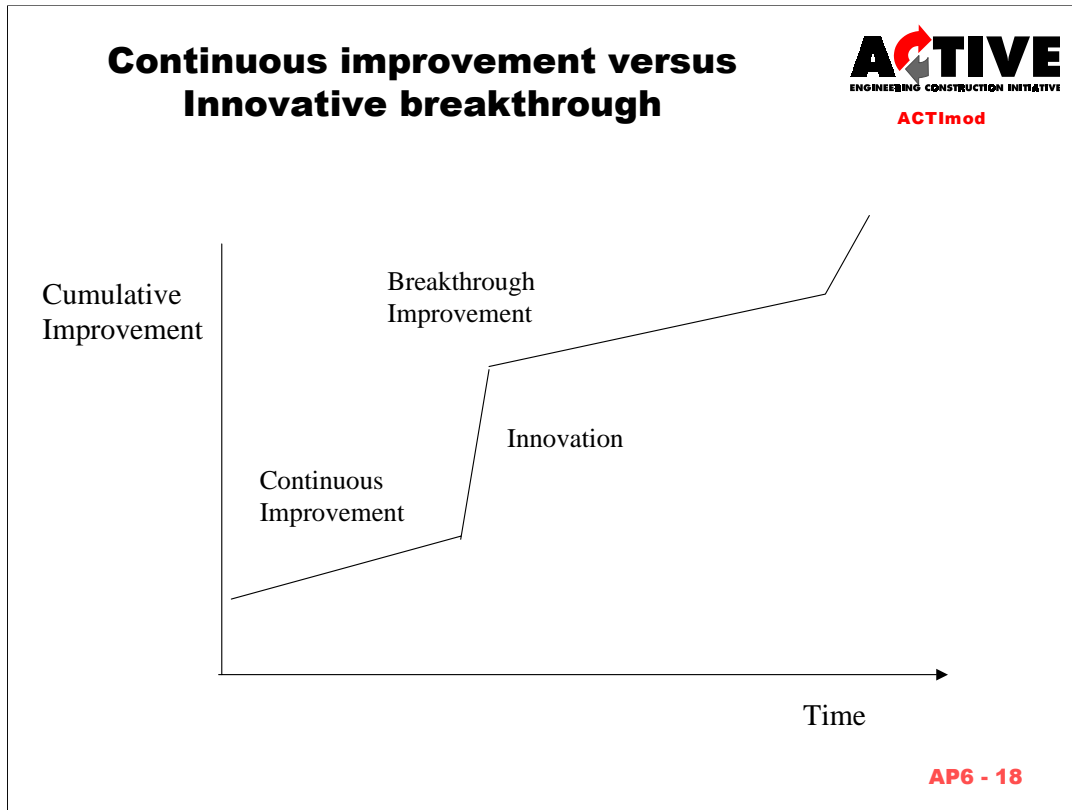
### Key factors of Success

- Internal and external customer relationships
- Never-ending improvement
- Control of process
- Preventative management
  - Fitting customer needs to employees
  - Example “ *Rearranged Bank employees’ lunch hours to ensure service maintained during peak demand.*”
  - Invest in tools and techniques to “do” the job effectively.

*What would you and your company regard as “successful”?*

**AP6 - 17**

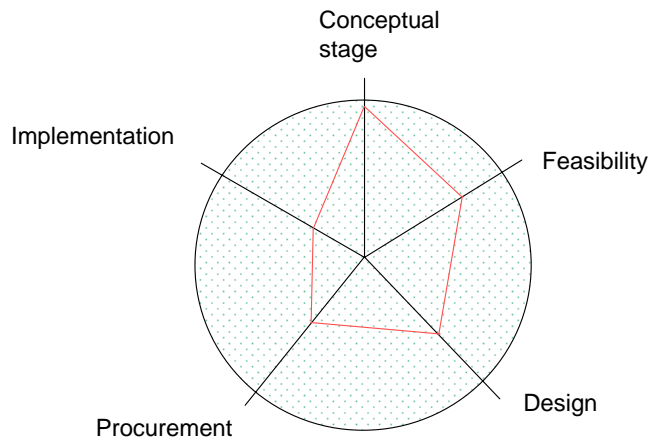
“Agreeing the basis on which success will be judged can ensure everyone is aligned.”



“Continuous improvement can yield a progressive improvement in performance but it is often an innovative breakthrough which has the most dramatic effect and can change the basis of competition in a market.”



## Scope for innovation in projects



*Where are the opportunities within a project?*

AP6 - 19

“Typical project stages highlight that the greatest scope for innovation can occur at the conceptual stage when decisions are taken which can constrain subsequent stages.”

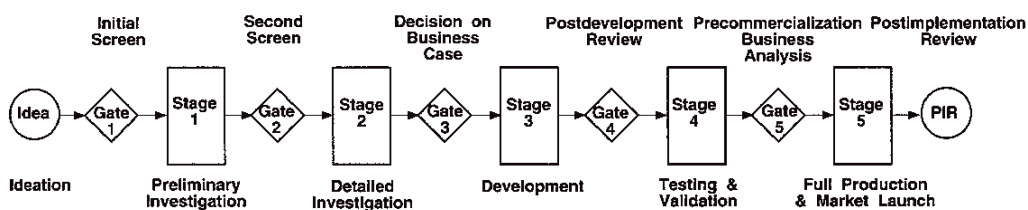
Profile only included to prompt discussion.

## An innovation process - from idea > implementation

Originally developed by Bob Cooper, McMaster University, Canada for new products.

“The Stage Gate process” can be adapted for all innovations.

It is now the most widely used innovation project management methodology in the world.



AP6 - 20

“Innovation is a process which can be managed by a stage gate methodology.”

Bob Cooper undertook a major study during the 1970s and 1980s of some 2000 new products to look at why so many innovations fail! The result of his work was the Stage Gate process.

For further details see:

“Winning at new products” Robert C Cooper, 1993, published by Addison-Wesley, ISBN 0-201-56381-9

## **An innovation process - from idea > implementation**



### Gate Decisions in stages of innovation process

At the end of each stage a decision can be made either to:

- |                |                                       |
|----------------|---------------------------------------|
| <b>GO</b>      | - for it!                             |
| <b>STOP</b>    | - “Kill the idea”                     |
| <b>RECYCLE</b> | - Market and Material changes         |
| <b>HOLD</b>    | - Until market conditions are right   |
|                | - Until plant capacity is appropriate |

**AP6 - 21**

“Innovation is a process which can be managed by a stage gate methodology.”

**An innovation process -  
from idea > implementation**



Gate Decisions in stages of innovation process

Key Players:

**Enabler:** gets things done

**Gatekeeper:** arbiter, keeps to the “rules of the game”

**Devil’s Advocate:** “what if” questions

**Champion:** Inventor, instigator

AP6 - 22

“Innovation is a process which can be managed by a stage gate methodology.”

**An innovation process -  
from idea > implementation**



Gate Decisions in stages of innovation process

“Sanity” checks:

Introduce into the process to ensure that idea warrants  
further discussion and investment in time and money.

AP6 - 23

“Innovation is a process which can be managed by a stage gate methodology.”

**An innovation process -  
from idea > implementation**

Gate Decisions in stages of innovation process

Checklist:

- Description of idea – circulate
- Describe “market sectors”
- Describe competitive pressure
- Identify customer needs
- Health, Safety and Environment
- Fit company products and services
- Rough cost

AP6 - 24

“Innovation is a process which can be managed by a stage gate methodology.”

## Techniques



- Data Collection interviews and Questionnaires
- Cause and Effect (Fishbone) Analysis
- Performance Check Lists
- Concentration Diagrams
- Process Flowcharts
- Activity Sampling

Which techniques do you use & why?

AP6 - 25

### Data Collection interviews and Questionnaires

Interviews and Questionnaires are techniques for collecting views and perceptions of project performance, from inside or outside a project organisation. They can also indicate how a performance might be improved in the future. The answers are used as data which can then be used to help decide on a future course of action.

### Cause and Effect Analysis

Cause and effect analysis is a technique for identifying the possible causes affecting a problem or project. A cause and effect diagram is a simple yet powerful method of graphically recording possible causes and relating these to their effects.

### Performance Check Lists

Performance check lists provide a systematic method of recording project performance in a simple way. They are used to understand and quantify problems which need to be investigated.

### Concentration Diagrams

Concentration diagrams are visual displays of the location and frequency of defects or problems within current or past projects. They are used to show where a defect or a problem consistently occurs on a product or in a process.

### Process Flowcharts

A process is a system which converts an input into an output by performing work or tasks. Analysis of a process is a complex subject, since a process can be analysed against a number of criteria. Process flowcharting helps analyse processes in sequential steps to improve understanding of performance.

### Activity Sampling

Activity sampling is a means of making random observations of a project process or activity to gain an understanding of the overall performance or status of that process. It enables conclusions to be obtained from a limited number of discrete observations at a reduced cost.

## Techniques

- Data Handling
- Pareto Chart Analysis
- Force Field Analysis
- Ranking and Rating
- Solution Effect Diagrams
- Failure Prevention Analysis

Which techniques do you use & why?

AP6 - 26

### Data Handling

Various techniques are available to display project specific data in pictorial form for analysis. They include tally sheets, frequency distributions, histograms, graphs and charts.

### Pareto Analysis

Pareto analysis is a simple technique that helps separate the major causes (the vital few) of project problems, from the minor ones (the trivial many). It is also known as the 80/20 rule, i.e. 80% of the problems are due to 20% of the causes.

### Force Field

Force field analysis is a technique for formally listing and analysing the various forces acting in a given situation, or affecting a given problem. The analysis enables the selection of a course of action, recognising both the positive forces (those acting or potentially working for improvement) and negative forces (those potentially working against improvement).

### Ranking and Rating

Ranking is the structured process of placing a number of options in order of preference. To rank options it is necessary to score them. This scoring is called rating. In rating each of the options, scores are based upon preselected criteria.

### Solution Effect Diagrams

Solution effect diagrams are used to test potential solutions and to identify all the effects of these solutions. Similar to cause and effect diagrams, they are powerful visual tools; in effect they are cause and effect diagrams in reverse.

### Failure Prevention Analysis

Failure prevention analysis (FPA) is a systematic approach for examining project activities (a system, procedure, operation or process) to determine potential failures. Having identified possible failures, actions which remove or reduce the probability of their occurrence can be devised and implemented.



## Techniques



### Creativity approaches:

- SCAMPER - Alex Osborn
- Synectics - George Prince
- Lateral Thinking - Edward de Bono

Brainwriting

Brainstorming

Mind mapping

Morphological Box

Heuristics

TILMAG

AP6 - 27

There are three key figures in creativity:

**Alex Osborn** in the 1950s was the father of brainstorming and the use of questions to prompt creative thinking.

**George Prince** in the early 1960s and his colleagues at AD Little devised synectics to help address difficult problems based on taking the problem into a completely different world.

**Edward de Bono** in the late 1960s promoted lateral thinking and is probably the best known of the creative thinkers.

The effectiveness of brainstorming can be greatly increased by using such approaches, supported by the techniques listed above.

### A useful pocket guide:

“The Creativity Tools Memory Jogger™” Diane Ritter & Michael Brassard  
IFS international Ltd Tel: 01234 853605 Fax: 01234 854499

## A Learning Organisation

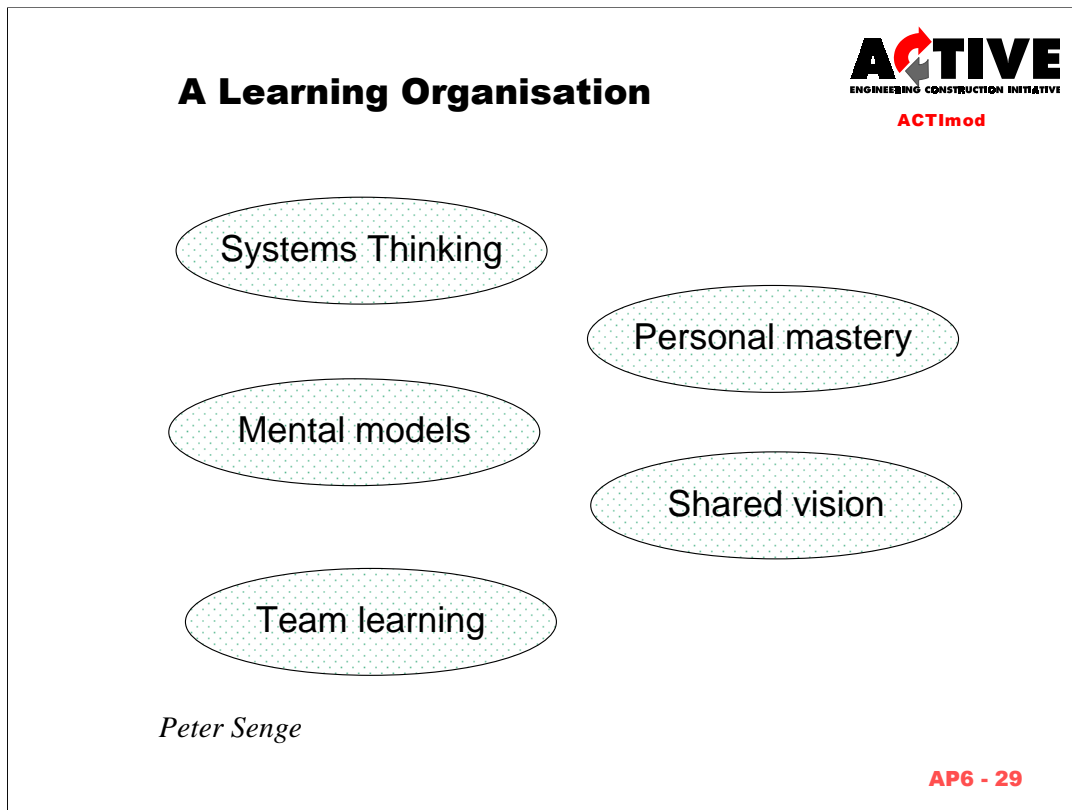


**Create & Protect** - All knowledge is created within the business and closely guarded on a need-to-know basis. Generally associated with large corporate R&D departments, but equally in small companies as residing in the head(s) of its founder(s)!

**Share & Apply** - All sources (internal and external) of knowledge are actively sought, shared and managed to create value for the business. The focus now is on how fast can knowledge be shared and applied. The company encourages extensive networking within and outside its boundary. For example, 95% of the world's R&D is done outside the UK - do you access it?

AP6 - 28

Taking the quality movement a step further in the 1980s, Arie de Geus from Shell was one of the first to highlight that the traditional approach of “create & protect” would lose out to “share & apply”. He pointed out that considerable effort was being wasted in trying to be too secretive! By learning faster than your competitors, you will ensure that by the time anyone has copied or caught up with your present position, you would be that much further along! Also by being more open about your knowledge, others would be able to make connections between their know-how and yours to create new business opportunities.



These are “some of the key elements of a learning organisation”.

Peter Senge and his colleagues at MIT pioneered the practical approach to learning organisations.

For further details see:

“The Fifth Discipline Fieldbook - Strategies and Tools for building a learning organisation”, Peter Senge et al, 1994, published by Nicholas Brealey, ISBN 1-85788-060-9

## **Supplementary topics**



Further consideration should be given to:

- QFD - Quality Function Deployment

**AP6 - 30**

This topics flows from the material presented in this module. It is at “the next level” of detail and interest. The intention is to develop additional material to cover this area as an Addendum to the module.

**AP6 :- Effective innovation and continuous improvement**

**Supporting Value Enhancing Practices:**

VEP 6.1 Continuous Improvement

VEP 6.2 Innovation and Intellectual Property

**AP6 - 31**

**VEP 6.1 Guidelines:**

- defining areas of application
- setting improvement objectives
- reviewing and selecting methods
- monitoring performance
- reviewing progress

Attachment 6.1-A Methods for assisting continuous improvement

**VEP 6.2 Guidelines:**

- defining improvement objectives
- harnessing innovation in supply chain
- establishing a challenging culture
- evaluating and selecting improvement options
- capturing and applying learning

A useful insight into how an SME transformed its performance through innovation and continuous improvement is contained in the book by Ken Lewis, MD of Dutton Engineering (Woodside) Ltd and Stephen Lytton entitled “How to transform your company and enjoy it!” published by Management Books 2000 Ltd, 1995, ISBN 1-85251-133-8.

