Fourth Generation Project Management

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Premise

- High growth of PjM profession
- PjM environment has evolved thru four distinct successive generations
- The internet.ecommence “space” presents unique challenges
- Trends:
  - Tools
  - Processes
  - Infrastructure
  - KNOWLEDGE-VALUE SYSTEMS-ESTEEM
The Space

Fourth Generation Project Management Technology

• 1st - Construction
• 2nd - High technology, heavy metal
• 3rd - IT/Software Intensive
• 4th - Internet/Ecommerce/System of Systems
Construction Generation

• Organisation without “walls”
• Specific purpose
• Limited Duration
• Different locations—same processes
• Birth of project management tools
• Physical accomplishments—easily measured


“Heavy Metal”

• Adapted construction tools and PjM processes
• Tangible products - physical measures
• Emphasis on standardised processes
• Little to no growth of PjM processes and techniques into smaller projects
Software Projects

• Heavy metal projects of the past could use alternative tangible measures of accomplishment (Physical Processes)

• SIPs of today (Intellectual Processes):
  - You can’t see it, feel it, taste it, or smell it
  - Thus:
  - If you don’t control the process for doing it, you don’t control the product
Software Intensive Project (SIP) Defined

- One in which SW is the largest segment of:
  - System development cost
  - System development time
  - System development risk
  - System functionality
Management Environment

- Development of knowledge rather than things
- High degree of interdependency between tasks
- Many alternative solutions at the detail level
- Dictates a new management philosophy
  - Flatter organisations
  - High degree of involvement of upper and middle management with primary performer level
  - Relevance of Integrated Project Teams
- Emphasis on metrics
Process Discipline is a basic requirement

- Large software projects are fertile ground for “runaway behaviour”
  - Hard to manage many different variables
  - Technologies not well understood by management
  - Organisational layers suppress “real” status
Process Discipline

“Process discipline provides the freedom for the most talented “x” professionals to be creative by freeing them from the many crises that others have created.”

- Watts Humphrey
Business Case for Process Improvement

US Data & Analysis Center for Software (DACS) State-of-the-Art Report


- Internet URL for PDF copy - http://www.dacs.dtic.mil/techs/roispi2/

- Report documents that many organisations have reported a 7:1 ROI

- Report demonstrates that sound application of software engineering methods provides a competitive edge and increases profitability:
  - Reduces development and maintenance costs
  - Reduces post-deployment defects; thus improves customer satisfaction
  - Reduces schedule cycle time by 30% - 40%
  - Increases products sales through higher quality software
  - Increases repeat business
Software Estimates

Without Historical Data
Variance between + 20% to - 145%
(Mostly Level 1 & 2)

With Historical Data
Variance between - 20% to + 20%
(Level 3)

John Vu, Boeing, keynote talk at SEPG ’97,
“Software Process Improvement Journey (From Level 1 to Level 5)”

(Based on 120 projects in Boeing Information Systems)
Post-release Defects

Average Number of Defects/Kloc

Time

Level 1  Level 2  level 3

John Vu, Boeing, keynote talk at SEPG ‘97, “Software Process Improvement Journey (From Level 1 to Level 5)”

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John Vu, Boeing, keynote talk at SEPG ’97, “Software Process Improvement Journey (From Level 1 to Level 5)” (Based on 120 projects in Boeing Information Systems)
Reduced Staff Support per System = Increased Productivity

John Vu, Boeing, keynote talk at SEPG ‘97, “Software Process Improvement Journey (From Level 1 to Level 5)”

(Based on 120 projects in Boeing Information Systems)
Internet/E-Commerce
“In any given year, I have 200 ongoing projects, most with turnaround of less than 90 days.

I learn about changing requirements from the evening news as often as from line sponsors.

About 85 percent of these projects will fail or be terminated, but the 15 percent that make it will be $10 million revenue streams.

None of the project management philosophies I learned in my 20 years in IT seem appropriate.

It’s like Einsteinian physics—the old rules don’t apply when things approach the speed of light.”*

*Built for Speed, Working Council for Chief Information Officers, Corporate Executive Board 2000
Other Environmental Factors

• Growth of the Project Centric Organisation
• Vastly increased Capability and Complexity of Enterprise and Project Management Software
Market Imperatives

Why?

• Altruistic?

• Pragmatic?
Market Imperatives

Why?

Go forth and populate in the minds of our managers the world's best practice in modern management philosophies through education and training

NO!!!!!!
Market Imperatives

Why?