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ACTImod **ACTIVE**  
ENGINEERING CONSTRUCTION INITIATIVE

## Ingredients for success

Winning UK companies:

- Are led by visionary, enthusiastic champions of change
- Unlock the potential of their people
- Know their customers
- Constantly introduce new, differentiated products and services
- Exceed their customers' expectations with new products and services

innovation unit

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# Change

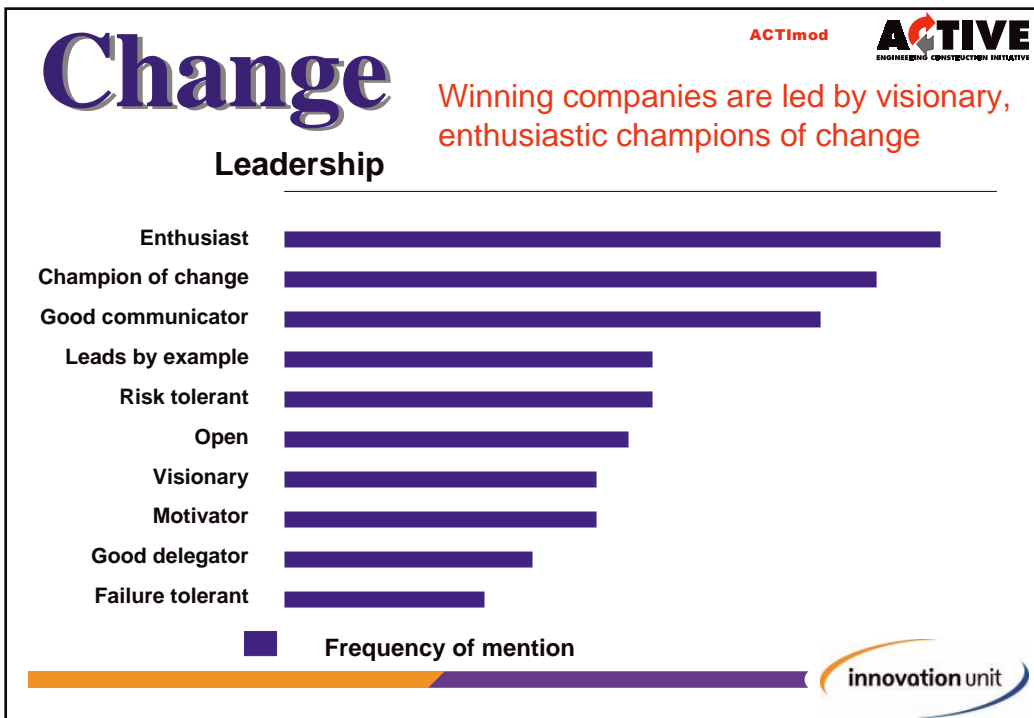
Winning companies are led by visionary, enthusiastic champions of change

**Which of these would you consider most important with regards to leadership ?**

- Good Delegator
- Champion Of Change
- Motivator
- Failure Tolerant
- Open
- Visionary
- Leads By Example
- Enthusiast
- Risk Tolerant
- Good Communicator

ACTImod

**ACTIVE**  
ENGINEERING CONSTRUCTION INITIATIVE





# Empower

Where people are the key resource, which of these would you consider most important ?

Winning companies unlock the potential of their people

ACTImod

- Multi-skilling
- Managerial training
- Skills training

- Empowerment
- Flexible employees
- Teaming

# Empower

Where people are the key resource

Winning companies unlock the potential of their people

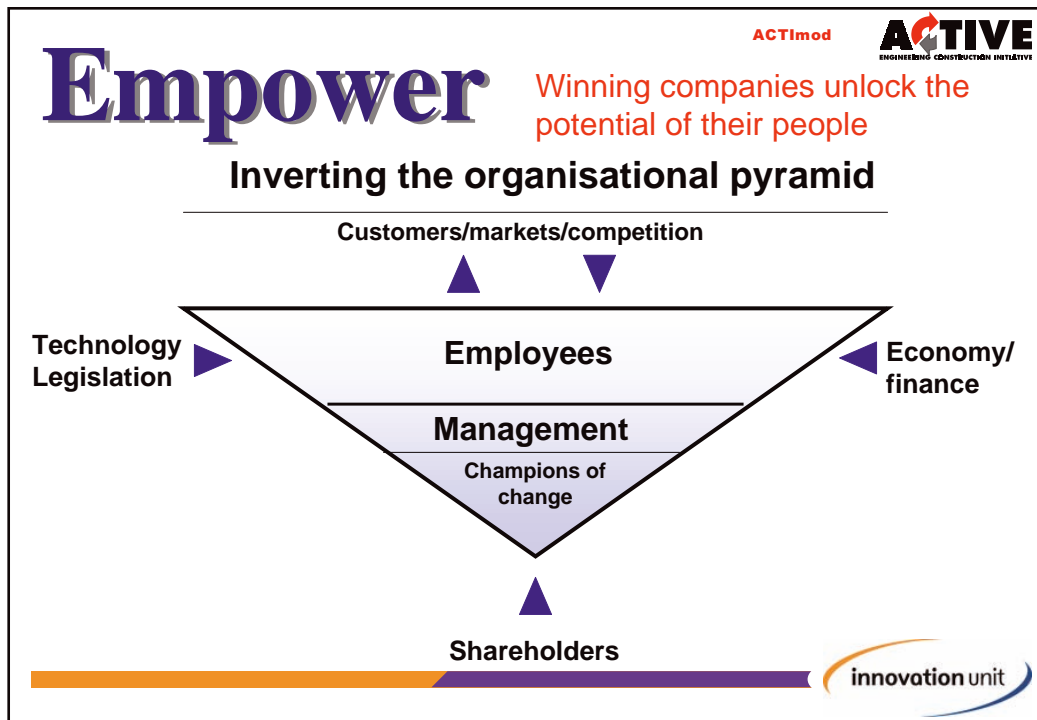
ACTImod

Where people are the key resource

---

Teaming	<div style="background-color: #000080; height: 15px; width: 100%;"></div>
Skills	<div style="background-color: #000080; height: 15px; width: 95%;"></div>
Empowerment	<div style="background-color: #000080; height: 15px; width: 90%;"></div>
Multi-skilling	<div style="background-color: #000080; height: 15px; width: 75%;"></div>
Flexible employees	<div style="background-color: #000080; height: 15px; width: 75%;"></div>
Managerial training	<div style="background-color: #000080; height: 15px; width: 65%;"></div>

Frequency of mention

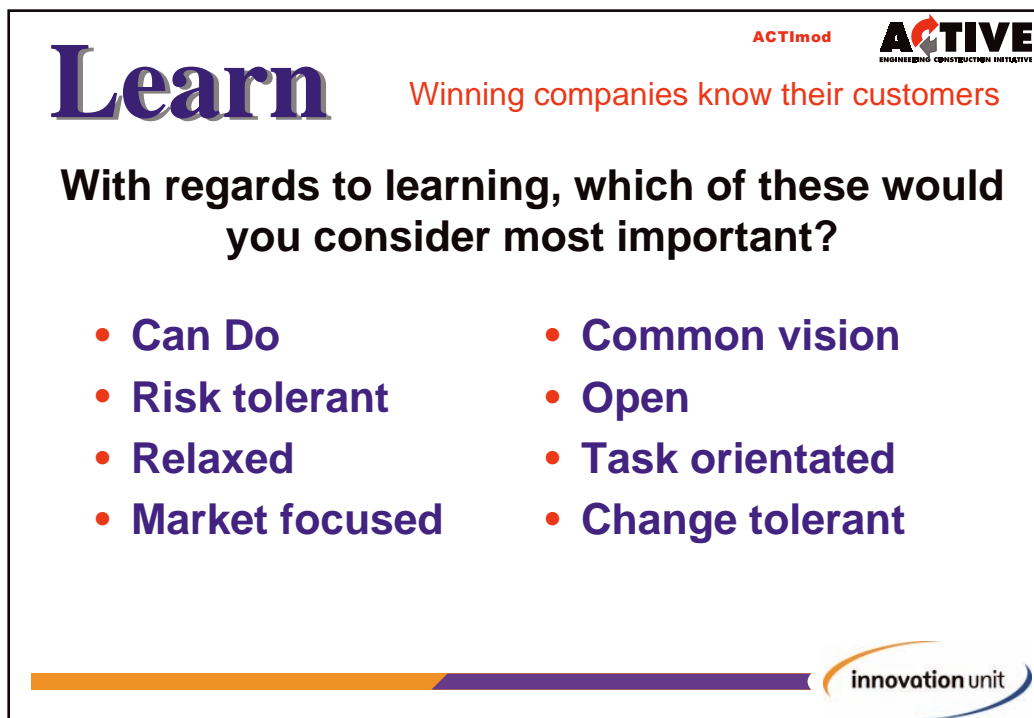


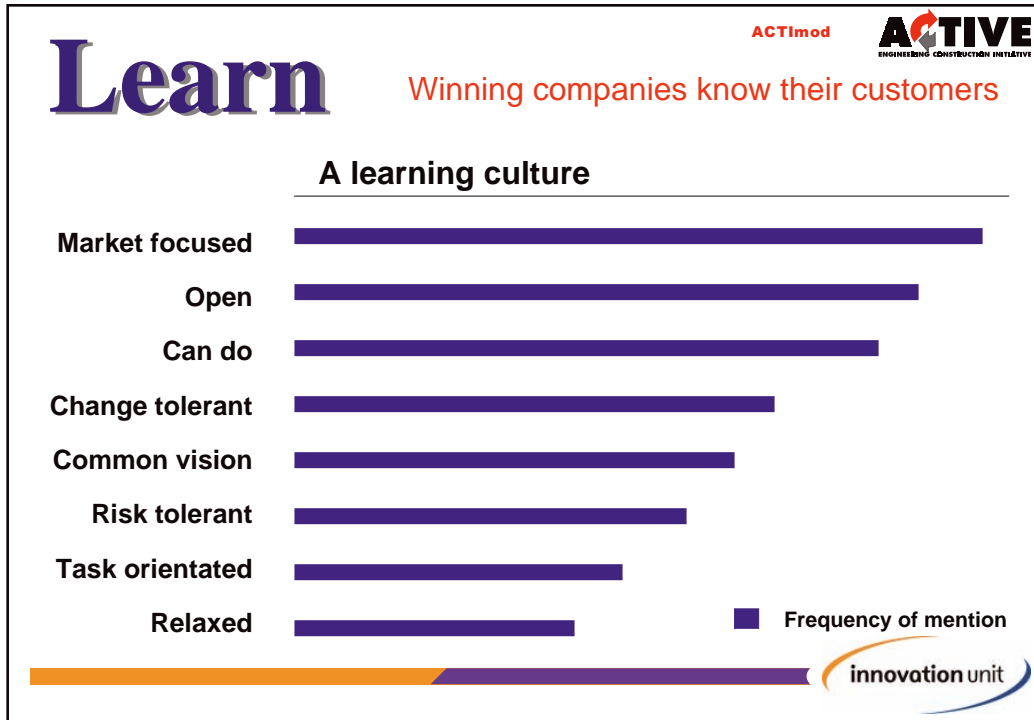
**Empower** Winning companies unlock the potential of their people

**Which of these would you consider most important, with regards to communication?**

- Listen to employees
- Performance review
- Newsletters
- Team Briefings
- Employee noticeboard
- Customer meetings
- Manage by walking

innovation unit





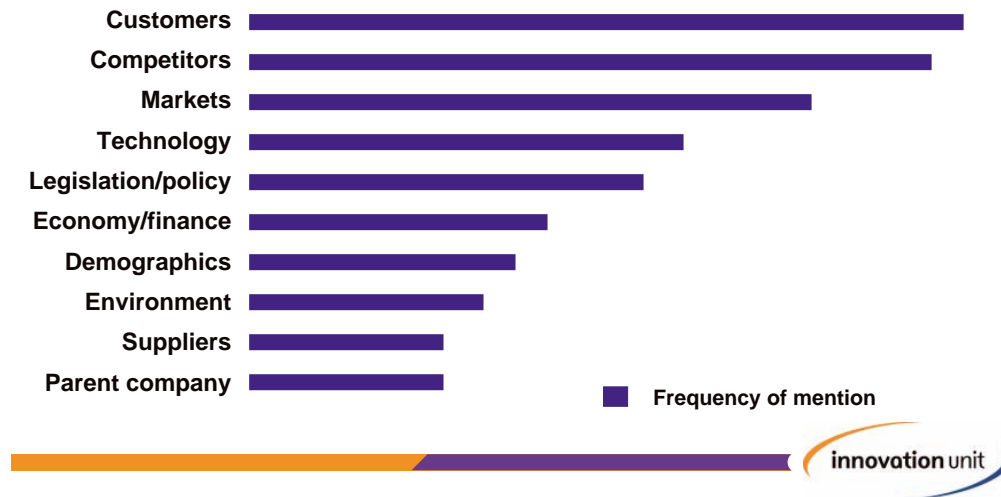
# Learn

ACTImod



Winning companies know their customers

## Drivers for continuous improvement



# Innovate

ACTImod

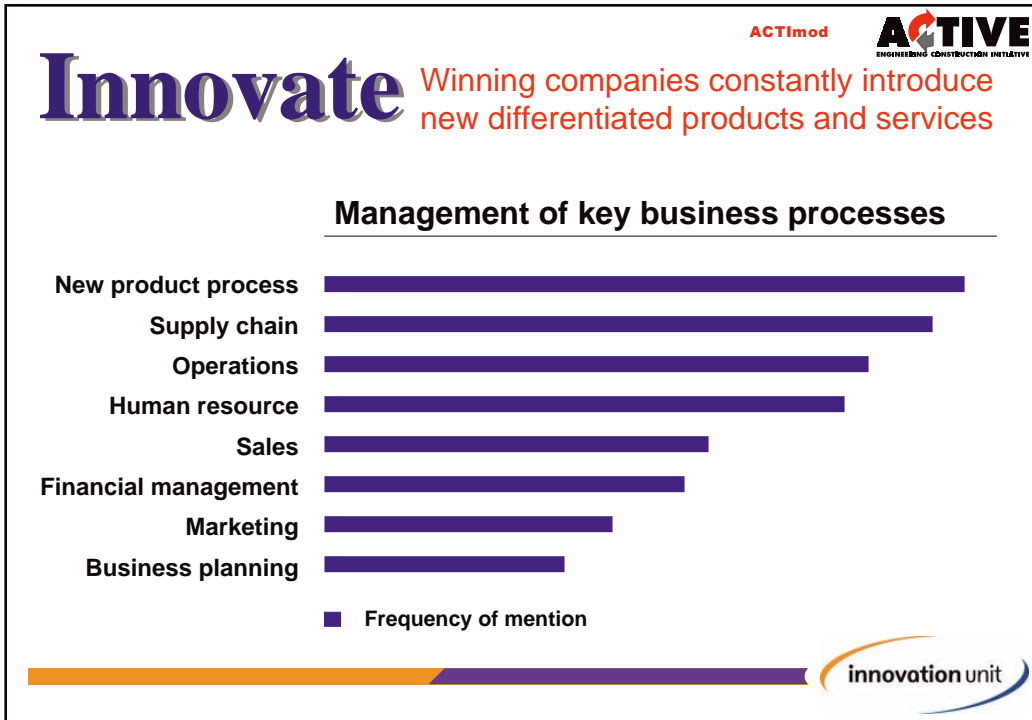


Winning companies constantly introduce new differentiated products and services

With regards to 'management of key business processes', which of these would you consider most important?

- Operations
- Human resources
- New product process
- Business planning
- Supply chain
- Marketing
- Financial management
- Sales











## The Winning Report Checklist

Please circle the number that applies to your organisation.

### Led by visionary, enthusiastic champions

- Leaders have a vision that is owned throughout the organisation.

Fully applies					Don't recognise this!
1	2	3	4	5	

- Build demanding but realistic targets into the business strategy.

Fully applies					Don't recognise this!
1	2	3	4	5	

- Are champions for change who lead by example and accept managed risk

Fully applies					Don't recognise this!
1	2	3	4	5	

Generate an open communicative management style throughout the organisation

Fully applies recognise this!					Don't
1	2	3	4	5	

- Focus on their customers

Fully applies					Don't recognise this!
1	2	3	4	5	

### Know their customers

- Know and anticipate the future needs of their customers.

Fully applies recognise this!				Don't
1	2	3	4	5

- Have a realistic understanding of their competitors and how to beat them in competition for the customers.

Fully applies recognise this!				Don't
1	2	3	4	5

- Know the drivers in their market.

Fully applies				Don't recognise this!
1	2	3	4	5

- Focus on the customer and cultivate an active partnership towards total customer satisfaction.

Fully applies				Don't recognise this!
1	2	3	4	5

- Collaborate with customers, other companies, suppliers and academia to maximise capabilities and minimise risk.

Fully applies				Don't recognise this!
1	2	3	4	5

## Unlock the potential of their people

- Empower all employees by creating individual ownership and focus on customers.

Fully applies				Don't recognise this!
1	2	3	4	5

- Simplify the internal systems wherever possible.

Fully applies				Don't recognise this!
1	2	3	4	5

- Clearly communicate company performance.

Fully applies				Don't recognise this!
1	2	3	4	5

- Encourage a team approach.

Fully applies				Don't recognise this!
1	2	3	4	5

- Train at all levels: professional development, multi-skilling, updating

Fully applies				Don't recognise this!
1	2	3	4	5

- Measure and benchmark performance against direct competitors and other companies in other sectors.

Fully applies				Don't recognise this!
1	2	3	4	5

- Install information and financial systems focused on rapid provision of customer relevant data.

Fully applies				Don't recognise this!
1	2	3	4	5

### Deliver products and services that exceed their customer expectations

- Adopt a philosophy of total quality in all company behaviour that emphasises delighting the customers with all aspects of the product and services.

Fully applies

Don't recognise this!

1	2	3	4	5
---	---	---	---	---

- Measure customer perceptions of products and service.

Fully applies

Don't recognise this!

1	2	3	4	5
---	---	---	---	---

- Deliver continuous improvements in all added value aspects.

Fully applies

Don't recognise this!

1	2	3	4	5
---	---	---	---	---

- Seek to continuously reduce customer costs.

Fully applies

Don't recognise this!

1	2	3	4	5
---	---	---	---	---

- Develop partnerships with their suppliers.

Fully applies

Don't recognise this!

1	2	3	4	5
---	---	---	---	---

### Continuously introduce differentiated products and services

- Have a product and service after next philosophy.

Fully applies

Don't recognise this!

1	2	3	4	5
---	---	---	---	---

- Exploit new technology or legislation to drive new product innovation.

Fully applies

Don't recognise this!

1	2	3	4	5
---	---	---	---	---

- Customise the product and service

Fully applies

Don't recognise this!

1	2	3	4	5
---	---	---	---	---

- Radically improve speed to market

Fully applies

Don't recognise this!

1	2	3	4	5
---	---	---	---	---

- Adopt multi-functional teams to drive innovations forward

Fully applies

Don't recognise this!

1	2	3	4	5
---	---	---	---	---

Add up the scores for each of the five areas and convert to percentages (Note: the maximum score is 25 for all the areas except the third where it is 35!)

Ingredients for success	Scores (%)
Led by visionary, enthusiastic champions	
Know their customers	
Unlock the potential of their people	
Deliver products and services that exceed their customer expectations	
Continuously introduce differentiated products and services	

- What does this tell you about your organisation and its capacity to innovate?
- What does this tell you about your organisation and how supportive the environment is for innovation?

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Organisations who are supporting the study and helping companies change:

- University of Brighton
- TEC National Council
- Investors In People UK
- The Institute of Personnel & Development
- The Confederation of British Industry
- The Institute of Directors
- Institute of Management
- Management Charter Initiative
- Trades Union Congress
- Engineering Employers Federation
- Involvement and Participation Association
- Institute Of Management Consultancy
- Economic and Social Research Council
- Royal Society For The Encouragement of Arts, Manufacturers And Commerce
- Department of Trade & Industry
- Department for Education & Employment

# Five Paths To Sustained Success

- Shared Goals
- Shared Culture
- Shared Learning
- Shared Effort
- Shared Information





# Stages of Development



**Stage 1**



**STARTING OUT**

**Stage 2**



**MOVING FORWARD**

**Stage 3**



**NEW HORIZONS**



# **PATH 1 - Shared Goals**

**Understanding the Business  
we are in**



# SHARED GOALS



## New Horizons

- As many people as possible dynamically contribute to plan & own it

## Moving Forward

- Management Team share vision and plan with everybody

## Starting Out

- Vision and plan of MD explained to everybody



## PATH 2 - Shared Culture

**AGREED VALUES  
BINDING US TOGETHER**



# SHARED CULTURE



## New Horizons

- Competitive culture that is genuinely blame-free where people push for change

## Moving Forward

- Everyone feels valued and collective confidence & trust is built with problems faced up to openly

## Starting Out

- Managers are fair and involved and start to tackle the fear of change



## **PATH 3 - Shared Learning**

**Continuously  
improving ourselves**



## SHARED LEARNING



### New Horizons

- Managers provide coaching & support role with individuals developed to build tomorrow's capability

### Moving Forward

- People enrolled in their own development and management developed to achieve stretching targets

### Starting Out

- People trained for the job and performance measures are well defined



## **PATH 4 - Shared Effort**

**One business driven by  
flexible teams**





## SHARED EFFORT



### New Horizons

- Strong inter-team working with regular ad hoc teaming and company one team

### Moving Forward

- Teams are trained as effective working units with discretion and made internal customers

### Starting Out

- Managers are developed as team leaders and team problem-solving performance is measured



## **PATH 5 - Shared information**

**Effective communication  
throughout the organisation**



## SHARED INFORMATION



### New Horizons

- Information is readily available for decisions to be delegated and everyone is responsible for seeking and passing information

### Moving Forward

- Good & bad news relayed openly and process in place to allow ideas to be taken into account with information shared among teams

### Starting Out

- Communications effectiveness is checked and decisions reported with behaviour all important



# PARTNERSHIPS WITH PEOPLE

## THE PARADOXES

<b>Demanding</b>	<b>yet</b>	<b>Giving</b>
<b>Structured</b>	<b>yet</b>	<b>Fluid</b>
<b>Disciplined</b>	<b>yet</b>	<b>Creative</b>
<b>Confident</b>	<b>yet</b>	<b>Self-critical</b>
<b>Supportive</b>	<b>yet</b>	<b>Stretching</b>
<b>Accountable</b>	<b>yet</b>	<b>Blame free</b>
<b>Entrusted</b>	<b>yet</b>	<b>Managed</b>



# Self-assessment Grid



PATH SCORE	Stage 1 Starting Out					Stage 2 Moving Forward					Stage 3 New Horizons				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Path 1 Shared Goals								x							
Path 2 Shared Culture					x										
Path 3 Shared Learning						x									
Path 4 Shared Effort										x					
Path 5 Shared Information					x										



## **PARTNERSHIPS WITH PEOPLE**

### **ACTION FOR CHANGE**

- **Must be led from the top**
- **Progressive involvement of people**
- **Bottom-up audit identifies issues**



# PARTNERSHIPS WITH PEOPLE



## ACTION FOR CHANGE

- **Build awareness and understanding**
- **Influence peers and suppliers**
- **Involve customers in what we are doing**
- **Provide help and support**
- **Regional and sectoral focus**



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## “Partnerships with People”

The attached slightly tongue-in-cheek questionnaire is derived from the in-depth feedback obtained from the highly successful organisations, which participated in “Partnerships with People”. All you have to do is answer it honestly - for example, in question 1, if you feel the third answer (c) is the right one, you should tick it. Please only tick one answer per question. You will shortly be given the key to scoring each of your replies so that you can see how your organisation rates.

**1. Is there a step-by-step plan and do all staff fully understand it?**

- a) What is a plan?
- b) We talk to the staff when there is something new to tell them
- c) We involve as many people as possible in creating our plan - after all, they know more about their jobs than we do.

**2. Do all staff contribute ideas about how objectives can be implemented?**

- a) We pay people to work - when we want people to have ideas we'll tell them what they are.
- b) We make sure that everyone has time to think about what they are doing and how to do it better, and we capture all ideas quickly, before we lose them.
- c) We encourage people to suggest ideas and we follow these up.

**3. Is your strategy and work plan widely discussed before it is agreed?**

- a) We make sure that everyone understands our objectives.
- b) We have found that discussing the plan with our staff before it is signed off ensures that they feel involved in setting goals - we get much more “ownership” that way.
- c) Strategy is set at the top so we don't need a plan.

**4. Would all staff say “management is fair and respects everybody?”**

- a) People round here feel responsible and everyone tries to do a good job.
- b) If someone makes a mistake we come down on them like a ton of bricks.
- c) Everyone knows that we expect them to make a few mistakes - if we are not making mistakes we are not testing the edge.

**5. Do both staff and managers expect that everyone will be dedicated and professional?**

- a) We take time out to make sure all staff feel they are part of a team.
- b) We simply expect people to turn up (most days).
- c) We want people to take pride in their work and for everyone to feel that they are contributing.

**6. Does your culture develop widespread confidence among staff and give them a “can do” attitude?**

- a) If people have a good idea we let them run with it.
- b) I make all the decisions around here (but most of the time I'm too busy).
- c) This is a “buzzy” place to work. Everyone is brimming with ideas and making them happen.

**7. Is everyone highly skilled at their tasks?**

- a) We make sure people keep their skills up to date.
- b) We ask people to tell us what training they need to perform better.
- c) Training? - we can't afford that these days.

- 8. Do all staff feel they are developing new knowledge and skills?**
- a) You are never too old to learn - there is always a better way of doing something.
  - b) We encourage everyone to undertake training and when they achieve a qualification we have an award ceremony.
  - c) Why train? Some people have been doing the same job here for 20 years.
- 9. Are people being deliberately developed to provide a better service for your customers?**
- a) If we spend time developing them, they will leave and get better jobs.
  - b) Everyone is set performance targets and we include a personal development plan in their appraisal.
  - c) We heap praise on those who make the effort to carry out and surpass their personal development plan.
- 10. Do staff at every level work in high-performing teams?**
- a) We let people form teams when they see the need.
  - b) They go and watch the team every Saturday.
  - c) Our managers see themselves as team captains and we have trained them in how to generate ideas and solve problems.
- 11. Are there efficient mechanisms to ensure that teams co-operate?**
- a) We encourage teams to consult whomever they need to get the job done.
  - b) We tell them how to do it.
  - c) There is communication between teams and a bit of friendly rivalry.
- 12. Do teams form and re-form to solve problems quickly and efficiently?**
- a) Teams work well on solving problems and make improvements.
  - b) Our management structure has stood the test of time.
  - c) Teams monitor the effect of their actions and when they have been successful, disband and support other teams as necessary.
- 13. Is there a frequent and open cascade of communication down the organisation?**
- a) We deliver a cascade of information through our management team every month.
  - b) We use "mushroom" management (keep them in the dark).
  - c) We tell people once a year how they have done.
- 14. Is there continuous and open communication across the organisation?**
- a) Staff talk to each other when they need to.
  - b) We encourage everyone to get help and advice from anyone, regardless of their seniority or position in the organisation.
  - c) We only talk on a need to know basis.
- 15. Is there comprehensive and open communication flowing up the organisation so top management really knows what is going on?**
- a) We make it our business to understand what everyone in the organisation thinks.
  - b) We have a committee to tell us what people think.
  - c) We carry out regular audits at all levels of the organisation and share what we all believe.

## YOUR PEOPLE RATING KEY

SCORING		
1a: 0, 1b: 2, 1a: 5; 2a: 0, 2b: 5, 2c: 2; 3a: 2, 3b: 5, 3c: 0; 4a: 2, 4b: 0, 4c: 5; 5a: 5, 5b: 0, 5c: 2; 6a: 2, 6b: 0, 6c: 5; 7a: 2, 7b: 5, 7c: 0; 8a: 2, 8b: 5, 8c: 0;		9a: 0, 9b: 2, 9c: 5; 10a: 2, 10b: 0, 10c: 5; 11a: 5, 11b: 0, 11c: 2; 12a: 2, 12b: 0, 12c: 5; 13a: 5, 13b: 0, 13c: 2; 14a: 2, 14b: 5, 14c: 0; 15a: 2, 15b: 0, 15c: 5.

YOUR SCORE... AND HOW YOU RATE			
<b>0-25 Points</b>  You are obviously running a school of correction. You need help now. Take your head out of the sand and look around you.	<b>26-45 Points</b>  You talk a lot but are you doing what you say? Remember, you set the culture. Your staff take their lead from you. If you say you're too busy for training, so will they.	<b>46-65 Points</b>  You are doing well. But do not get complacent. Use "bottom up" audits to ensure that you know how your people see things.	<b>65-75 Points</b>  Do you have any vacancies?

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## **ACTIVE Principle 1: Effective Project Concept and Definition**

## **ACTIVE Principle 7: Effective Project Execution**

These two ACTIVE Principles are treated together. A small number of introductory slides on each Principle is followed by a common case study. This should be used to bring out the key issues and learning points.

## ACTIVE Principle 1: Effective Project Concept and Definition

The construction of an engineering project is part of a business investment process which should be the responsibility of an appointed project owner or sponsor. For the definition and execution of the capital project the project owner should ensure that a managed project process is in place with appropriate stage gates to control the process, and a project manager appointed.

At the outset of the project, the project manager should ensure that a process of concept development and definition is thoroughly completed. This must identify the commercial and technical objectives for the project, tested against the business drivers, and clearly present the success criteria against which the project will be judged.

An essential requirement is that all key project team members, whether from within the project owning Organisation or external in the supply chain, should be involved at an appropriate stage in this process. This is necessary to ensure a common understanding of project goals, reinforced by an alignment and commitment to those goals by all those involved in the project, or with a stake in the outcome.

While this process will probably entail a series of iterations and evaluation of options as proposals are tested against business objectives, it is important that the outcome should include a clear, unambiguous statement, agreed by all parties, of project objectives, scope and implementation strategy before the actual implementation proceeds.

In the front end definition process, the scope of the project must be established in sufficient detail to assure the sanctioning authority that the investment objectives can be delivered and that the proposal represents value for money at an acceptable level of risk. At this stage it is important to employ practices to enhance the value of the project by challenging assumptions, considering alternative innovative solutions and rigorously testing the technical basis of proposals. Techniques such as risk assessment and value analysis are critical at this stage.

It is important that the outcome of this definition process provides a clear and unambiguous brief of requirements to those who have to execute the project, who themselves should be fully involved in the definition process. The scope documents should not only state what is included in the project, but also that which is excluded from the scope.

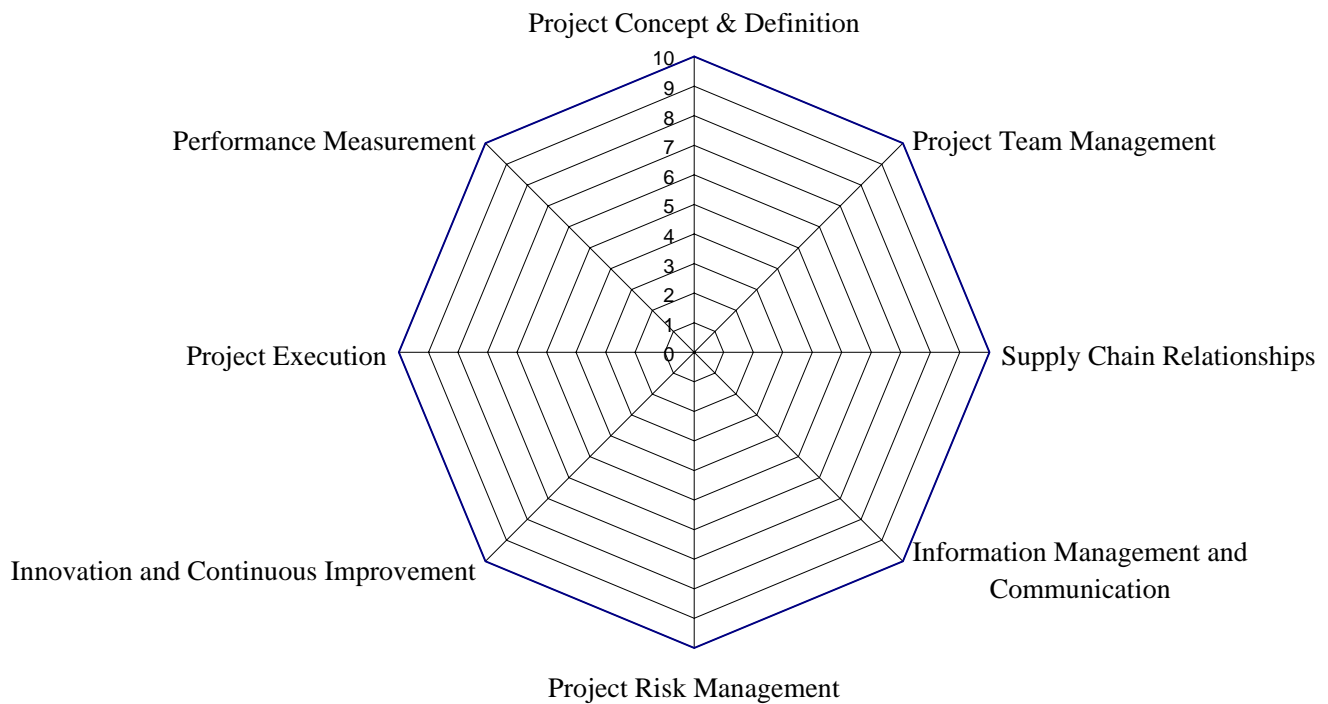
Extract from ACTIVE WORKBOOK Rev. 02. October 1998 **ACTIVE Principles** Section 2  
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## ACTIVE Index Assessment

### AP1. Effective Project Concept and Definition

		VEP Ref:	Mark	W't	Score
1/1	Does the company have a clearly documented, effective project process which is used on all projects?	1.1		3	
1/2	Do all projects in the company have a defined project owner and/or project manager appointed?	1.1		3	
1/3	To what extent are objectives clearly agreed for all projects within the company?	1.1		3	
1/4	Has the company a clear well understood process for project assessment and authorisation?	1.1		3	
1/5	Is there a formal process in the company for review of project definition prior to authorisation?	1.1		3	
1/6	Does the company seek the early involvement of suppliers and other parties who will be involved in executing the project?	1.2		3	
1/7	Does the company use appropriate planning tools to plan projects?	1.3		2	
1/8	Does the company routinely use Value Analysis on all projects?	1.4		2	
1/9	Are projects evaluated on the basis of life cycle costs?	1.4		2	
1/10	Does the company have a formal system for implementing value improvements during project execution?	1.4		2	
1/11	Does the company have a Safety, Health and Environment policy which is applied on all projects?	1.5		4	
1/12	Does the company appoint specific individuals with responsibility for Safety, Health and Environment on each project?	1.5		2	
1/13	Does the company have an effective process for the handover of information to the client/operating team at the end of projects?	1.6		3	
1/14	Does the company ensure that a procurement strategy is defined for each project?	1.7		3	
1/15	Is there a company procurement policy to give guidance on adopting non-adversarial styles of contract?	1.7		2	

**Total Score for Section 1:**



### Guide to presentational material

“Highlight key words from AP1 which lead into the framework for this module”.

AP1-1

“Key elements in developing effective project concept and definition.”

AP1-2

“It is always wise to spend extra time at the front end to ensure that the project is well defined and everyone has a clear understanding of the objectives.”

AP1-3

“In developing the key strategies for implementation, it is essential to involve the project execution team fully, since these strategies will form the basis of all subsequent activities to achieve the completion of the project. Together with the project scope, they form the basis for the project work breakdown structure, schedules, resource plans and cost estimates on which the project will be authorised.”

AP1-4



“A structured project process should be the foundation of all capital projects.”