Build the most powerful, most cost efficient, most business effective, fastest, project management machine, modify it, then push it to the limit in the extremely competitive race for market share!

Market Share

YES!!!!!!!
Market Imperatives

Then comes privatisation...

DAY 1
PROFITS

DAY 2
SHARE PRICE
Privatisation......

• Capital now must come from a very savvy share market - they need to be convinced E-commerce Organisations can deliver on capital invested

• Capital requirements must be justified and business benefits realised

• Bench Marking:
  - Individual organisations may be a small player in the world e-commerce market
  - Comparison with very strong international competitors
## Comparison of Eras

<table>
<thead>
<tr>
<th>Nature of Demand</th>
<th>IT/ERP Era</th>
<th>Internet Era</th>
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<tbody>
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<td></td>
<td>Knowable: digitisation of existing business processes within the organisation</td>
<td>Unpredictable: digitisation of new business processes within and beyond the corporation</td>
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<td>Clarity of Business Needs</td>
<td>Well-known, detailed requirements defined up front</td>
<td>Fluid, general requirements defined and clarified through iterative development</td>
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<tr>
<td>Technology Market Place</td>
<td>Dominated by relatively few, well-known players</td>
<td>Highly fragmented</td>
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<td>Key IT Challenges</td>
<td>* Minimising variations to system design and project scope</td>
<td>* Clarifying system requirements</td>
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<tr>
<td></td>
<td></td>
<td>* Integrating systems &amp; components into networks</td>
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<td></td>
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<td>* Exploiting new technologies quickly</td>
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<td></td>
<td></td>
<td>* Accommodating unpredictable variations</td>
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<td></td>
<td></td>
<td>* Developing for usability by external, untrained constituencies</td>
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New-Space Project
Imperatives

• Speed - First to market
• Payback - Business Benefits
The Space

Project Management Environment

• Goal oriented (business benefits), rather than task oriented
• High degree of outsourcing
• Flexible, improvisational - not so hung up on measurement and process
• Inter-Global Team “Facilitation”
• Influencing Rather than Control
• Creating a “Zone” of Creative Tension
Building the “Machine”

- Development Model
- Commercialisation
- Tools and Techniques
- Accreditation
- The Human side of the machine
- Change Management
Project Management Initiatives

Development Life Cycle Model
Project Management Initiatives

Development Model

• Purpose: Establish a flexible project development lifecycle in which to progress projects
• Premise: moving marketplace and changing business needs
• Vision: FAST, ON TIME, EVERY TIME
Project Management Initiatives

Development Model

Objectives

• Consistency across business units
• Standard milestone & earned value reporting across various programs of work
• Cost efficiency through standard data elements and tool sets
• Simplified processes and procedures
• Standard resourcing allocation model
• RAPID DELIVERY OF PROJECTS
Project Management Initiatives

Project Tools and Techniques

- WBS work definition
- Responsibility Assignment Matrix
- Integrated Scheduling
- Budgeting/Estimating
- Earned Value Reporting
- Variance Analysis
- Cost/Schedule/Scope Baseline Management
Project Management Initiatives

The Human Side of the “Machine”

• The “vision” for the PjM
• Esteem and Value Systems
Project Management Initiatives

The PjM

- PjMs evaluate the performance of the team members
- Are fully accountable for the project outcomes
- Have budget control
- Have the power to move mountains within the terms of reference and scope
- Operate without confusion about priorities and roles
- Are not distracted by the need to continually rejustify the need for the project
- Control visible decision making about the project
Project Management Initiatives

Project Management Accreditation

• Competency Progression Based on PMBOK competencies

• Organisation Specific PjM Proficiencies Achievement based on Business Domains
Esteem and Value Systems

- Clearly articulated new value systems
- Revising Traditional HR policies
- Flexible working practices
- Creating the PjM as “CEO” mentality and practice
Change Management

- The environment, by its very nature, is extremely dynamic
- Challenge is bringing a degree of order to “chaos”
- Changing the culture - creating that “zone of creative tension”
- Transition from functional to “project centric” is a project in and of itself, and should be managed accordingly
Conclusion

- Competition will only become fiercer. Historic advantages will be continually challenged by new competitors and technologies.
- The future success depends on the degree to which organisations embrace and employ aggressive project management strategies and knowledge systems.
- And, they are doing it!!!!!!!!!!