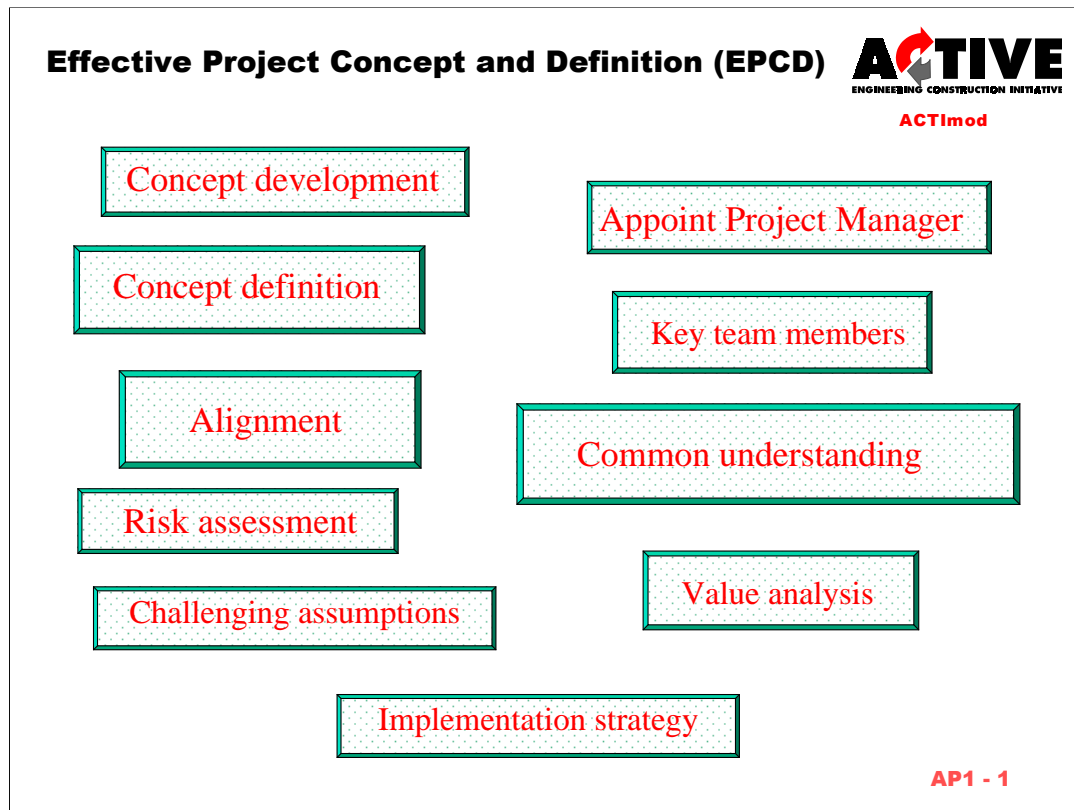
AP1-5

“Supporting Value Enhancing Practices”

AP1-6

AP1-7

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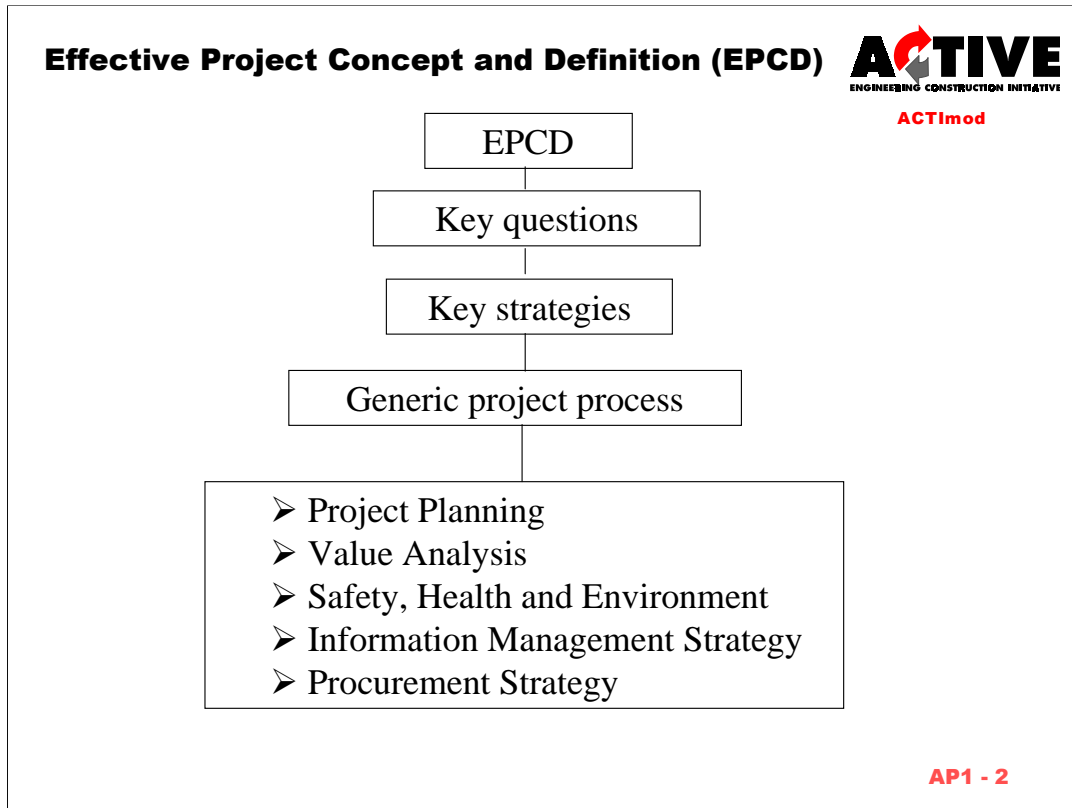
“Highlight key words from AP1 which lead into the framework for this module”

The construction of an engineering project is part of a business investment process which should be the responsibility of an appointed project owner or sponsor. For the definition and execution of the capital project the project owner should ensure that a **managed project process** is in place with appropriate **stage gates** to **control the process**, and a **project manager appointed**.

At the outset of the project, the project manager should ensure that a **process of concept development and definition** is thoroughly completed. This must **identify** the **commercial** and **technical objectives** for the project, tested against the **business drivers**, and clearly present the **success criteria** against which the project will be judged.

An essential requirement is that all **key project team members**, whether from within the project owning organisation or external in the supply chain, should be **involved** at an appropriate stage in this process. This is necessary to ensure a **common understanding of project goals**, reinforced by an **alignment and commitment to those goals** by all those involved in the project, or with a stake in the outcome.

While this process will probably entail a series of iterations and evaluation of options as proposals are tested against business objectives, it is important that the outcome should include a clear, unambiguous **statement**, agreed by all parties, of **project objectives, scope and implementation strategy before the actual implementation proceeds**.



“Key elements in developing effective project concept and definition.”

Continued:

“Highlight key words from AP1 which lead into the framework for this module”

In the front end definition process, the scope of the project must be established in sufficient detail to assure the sanctioning authority that the **investment objectives** can be delivered and that the proposal represents **value for money** at an **acceptable level of risk**. At this stage it is important to employ practices to enhance the value of the project by **challenging assumptions**, considering **alternative innovative solutions** and rigorously **testing the technical basis of proposals**. Techniques such as **risk assessment** and **value analysis** are critical at this stage.

It is important that the **outcome** of this definition process provides a clear and unambiguous **brief of requirements** to those who have to execute the project, who themselves should be fully involved in the definition process. The scope documents should not only state what is included in the project, but also that which is excluded from the scope.

## **Process of concept development and definition**



Key questions to be addressed are:

- Why is this project being considered?
- What are the scope and boundaries of the project?
- What are the commercial objectives?
- What are the technical objectives?
- What are the business drivers?
- How will the project be executed?
- How will the project be judged?

AP1 - 3

“It is always wise to spend extra time at the front end to ensure that the project is well defined and everyone has a clear understanding of the objectives.”

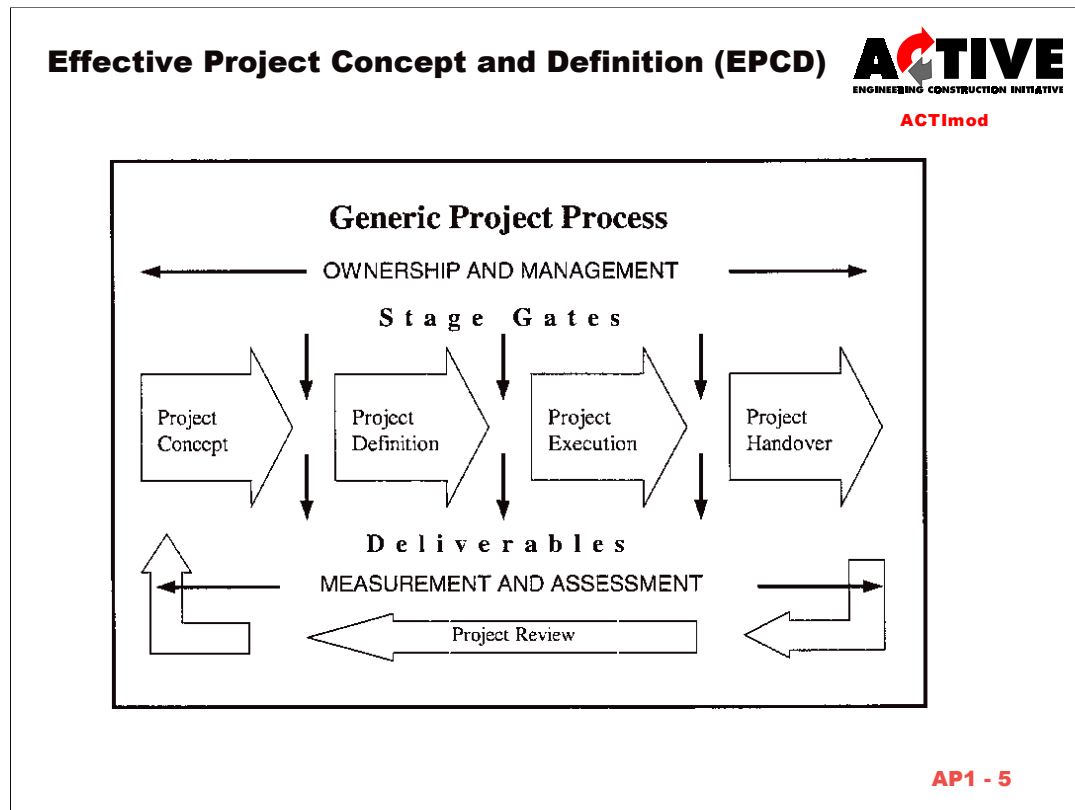
## Implementation strategy

**Key strategies** in the project implementation process should, as a minimum, include:

- Project management and control
- Project Organisation and resourcing
- Communications
- Information management
- Safety, health and environmental policy
- Procurement
- Co-ordination procedures
- Innovation and application of technology
- Management of key external interfaces

AP1 - 4

“In developing the key strategies for implementation, it is essential to involve the project execution team fully, since these strategies will form the basis of all subsequent activities to achieve the completion of the project. Together with the project scope, they form the basis for the project work breakdown structure, schedules, resource plans and cost estimates on which the project will be authorised.”



“A structured project process should be the foundation of all capital projects.”

Diagram from VEP 1.1.

**AP1 :- Effective project concept and definition**

**Supporting Value Enhancing Practices:**

VEP 1.1 Project Process (see diagram AP1-5)

VEP 1.2 Project Definition and Objectives

VEP 1.3 Project Planning

VEP 1.4 Value Analysis

AP1 - 6

**VEP 1.2 guidelines:**

- establishing definition of project objectives
- defining project boundaries
- developing and testing project scope
- developing an execution strategy

**VEP 1.3 guidelines:**

- supporting systems and tools
- estimating and planning
- forecasting

Attachment 1.3-A checklist for planning

**VEP 1.4 guidelines:**

- establishing performance and project objectives
- identifying options and assessing life cycle costs
- seeking continuous improvement
- value workshops
- Attachment 1.4-A life cycle costing



**AP1 :- Effective project concept and definition**

**Supporting Value Enhancing Practices:**

VEP 1.5 Safety, Health and Environment

VEP 1.6 Information Management Strategy

VEP 1.7 Procurement Strategy

AP1 - 7

**VEP 1.5 guidelines:**

- preparing a SHE policy
- appointing competent persons
- determining critical functions and identifying inherent hazards
- seeking inputs on SHE issues
- maintaining thorough records

Attachment 1.5-A Techniques relating to SHE issues

**VEP 1.6 guidelines:**

- Attachment 1.6-A Preparation of project information strategies

**VEP 1.7 guidelines:**

- determining elements of a procurement strategy
- developing a strategy for tendering and communications
- dealing with intellectual property issues
- developing a strategy for post-tender negotiation
- measuring the value of the procurement process

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## **ACTIVE Principle 1: Effective Project Concept and Definition**

## **ACTIVE Principle 7: Effective Project Execution**

These two ACTIVE Principles are treated together. A small number of introductory slides on each Principle is followed by a common case study. This should be used to bring out the key issues and learning points.

## **ACTIVE Principle 7: Effective Project Execution**

The effectiveness of the execution stage of a project will depend greatly upon the quality and thoroughness of the project definition and the extent to which the project objectives, scope, strategy and execution plan have been defined. The way in which a project is subsequently managed through the execution stages can be crucial to delivering an effective project but this depends upon an effective project process being in place.

The key methods for improving project execution include:

- Effective control of schedule, costs and changes to scope, plus the timely provision of competent resources needed to deliver the project
- An efficient detailed design and specification process which ensures the project will meet its objectives and deliver a plant which can be built and operated in a cost effective manner
- Ensuring that supply chain relationships work effectively and that contractors, subcontractors and suppliers operate as part of the team with true alignment to project goals
- Early evaluation of key construction issues, especially interfaces with existing plant operating areas. Most importantly this should include issues of site safety
- Ensuring hand over processes operate seamlessly at the various interfaces, for example from design team to procurement and construction; from construction to start up team; and from start up team to final operators. It is particularly important at handovers to ensure that costly and time consuming duplication of checking, testing and inspection is eliminated
- Efficient site organisation and effective materials management
- A strong, consistent and effective safety, health and environmental policy applied throughout the project
- The implementation of an effective communications strategy within the team as well as across other key project interfaces
- Maintaining sound processes for monitoring, reporting and reviewing progress

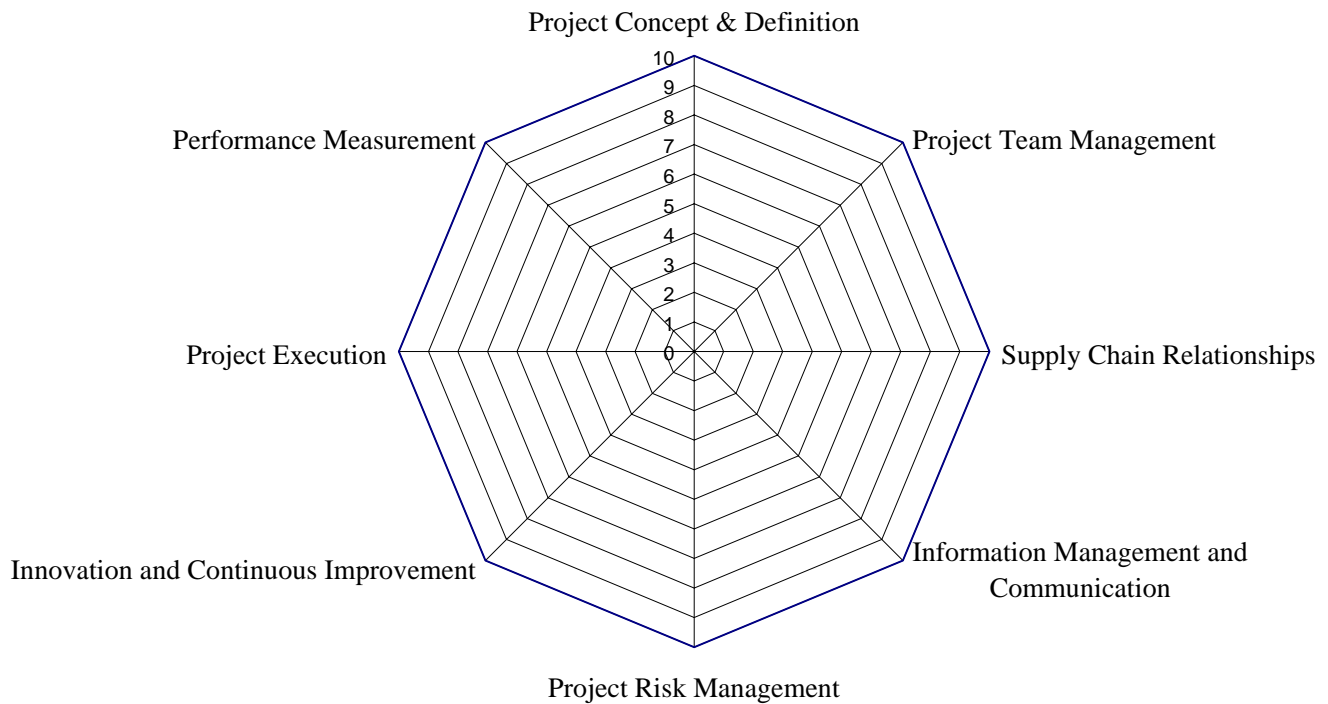
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## ACTIVE Index Assessment

### AP7. Effective Project Execution

		VEP Ref:	Mark	W't	Score
7/1	Does the company have a defined and effective process for the control of projects?	7.1		3	
7/2	Is there a common company format for reporting on project progress throughout all project stages?	7.1		2	
7/3	Are project programmes used to monitor the progress of projects across the company?	7.1		3	
7/4	Does the company have a strategy for ensuring that the most appropriate design tools and systems for projects are employed?	7.2		2	
7/5	In addition to specific project design reviews, does the company regularly and routinely audit the effectiveness of the overall design process?	7.2		2	
7/6	On projects, does the company ensure that there is a good level of design support available during the construction phase?	7.2		3	
7/7	Is constructability a key component of the company strategy for projects?	7.3		3	
7/8	Is it company policy to appoint the construction manager to work as part of the project team during the definition and design phases?	7.3		3	
7/9	Does the company have a process in place to ensure the learning from constructability reviews has been captured for future projects?	7.3		2	
7/10	Is there a company wide process in place to ensure that parts of the plant or systems supplied by separate vendors are successfully integrated during the construction phase of the project?	7.4		3	
7/11	Does the company encourage projects to adopt recognised standards and materials specifications for design?	7.4		3	
7/12	Is it company policy to routinely involve the future operating team in project definition processes as part of the team?	7.5		4	
7/13	Does the company ensure that the requirements of the commissioning and operating teams are integrated into the design process?	7.5		3	
7/14	Is it company policy to have in place a defined system for project handover including qualified and final handover procedures?	7.5		3	

**Total Score for Section 7:**



### Guide to presentational material

“Highlight key words from AP7 which lead into the framework for this module”.

AP7-1

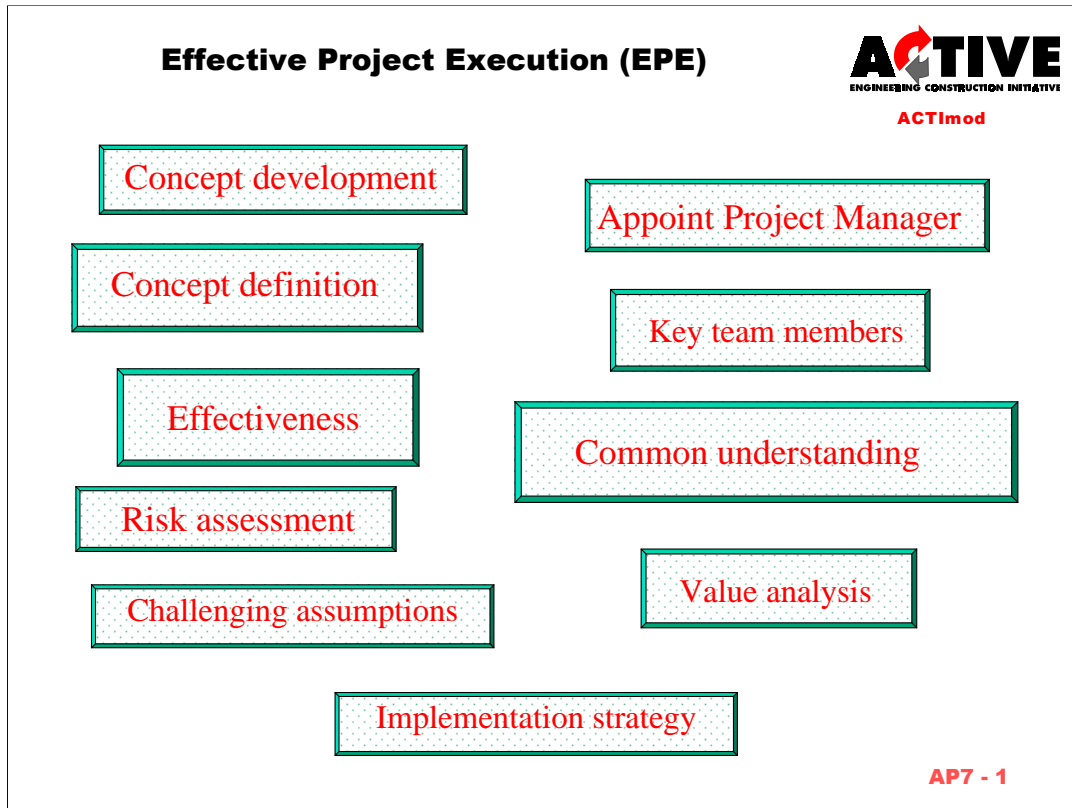
“Key elements for improving project execution.”

AP7-2

“Supporting Value Enhancing Practices”

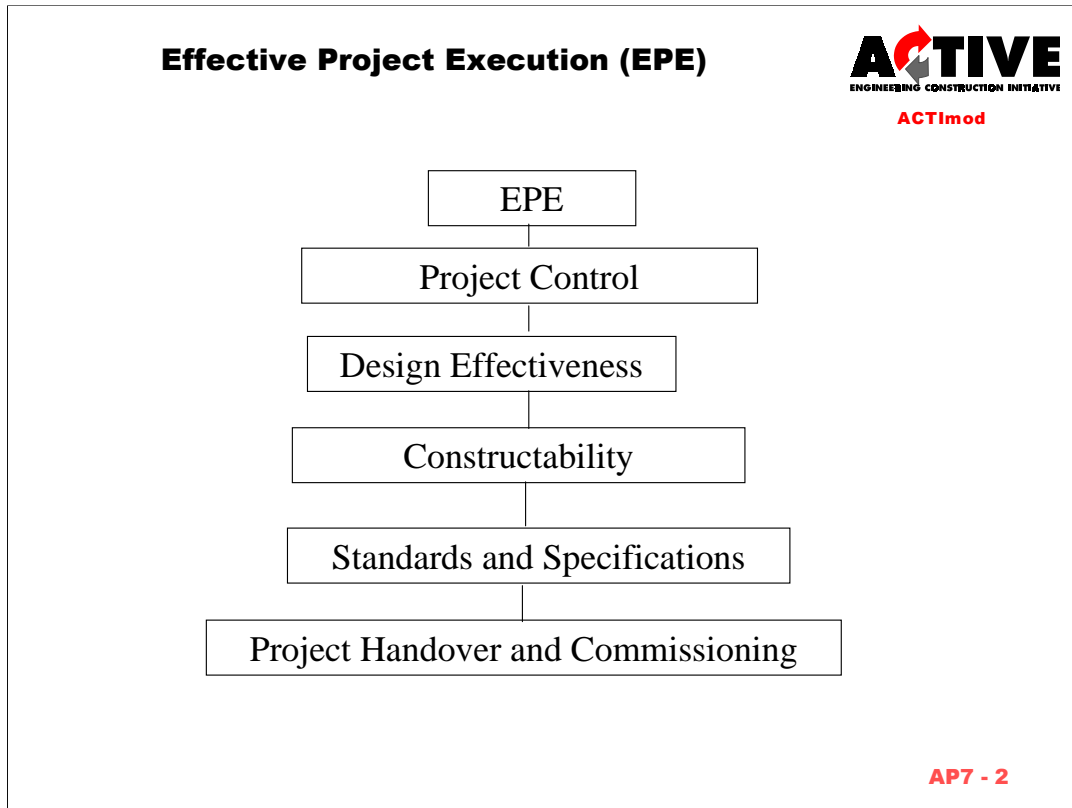
AP7-3

AP7-4



“Highlight key words from AP7 which lead into the framework for this module”

The **effectiveness** of the execution stage of a project will **depend** greatly upon the **quality and thoroughness of the project definition** and the extent to which the project objectives, scope, strategy and execution plan have been defined. The way in which a project is subsequently managed through the **execution stages** can be crucial to **delivering an effective project** but this depends upon an **effective project process** being in place.



The “key elements for improving project execution” include:

- Effective **control of schedule, costs** and **changes to scope**, plus the timely provision of competent resources needed to deliver the project
- An efficient **detailed design and specification process** which ensures the project win meet its objectives and deliver a plant which can be built and operated in a cost effective manner
- Ensuring that **supply chain relationships** work effectively and that contractors, subcontractors and suppliers operate as part of the team with true alignment to project goals
- Early **evaluation** of key **construction issues**, especially **interfaces with existing plant operating areas**. Most importantly this should include issues of **site safety**
- Ensuring **hand over processes** operate seamlessly at the **various interfaces**, for example from design team to procurement and construction; from construction to start up team; and from start up team to final operators. It is particularly important at handovers to ensure that costly and time consuming duplication of checking, testing and inspection is eliminated
- Efficient **site organisation** and **effective materials management**
- A strong, consistent and effective **safety, health and environmental policy** applied throughout the project
- The implementation of an effective **communications strategy** within the team as well as across other key project interfaces
- Maintaining sound processes for **monitoring, reporting and reviewing progress**



**AP7 :- Effective project execution**

**Supporting Value Enhancing Practices:**

VEP 7.1 Project Control

VEP 7.2 Design Effectiveness

**AP7 - 3**

**VEP 7.1 guidelines:**

- supporting systems and tools
- forecasting
- reporting
- project scope control
- feedback

Attachment 7.1-A checklist for project control

**VEP 7.2 guidelines:**

- pre-design
- design procedures
- design communications
- design review

Attachment 7.2-A Technical audit checklist process engineering

Attachment 7.2-B Technical audit checklist mechanical engineering

Attachment 7.2-C Technical audit checklist electrical engineering

Attachment 7.2-D Technical audit checklist instrument engineering

Attachment 7.2-E Technical audit checklist civil engineering

Attachment 7.2-F Technical audit checklist architectural engineering

**AP7 :- Effective project execution**

**Supporting Value Enhancing Practices:**

VEP 7.3 Constructability

VEP 7.4 Standards and Specifications

VEP 7.5 Project Handover and Commissioning

**AP7 - 4**

**VEP 7.3 guidelines:**

- project constructability programme
- constructability reviews
- constructability ideas and initiatives
- Attachment 7.3-A Checklist for project execution

**VEP 7.4 guidelines:**

- defining standards during project definition
- adopting recognised standards and materials specifications
- specifying functionality
- defining boundary parameters
- defining selection criteria
- pursuing cost effective solutions
- avoiding compounding of contingencies
- involving vendors in concept development
- maximising use of vendor's standard designs
- accepting innovative ideas

**VEP 7.5 guidelines:**

- during project definition phase
- during project execution phase
- for phased handover stage
- for qualified handover
- for final handover
- for handover and commissioning process

## **ACTIVE PRINCIPLE 1 - PROJECT CONCEPT AND DEFINITION**

### **ACTIVE PRINCIPLE NO. 7 - PROJECT EXECUTION**

#### **CASE STUDY: PROCESS PLANT INDUSTRY - NEW CONTROL BUILDING**

##### **1.0 Introduction**

The programme for introducing and implementing ACTIVE Principles within a company will be set within a framework of:

- Acquisition of the fundamentals by the company's Champion
- Identification of perceived 'weaknesses' in the company's knowledge of the principles
- Development of the understanding of the Principles using ACTImod as a catalyst
- Implementation of ACTIVE Principles into the management of the company's projects

The intention behind the preparation of APs 1& 7 is to focus a group's attention on the implementation and use of the other APs in an hypothetical but potentially real situation.

The simulated process should be a good measure of the programme's progress.

##### Guide to the use of the APs

- A group, or preferably groups, of five individuals would be most beneficial
- Each individual to be 'allocated' an ACTIVE responsibility
- The process should be facilitated
- The outcomes should be clearly defined and reported

#### **CLIENT REQUIREMENTS, (BUSINESS OBJECTIVE).**

To improve product output by 20%, by debottlenecking various process streams as specified, and installing a new control system with central control within a new Control Building.

The new Control Building is to include an area to accommodate the Plant Manager and his staff together including offices, conference room and kitchen facilities.

## **2.0 BACKGROUND INFORMATION**

### **2.1 GENERAL**

The successful contractor was responsible for detailing out the process plant changes and identifying the control systems necessary to achieve 20% improvements.

Contracts were placed for new vessels, equipment and pipework and separate contracts were placed for a new centralised control system and communication systems. The Control system was purchased from the UK and the Communications Systems were purchased from Europe except for the Communications Control Switches which were supplied from the USA.

Following the site preparation contract a Civil and Building Contract was placed for new plant equipment rooms together with a new Control Building. The strategy being to have the Control Building ready in plenty of time for specialist fit out and be available for the Plant Manager and his team to use as soon as possible.

The contractor's project team took on some responsibility for co-ordinating between contractors but had specified in both the specialist contracts (Control and Communications Contracts) and the Civil and building Contracts that all contractors should liaise together to cover interfaces, particularly within the Control Building. Contractors were also made aware that the Client wished to carry out design reappraisals during the design stages to ensure optimum designs.

### **2.2 CIVIL AND BUILDING CONTRACT**

Was placed on the following basis:-

- Outline planning permission received for a 2 storey building.
- Outline layout of building agreed for "domestic" and "specialist" areas.
- Specialist rooms to be left as empty shells but with:-
  - Plaster wall finishing
  - Service routes identified and formed between Equipment rooms (ground floor) and Control Room above.
  - Fire and Gas detection systems installed and tested for complete building including Specialist rooms.
  - Air Conditioning completed for Domestic side of building with space and services routes installed for the Specialist rooms.

- Facility to remove equipment from the first floor out of the Control Building.
- Programme float between building completion and specialist fit out - 9 months. (i.e. Building to be ready for occupation 9 months before Specialist fit out).
- All Domestic areas to be fully completed for occupation.
- Provide a UPS (Uninterruptable Power Supply for the Control Building).

## **2.3 SPECIALIST CONTRACTS**

Contract for Control systems and Communications Systems were placed on a detailed design, supply, install and commission basis.

The size of the Control room and associated equipment rooms were fixed at Contract award. Support Services for these rooms, i.e. Air Conditioning, to be suitable for "clean room, high-tech" requirements. Complete design engineering, installation and commissioning of these rooms was the responsibility of the Specialist Contractors.

## **3.0 PROGRESS UPDATE**

A progress meeting was held three months into the Civil and Building Contract. It was chaired by the Contract Manager with the representatives from the project team. The following points emerged:

- Specialist Contractor for new Control System unable to provide the necessary information to finalise service route space requirements between rooms and identify positions for windows with the Control Room.
- The Control System contractor had not co-ordinated well with the Communications Contractors which was delaying the layout of the Control Room desks. Civil Contractor unable to get information from Specialist Contractors.
- It was noted that the Client had not been invited to review the designs to ensure optimum approach.
- Local pressure groups were becoming more active because of the proposed increase in road vehicles and rail services to and from the plant to handle the additional 20% product generation. Construction vehicles were being delayed as they approached the site.
- The Project Team decided to call a review with all parties concerned to agree what actions needed to be taken to complete the building in time for occupation and be prepared for the installation of Specialist Systems.

## **4.0 CASE STUDY**

Given that the Main Contractor was now aware that the Specialist data was running late to complete the Control building as specified.

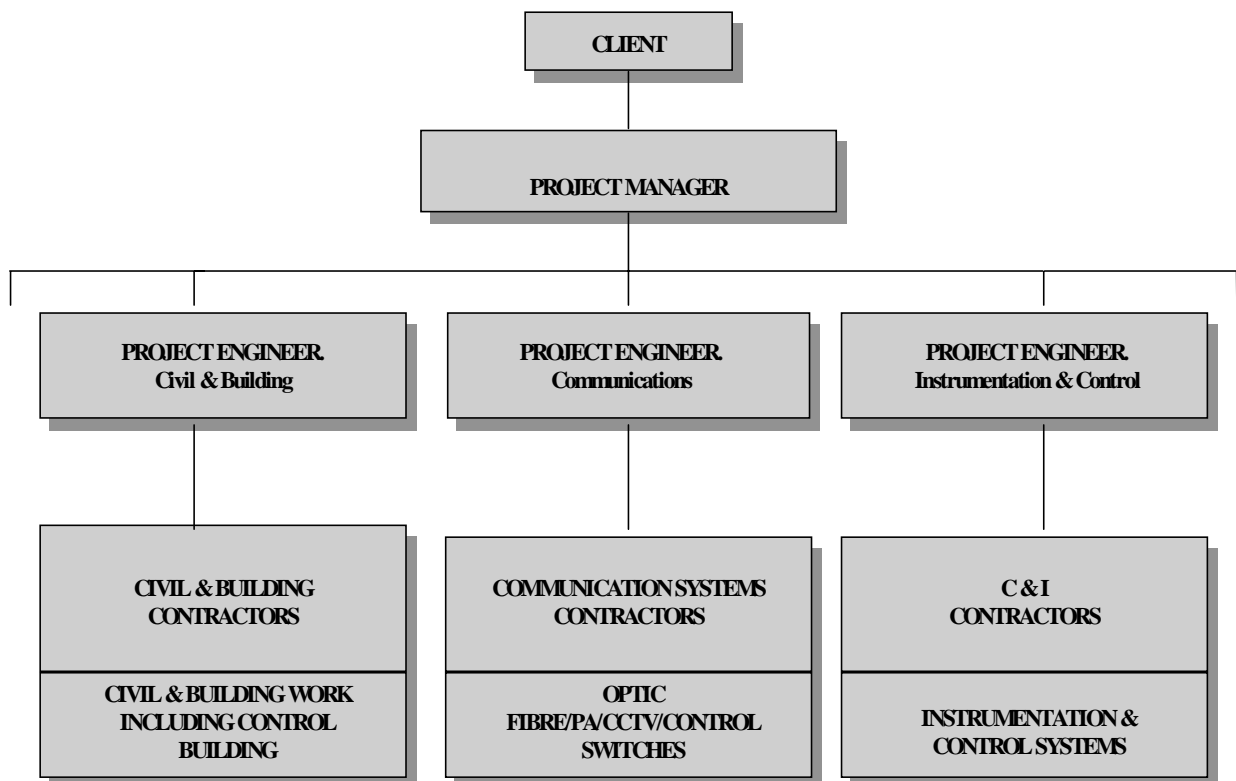
- 1) What decisions were necessary to bring the completion of the Control building back on programme for occupation and ready for Specialist fit out?
- 2) How would you improve progress between the Contractors from this point on?
- 3) If you were the Main Contractor's Project Manager how would you have arranged the Contracts and their interfaces?
- 4) What steps would you take to appease the local pressure group?
- 5) How would you handle the client's requirement for design reappraisals?

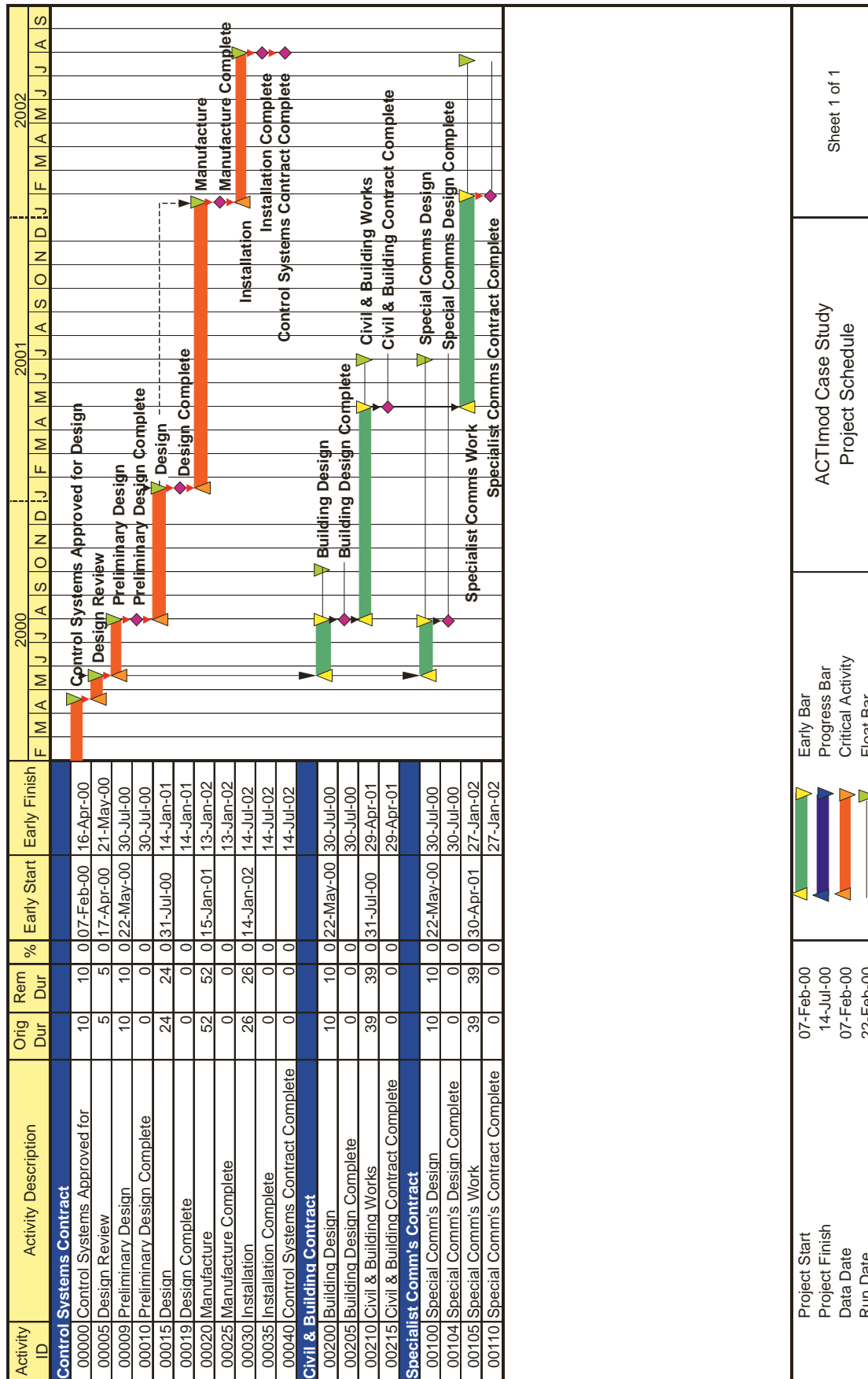
## **5.0 POINTS FOR CONSIDERATION AFTER CASE STUDY COMPLETED**

- Separate Contracts out of step.
- Insufficient allowance/development of relationships to cope with interfaces.
- Civil and Building Contractor may have benefited from taking more active role in co-ordination.
- Space Management a problem.
- Final Control Room Service routes a problem.
- Completing Fire and Gas detection systems in Specialist areas a problem.
- Completing Air-conditioning for Specialist rooms.
- Completing lighting layouts for Specialist rooms.
- Specifying UPS for complete Building including Specialist equipment.
- Position of Windows in C.R.
- Need to fully split Domestic areas from Specialist areas.
- Accommodating Design re-appraisals with Client.
- System Integration; i.e. Control, Communications and Civils.
- Civil Contractor unable to complete his contract.
- Equipment/Systems purchased from around the world.

PREPARED COURTESY OF JOHN M HOY, KVAERNER PROCESS (UK) LTD  
1st February 2000

## CONTRACT MANAGEMENT FOR CONTROL BUILDING







## ACTIVE Principle 8: Effective Performance Measurement

Measurement is crucial for improving project performance and it is important that measures are established for the various stages of the project process. The starting point for measurement must be the objectives and critical success factors for the project. From this starting point, measures should be defined which will relate activity and progress to the achievement of these goals. Bearing in mind that 'what you measure is what you will get', measures must be defined with care, as the choice of inappropriate or sub-optimal measures may drive the project in the wrong direction.

Definition of measures is often not a simple task. 'Hard' measures, which can be determined by collecting statistical data and using objective measurement are usually the easiest to obtain but are often less useful indicators of performance than 'soft' measures which measure more subjective aspects such as behaviours, relationships and capability. The skill is to find hard measures which are good indicators of the softer issues which drive project performance.

For capital projects, there are two types of measures which need to be defined: output measures which measure whether project objectives have been achieved, and indicator measures which measure factors which will strongly influence whether the required outputs are likely to be achieved.

Although output measures are the ultimate yardstick of project performance, they are often not available until late in the project when remedial action may be too late. Indicator measures, however, can be used as the project progresses as predictors of likely outcomes at each of the stage gates in the project process. Indicator measures, therefore, represent a powerful project management tool which can be used for controlling the project and for assuring the project owner on the likely achievement of the project goals.

The use of effective measures on projects and the collection of common, consistent data open the way for benchmarking performance. Benchmarking is a comparative process which uses previously achieved measures of outstanding performance to set challenging standards for improvement on subsequent projects.

The process is based upon measuring current project performance and comparing results with known benchmarks or standards which represent the best in that particular field. It is well established as a powerful technique for driving improvement, based upon measured results rather than intuition or perception.

Since performance benchmarking is concerned with competitiveness, it is usual within the industry for benchmarking to be carried out by a neutral third party organisation operating under confidentiality agreements with participants to preserve anonymity and avoid potential breaches of competition law. Benchmarking can be undertaken at different levels to drive performance improvement in specific areas.

Key areas for benchmarking on capital projects are:

- Project Performance
- Supply Chain Performance
- Design Effectiveness

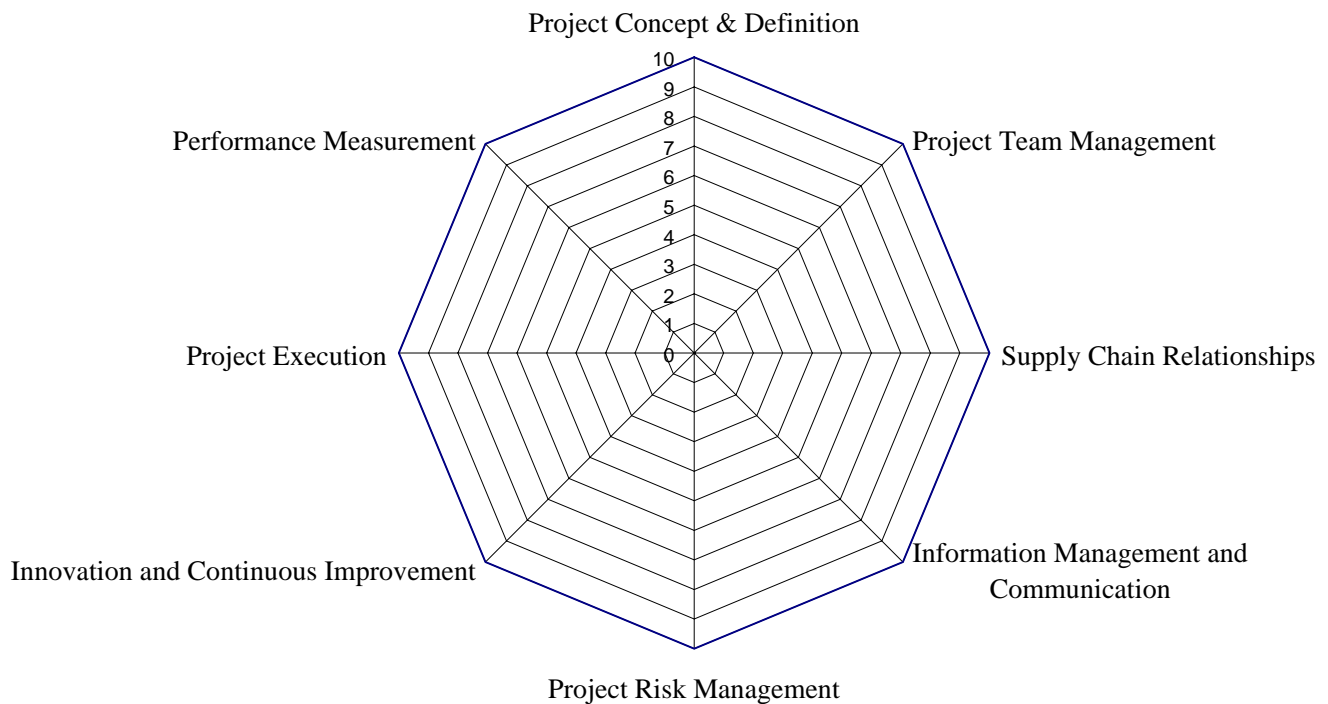
Extract from ACTIVE WORKBOOK Rev. 02. October 1998 *ACTIVE Principles* Section 2  
Page 19 of 20

## ACTIVE Index Assessment

### AP8. Effective Performance Measurement

		VEP Ref:	Mark	W't	Score
8/1	Has a benchmarking model for the company project process been identified, either in-house or with a benchmarking company?	8.1		3	
8/2	Has the company a process for defining key measures on projects at the definition stage and for benchmarking performance?	8.1		3	
8/3	Has design effectiveness for projects in the company been measured and benchmarked?	8.1		3	
8/4	Does the company routinely gather and share data from projects using key performance indicators?	8.1		3	
8/5	Are supply chain partner relationships on projects in the company routinely benchmarked?	8.1		2	
8/6	Does the company prepare and implement action plans resulting from measurement and benchmarking to drive change and improvement within projects?	8.1		2	
8/7	Has overall project performance of the company been benchmarked against the industry norms?	8.1		3	
8/8	Has a flowchart of procurement activities for the company been defined and key performance indicators identified?	8.2		2	
8/9	Have key performance indicators for procurement in the company been defined and has actual performance been measured?	8.2		2	
8/10	Is there a process in the company for actioning improvements in procurement identified during the benchmarking process?	8.2		2	

**Total Score for Section 8:**



### Guide to presentational material

“Highlight key words from AP8 which lead into the framework for this module”.

AP8-1

“Key elements in developing effective performance measurement on projects.”

AP8-2

“Why measure performance?”

AP8-3

“Definition of measures is often not a simple task.”

AP8-4

“For capital projects, there are two types of measures which need to be defined: output measures which measure whether project objectives have been achieved, and indicator measures which measure factors which will strongly influence whether the required outputs are likely to be achieved.”

AP8-5

AP8-6

“When to measure performance?”

AP8-7

“Definition of benchmarking”

AP8-8

“ACTIVE have developed both a project and company measurement process. Full details can be found in the ACTIVE Implementation Pack.”

AP8-9

“ACTIVE project milestones”

AP8-10

“This slide shows an example from the ACTIVE Project Review Questionnaire which can be found in the ACTIVE Implementation Pack. This questionnaire relates predominantly to soft issues which influence project performance.”

AP8-11

“Project performance indicators”

AP8-12

“Benchmarked ACTIVE application”

AP8-13

“Benchmarked project performance indicators”

AP8-14

“ACTIVE application over project life”

AP8-15

“Aggregated ACTIVE performance indicators against aggregated ACTIVE application”

AP8-16

“ACTIVE project review process”

AP8-17

“ACTIVE approved third party benchmarking organisations”

AP8-18

“Business measures – analysts view”

AP8-19

“What do successful businesses do?”

AP8-20

“What is competitiveness?”

AP8-21

“What is a business model?”

AP8-22

AP8-23

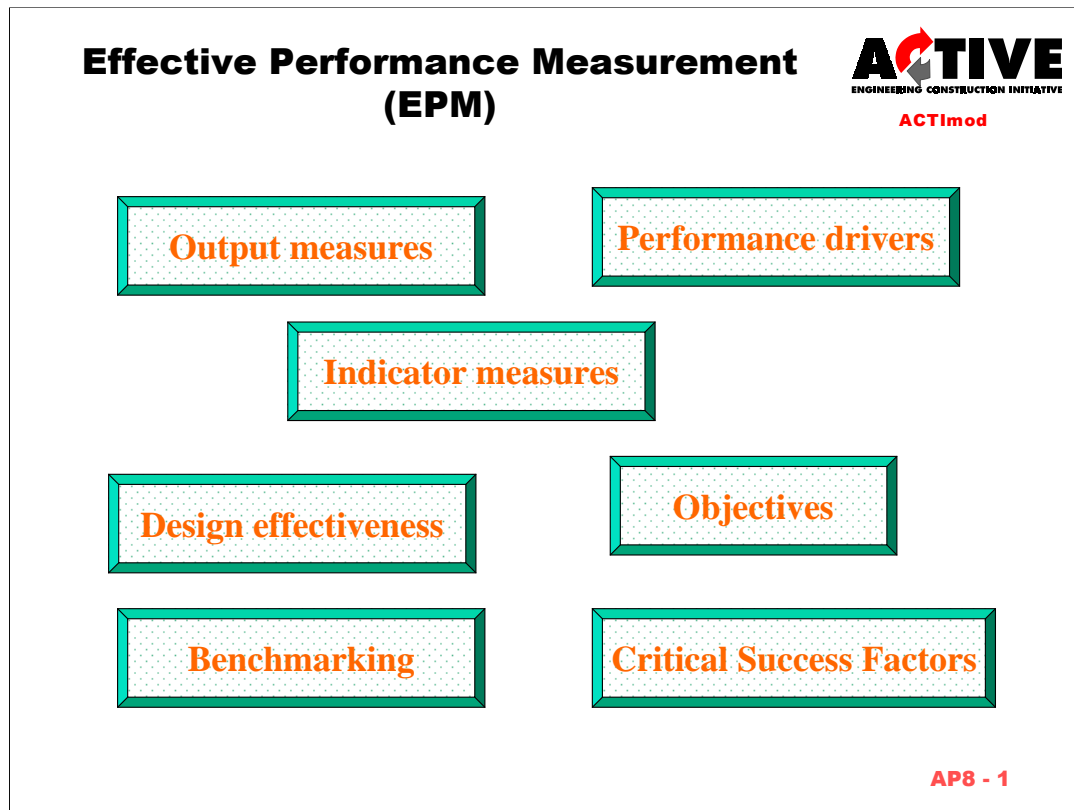
“Supporting Value Enhancing Practices”

AP8-24

“National and Government support”

AP8-25

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“Highlight key words from AP8 which lead into the framework for this module”.

Measurement is crucial for improving project performance and it is important that measures are established for the various stages of the project process. The starting point for measurement must be the objectives and critical success factors for the project. From this starting point, measures should be defined which will relate activity and progress to the achievement of these goals. Bearing in mind that 'what you measure is what you will get', measures must be defined with care, as the choice of inappropriate or sub-optimal measures may drive the project in the wrong direction.

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The process is based upon measuring current project performance and comparing results with known benchmarks or standards which represent the best in that particular field. It is well established as a powerful technique for driving improvement, based upon measured results rather than intuition or perception.

Since performance benchmarking is concerned with competitiveness, it is usual within the industry for benchmarking to be carried out by a neutral third party organisation operating under confidentiality agreements with participants to preserve anonymity and avoid potential breaches of competition law. Benchmarking can be undertaken at different levels to drive performance improvement in specific areas.

## **AP:8 Effective Performance Measurement (EPM)**

Why Measure Performance ?

What is a Measure ?

Types of Measure

When to Measure ?

Benchmarking Results

ACTIVE Project Reviews

Deliverables

Continuous improvement loop

AP8 - 2

“Key elements in developing effective performance measurement on projects.”

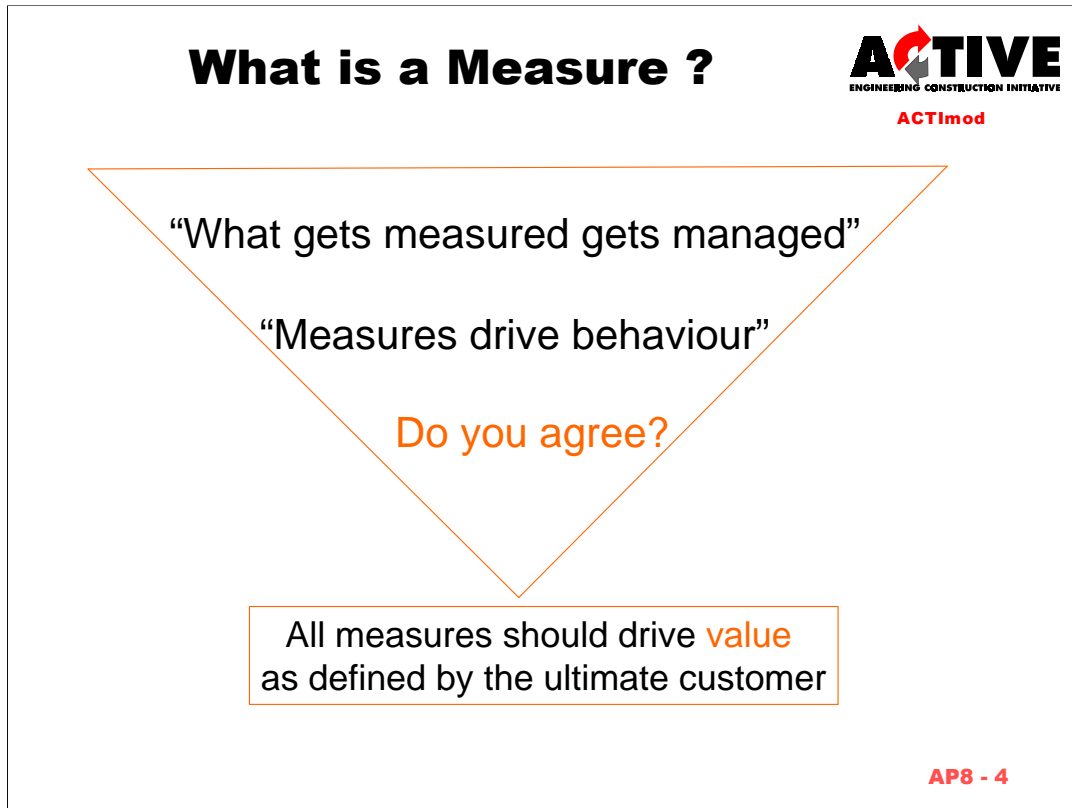


## **Why Measure Performance ?**



- ***Ensures customers are delighted with project outcome***
- ***Ensures project stays on track***
- ***Identifies deficiencies and traps problems early***
- ***Drives performance improvement***
- ***Aids Sharing of lessons learnt***

**AP8 - 3**



“Definition of measures is often not a simple task.”

'Hard' measures, which can be determined by collecting statistical data and using objective measurement are usually the easiest to obtain but are often less useful indicators of performance than 'soft' measures which measure more subjective aspects such as behaviours, relationships and capability. The skill is to find hard measures which are good indicators of the softer issues which drive project performance.

We are all familiar with measures that have been introduced with good intent but when implemented yield an adverse output. Classic examples include:

- supermarket checkouts
- airport baggage handling
- parking restrictions

In each case you can think of a measure which will raise the operational efficiency of the process but which will destroy customer value!

Are you measuring effort or performance?

## Types of Measure



### Output measures

#### *Achievement of project objectives*

- Achieved cost
- Safety performance
- Completion date
- Product quality
- Plant flow rate
- Design changes

AP8 - 5

“For capital projects, there are two types of measures which need to be defined: output measures which measure whether project objectives have been achieved, and indicator measures which measure factors which will strongly influence whether the required outputs are likely to be achieved.”

Although output measures are the ultimate yardstick of project performance, they are often not available until late in the project when remedial action may be too late. Indicator measures, however, can be used as the project progresses as predictors of likely outcomes at each of the stage gates in the project process. Indicator measures, therefore, represent a powerful project management tool which can be used for controlling the project and for assuring the project owner on the likely achievement of the project goals.

## Types of Measure

### Indicator measures

#### *Factors that influence outputs*

- Quality of definition
- Project organisation and process
- Supply chain effectiveness
- Design productivity
- Use of value enhancing practices
- Control of changes
- Progress against schedule

AP8 - 6

## When to Measure Performance ?



### Output measures

- Ultimate yardstick
- Often not available until end of project
- May be too late for remedial action

### Indicator measures

- Taken at various milestones
- Drive correctional procedures
- Assure Project owner of control

AP8 - 7

Although **output measures** are the **ultimate yardstick** of project performance, they are often not available until late in the project when remedial action may be too late. **Indicator measures**, however, can be **used as the project progresses** as **predictors of likely outcomes** at each of the **stage gates** in the **project process**. Indicator measures, therefore, represent a powerful project management tool which can be used for controlling the project and for assuring the project owner on the likely achievement of the project goals.

## Benchmarking

### Definition:

“The process of comparing business practices and performance levels between companies (or divisions) to gain new insights and to identify opportunities for making improvements”

*Price Waterhouse Cooper*

AP8 - 8

Zerox was the pioneer of benchmarking in 1983. The company’s competitive performance had declined so far that they had to do something. Benchmarking was the answer and it transformed the company!

Benchmarking can begin “at home” looking across different products, projects, teams, divisions, sites, etc. It can reveal the spread of performance and lead to sharing of practices between those with the best performance and those with the desire to learn and improve.

External benchmarking can look across your own sector to understand your competitive strengths and weaknesses. It can also look across completely different sectors to learn new ways of working or spark new ideas and approaches. This often works best by focusing on one of your key business processes. A classic example is North West Airlines. They wanted to improve their aircraft turnaround times, as obviously aircraft only make money when in the air. Their inspiration was to look to Formula 1 and how pit crews turnaround racing cars in some 10 seconds!

Where would you look for inspiration on  
a key sub-process for delivering capital projects?

## ACTIVE measurement process



Project review process at 5 milestones  
consists of two main elements:-



- Project Performance Indicators questionnaire relating soft indicator measures
- Set of ACTIVE measures relating to hard indicator and output measures

AP8 - 9

“ACTIVE have developed both a project and company measurement process. Full details can be found in the ACTIVE Implementation Pack.”

The introduction to each ACTImod module contains the appropriate assessment questionnaire for that ACTIVE Principle extracted from the ACTIVE Index in the Implementation Pack.

## ACTIVE Project Milestones



Hard and soft indicator measures taken at project milestones, output measure taken upon project completion:

- 1 Project objectives agreed but scope and implementation strategy still being defined
- 2 Project authorisation / sanction stage
- 3 Detailed design complete and construction work started
- 4 Plant physically complete but still to be started up
- 5 Project complete

AP8 - 10



**Project Review Questionnaire**

**ACTIVE**  
ENGINEERING CONSTRUCTION INITIATIVE  
ACTImod

Indicator measures:-  
**ACTIVE Project review questionnaire**

Score 1(poor) to 5 (very good) & non-applicable

ACTIVE Workbook		ACTIVE Implementation Check List Review No.4	
AP1/9	Has the procurement strategy been effective in achieving completion of the plant?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1.7
<b>AP2: Effective Team Management</b>			
AP2/1	Has the team worked effectively to construction phase?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	2.1
AP2/2	Have the critical success factors set been achieved?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	2.1

AP8 - 11

**ACTIVE VEP (Value Enhancing Practice) reference**

“This slide shows an example from the ACTIVE Project Review Questionnaire which can be found in the ACTIVE Implementation Pack. This questionnaire relates predominantly to soft issues which influence project performance.”

The questionnaire is split into 5 sections relating to each of the project review milestones.

Each section comprises a series of questions relating to each of the 8 ACTIVE Principles.

## Project Performance Indicators

### Examples:

$$\text{Design Changes} = \frac{\text{Cost of Design Changes}}{\text{TIC (Total Installed Cost)}} * 100\%$$

$$\text{Schedule Predictability} = \frac{\text{Actual Schedule}}{\text{Estimated Schedule}} * 100\%$$

$$\text{Safety Performance (OSHA Standard)} = \frac{\text{Recorded Injuries}}{\text{Total Manhours}} * 200,000$$

AP8 - 12

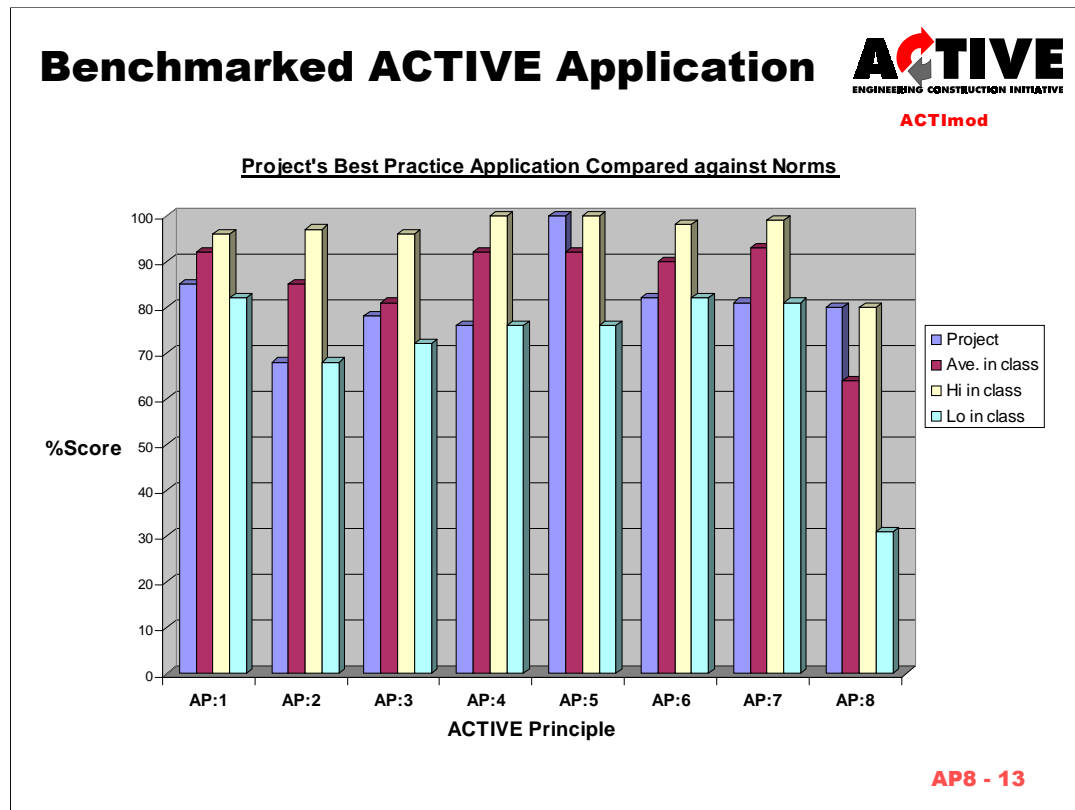
The following Table presents the measures and benchmarks used in assessing the performance of ACTIVE pilot projects:

ACTIVE Measures	Lower Limit	Upper Limit	Project Achievement	Project Performance Formulae (%)
Cost Effectiveness Index	10	3.5	Lower is better	$(10-X)/6.5 \times 100$
Project Definition Rating Index *	460	80	Lower is better	$(460-X)/380 \times 100$
Presanction Design	0%	25%	Higher is better	4 X
Design Changes	25%	0%	Lower is better	$(25-X)/25 \times 100$
Cost Predictability	! 25%	0%	Lower is better	$! [25-(100-X)]/25 \times 100$
Schedule Predictability	! 30%	0%	Lower is better	$! [30-(100-X)]/30 \times 100$
Start Up Changes	20%	0%	Lower is better	$(20-X)/20 \times 100$
Safety Performance **	10	0	Lower is better	$(10-X)/10 \times 100$
Plant Performance	! 40%	0	Lower is better	$! (40-X)/40 \times 100$
Customer Satisfaction	0	100	Higher is better	X

X is the value calculated using the ACTIVE Project Measures and Benchmarks

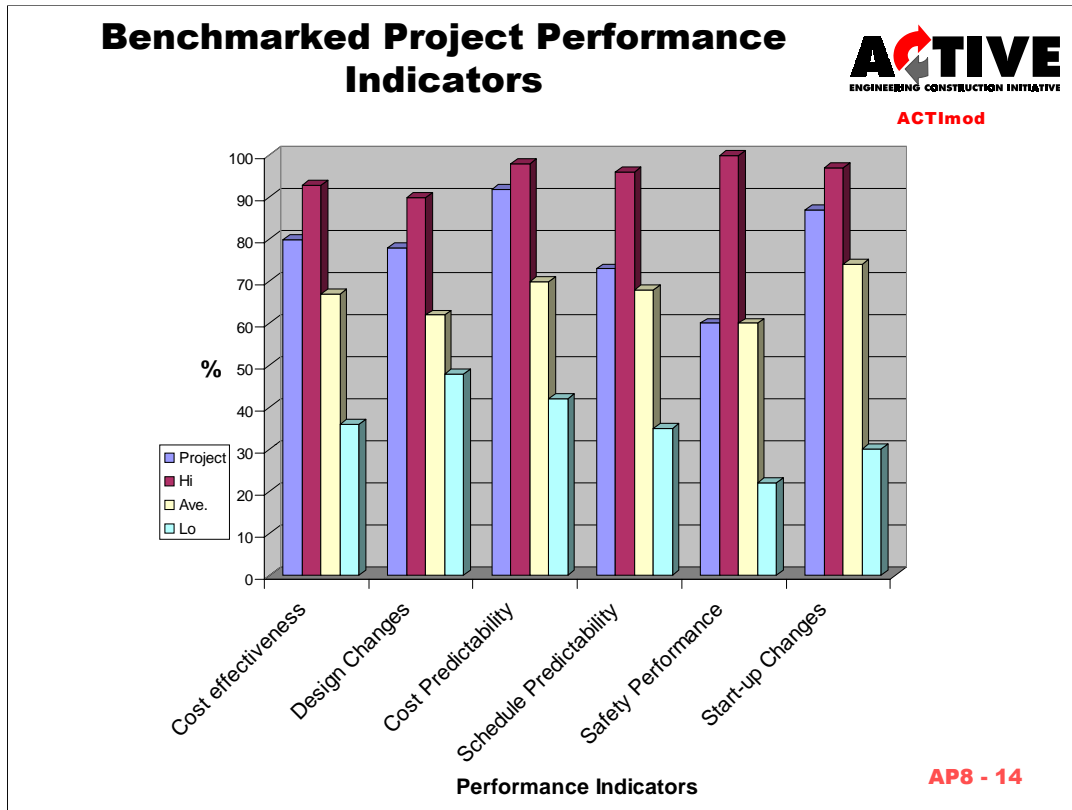
\* Source: ECI

\*\* Source: OSHA, US Dept of Labor. Ref. Occupational Safety & Health Definitions. [www.bls.gov/oshdef.htm](http://www.bls.gov/oshdef.htm)



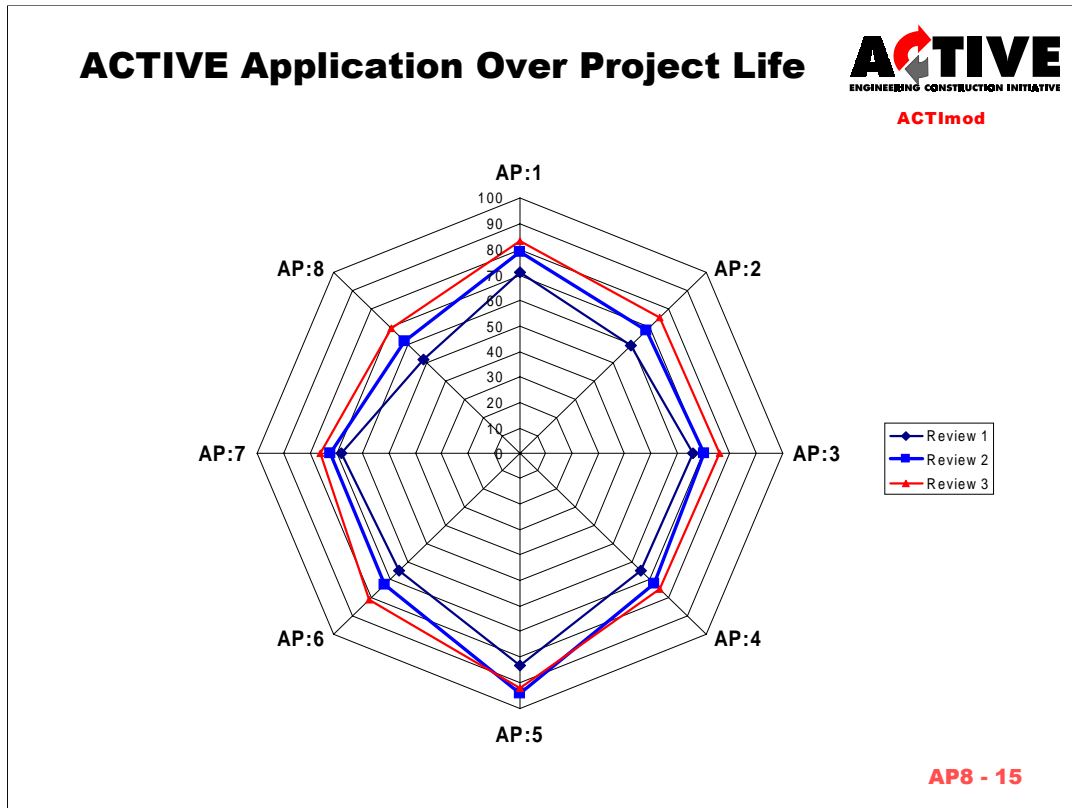
This chart represents the aggregated scores from the ACTIVE review N° 3 questionnaire across each of the 8 ACTIVE Principles. The first column against each principle represents the aggregated score for a particular project. The other 3 columns show the average, best and worst benchmarked values for each principle.

These values have been generated from a 'control group', in this case, data collected from ACTIVE Pilot Projects which have completed ACTIVE Review N° 3.



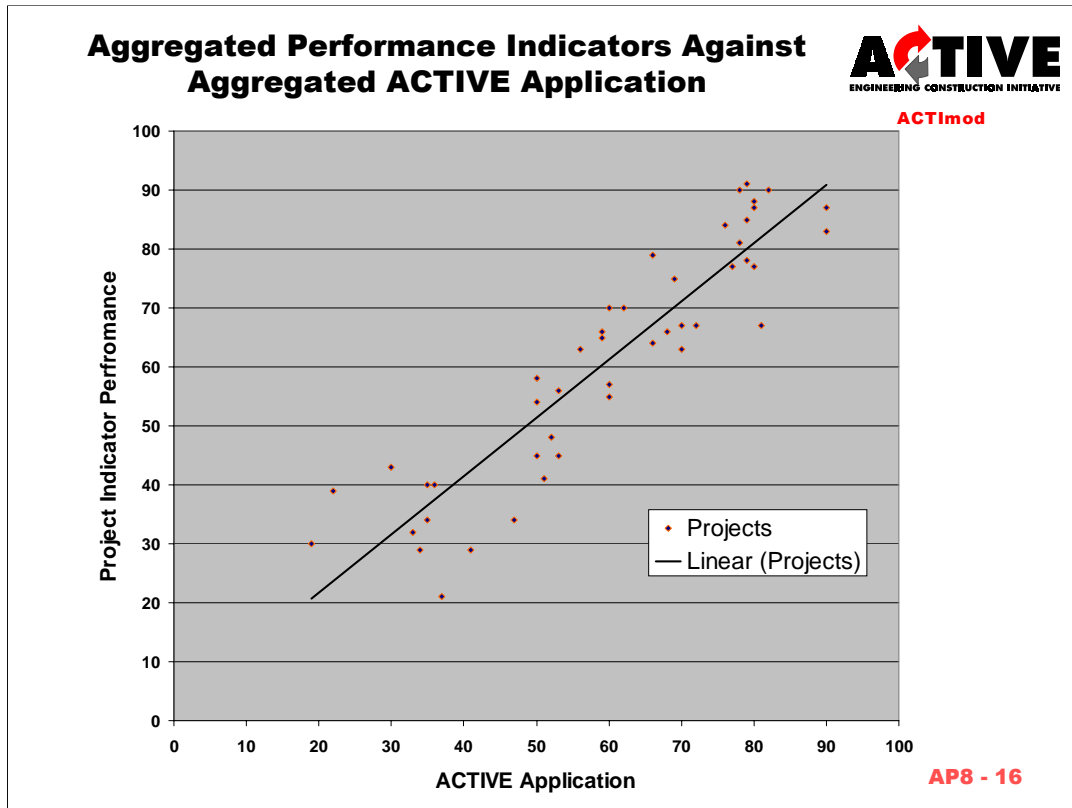
This chart represents the aggregated scores from the ACTIVE review N° 3 Project Performance Indicators. As on the previous chart, the first column against each measure represents the aggregated score for a particular project. The other 3 columns show the average, best and worst benchmarked values for each Measure.

These values have been generated from a 'control group', in this case, data collected from ACTIVE Pilot Projects which have completed ACTIVE Review N° 3.



Whereas the previous two charts give a snapshot representation of the relative performance of their project, this chart allows projects to monitor their performance over the life of the project. Each line on the chart represents aggregated review scores for a particular review milestone.

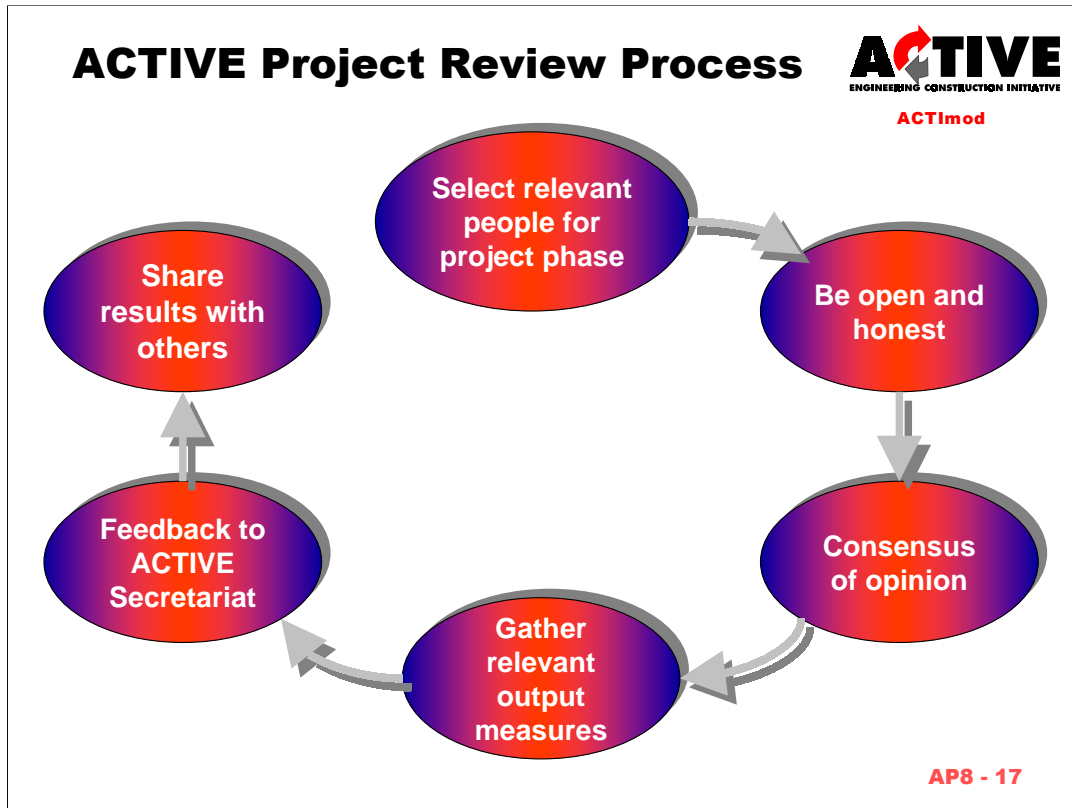
Ideally the lines will grow outwards as the project progresses.



This chart (generated from hypothetical data) essentially compares the application of ACTIVE best practice (ACTIVE Review questionnaire scores) with the project indicator and output measures (project performance indicators) at a particular review milestone.

Each point on the chart represents one project with the Y value being that projects average performance indicator score and the X value being the average ACTIVE review score.

Although, due to the infancy of the ACTIVE project measurement process, this is a hypothetical chart, the limited amount of data collected so far does demonstrate the trend of increased application of ACTIVE best practice leading to improved project performance.



## ACTIVE Approved Third Party Benchmarking Organisations



<b>FPAL</b> (First Point Assessment Ltd)	<i>Supply chain measurement</i>
<b>IPA</b> (Independent Project Analysis)	<i>Benchmarking organisation</i>
<b>ECI</b> (European Construction Institute)	<i>Benchmarking facilities</i>
<b>PDRI</b> (Project Definition Rating Index)	<i>Measures the quality of front end loading</i>

**AP8 - 18**



## Business measures - analysts view



- Execution of corporate strategy
- Quality of strategy
- **Ability to innovate**
- Ability to attract talented people
- Market share
- Quality of executive compensation
- **Quality of major processes**
- Research leadership

AP8 - 19

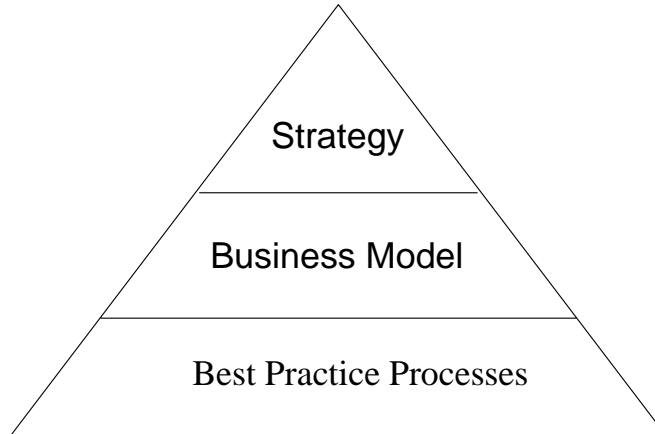
If we examine the mass of business publications, conferences and courses there is a strong emphasis on performance measurement and analysis as an aid to management. A 1998 Ernst & Young report “Measures that Matter” produced by their Centre for Business Innovation in the US looked at the measures that business analysts consider as most important when they assess the investment potential of companies. They identified eight indicators of future success.

### How does your company stack up against these?

In particular, the ACTIVE Principles are targeted at Innovation and Value Enhancing Practices.

Prof Andy Neely, Cranfield University (formerly Judge Institute, University of Cambridge) is one of the leading experts in the UK on measuring business performance and is the author of a book with this title, published by The Economist Books, 1998, ISBN 1-86197-055-2.

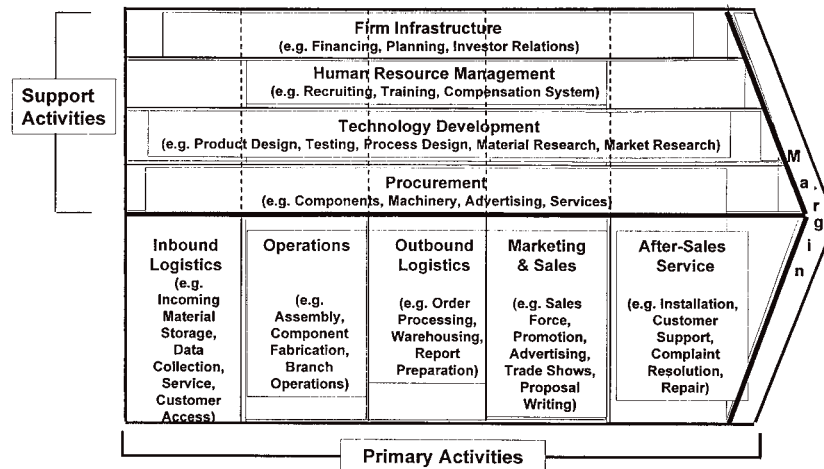
What do successful businesses do?



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Successful businesses have a clear view about the business they want to be in and then formulate a strategy for success achieved through a business model which is underpinned by a collection of best practices.

## What is competitiveness?



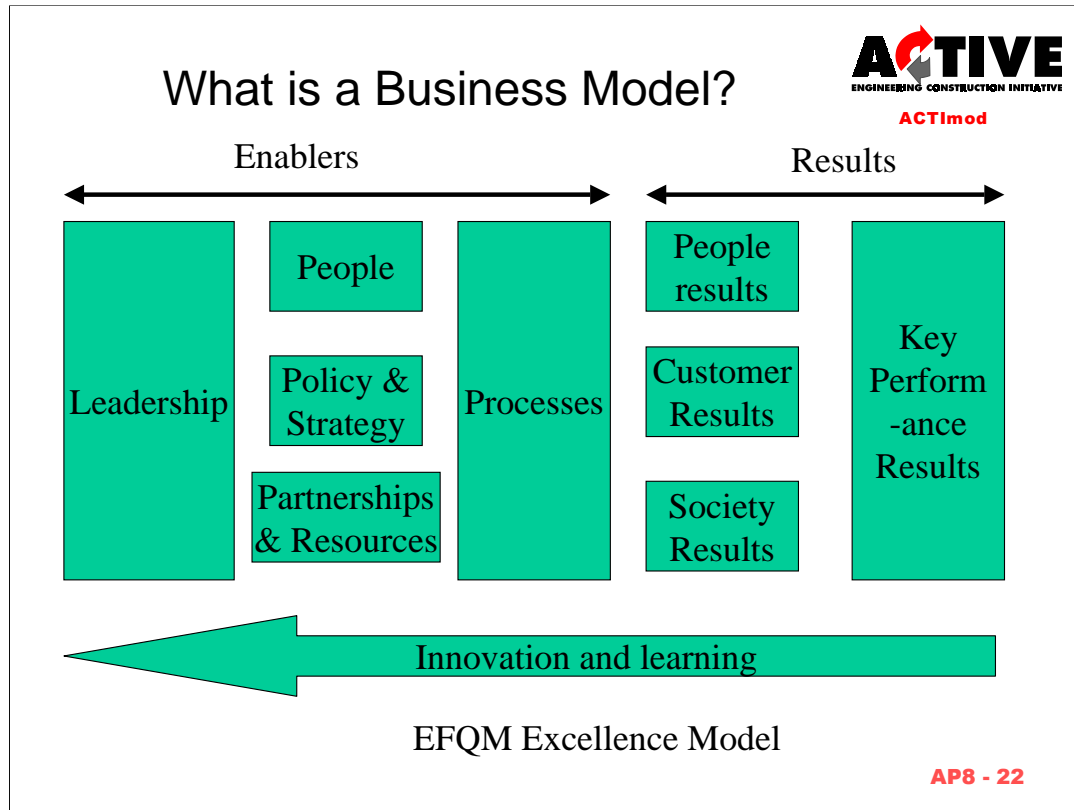
- Companies are collections of discrete **activities**, in which **competitive advantage** resides

*Courtesy of Michael E Porter*

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Michael Porter in his work on competitiveness concludes that all businesses consist of a mix of primary and support activities. He highlights that sustainable competitive advantage comes from a business creating a unique combination of activities which it is difficult for others to replicate in its entirety.

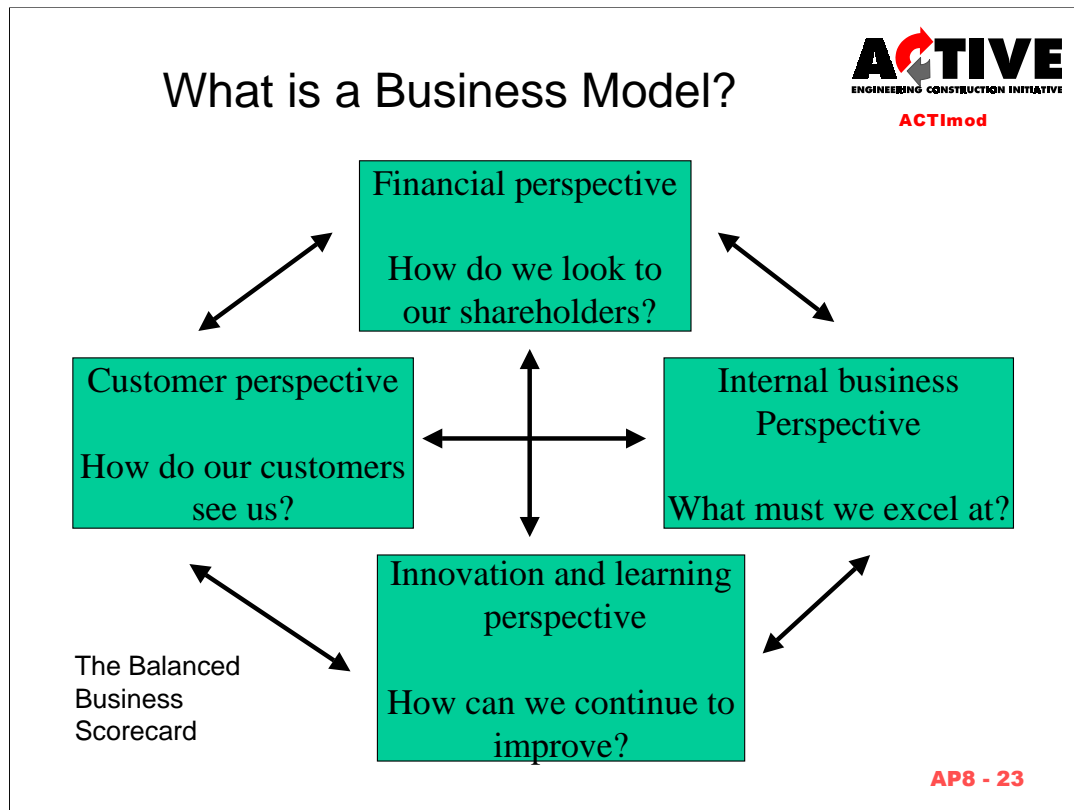
Not only should you be aware of your own company's unique combination of activities but also that of your customer. You will then gain significant insight into how your projects deliver real value to their customers!



Over the past decade two business models have emerged as leaders for the basis on which businesses manage their performance.

### Does your company use a business model?

In Europe, the European Foundation for Quality Management has developed the Excellence Model. In the UK it is administered by the British Quality Foundation. Note - it is now simply called the “excellence model” and can be applied to all forms of organisation and aims to cover all performance issues, not just quality.



In the US, the Balanced Business Scorecard has emerged as the leading business model based on the work of two Harvard professors Norton and Caplan.

**AP8:- Effective Performance Measurement**

**Supporting Value Enhancing Practices:**

VEP 8.1      Performance Benchmarking

VEP 8.2      Contract Monitoring & Measurement

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**VEP 8.1 guidelines:**

- selecting and analysing processes
- identifying the model to act as benchmark
- comparing performance
- implementing an action plan
- Attachment 8.1-A Typical benchmarking criteria

**VEP 8.2 guidelines:**

- identifying procurement goals
- developing a flowchart of procurement cycle activities
- defining performance indicators
- monitoring using key performance indicators
- benchmarking procurement performance

## Effective Performance Measurement



### National & Government support:

- The UK National Benchmarking Index
- Inside UK Enterprise
- Fit for the Future
- The Information Society Initiative

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“There are a number of DTI supported activities which relate to benchmarking”:

**The UK National Benchmarking Index** - based on the Excellence model, facilitated by Business Links and the new Small Business Service and containing a large database of SME performance.

Tel: 0345 567765 for signposting to your nearest Business Link

**Inside UK Enterprise** - a visit programme enabling companies to see at first hand how other companies have successfully managed key business processes.

[www.iuke.co.uk](http://www.iuke.co.uk)

**Fit for the Future** - a joint CBI/DTI initiative to highlight a wide range of best practice activities.

[www.fitforthefuture.org.uk](http://www.fitforthefuture.org.uk)

**The Information Society Initiative** - aimed at improving the understanding and effective use of computer and communications technologies. There is a network of Local Support Centres which can be accessed via Business Links.

[www.isi.gov.uk](http://www.isi.gov.uk)

The DTI web site is: [www.dti.gov.uk](http://www.dti.gov.uk)

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