



International
Business School
Suzhou at XJTLU
西浦国际商学院

Fundamentals of Project Management

MSc Project Management 2018/2019

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Lecture 11

Methods & Software



Lecture 11

- 1) Project Management Methodologies
- 2) Project Management Software



Lecture 11 – PM Methodologies

- Many ways lead to Rome
 - Different ways to achieve success



Lecture 11 – PM Methodologies

1. Traditional PM (Waterfall, CPM, CCM)
2. PMBOK
3. AGILE (SCRUM, Kanban, XP, APF)
4. Prince2 (**Pr**ojects **in C**ontrolled **E**nvironment)
5. Change Management Methodologies
6. Process oriented Methodologie
7. Others



Lecture 11 – PM Methodologies

1. Traditional PM is ,traditional‘

Waterfall

Critical Path Method (CPM)

Critical Chain (CCPM)

All sequential (step by step)



Lecture 11 – PM Methodologies

Waterfall

Logical, sequential sorting of activities from conception to delivery, often used in large scale (software/construction) development projects.



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Advantages

- Logical order
- Strict logic
- Easy to replicate
- Reduce risk by thorough planning

Disadvantages

- Limited room for change
- Extensive pre-planning



Lecture 11 – PM Methodologies

Critical Path

Adds priorities to a flow of activity using their interdependencies to create a path from beginning to end.



Lecture 11 – PM Methodologies

Advantages

- Logical order
- Adds flexibility
- Focus on CP allows to adjust duration

Disadvantages

- Hard decisions
- Added flexibility alters risk profile



Lecture 11 – PM Methodologies

PMBOK

Breaking the project into the five process areas as per PMI definition (initiating, planning, executing, controlling, and closing)

Not a methodology per se but agreed standards of handling different stages of a project.



Lecture 11 – PM Methodologies

AGILE

Focusses on continuing, iterative interaction with the customer to get the job done.

Value delivery and collaboration are paramount.

Different frameworks (e.g. SCRUM, Kanban...).

Lecture 11 – PM Methodologies

Spotlight on AGILE

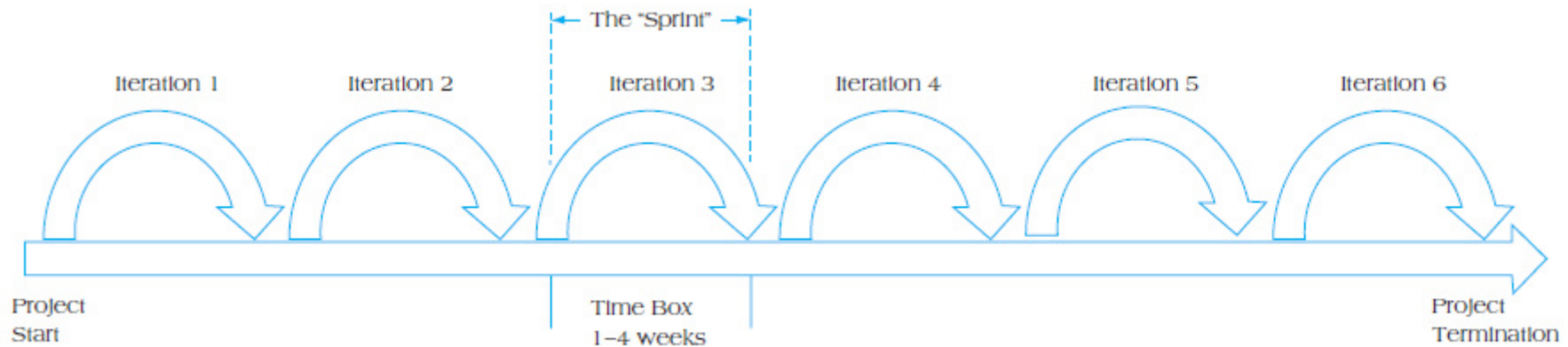


FIGURE 11.2 Scrum Process for Product Development

Source: Pinto (2016)



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Advantages

- Direct interaction with actual user(s)
- Rapid response
- Flexible approach and outcome
- Target oriented, not process oriented (the aim justifies the means)

Disadvantages

- Potential large changes enroute
- Splitting the project in small 'sprints' (SCRUM)
- High effort and input (continuously 'on the line')



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SCRUM

- SCRUM Master clears any obstacles to work.
- Daily meetings and exchange.
- Short ,sprints‘ of development.
- Iterative approach, feedback alters next step(s).

Lecture 11 – PM Methodologies

Spotlight on AGILE

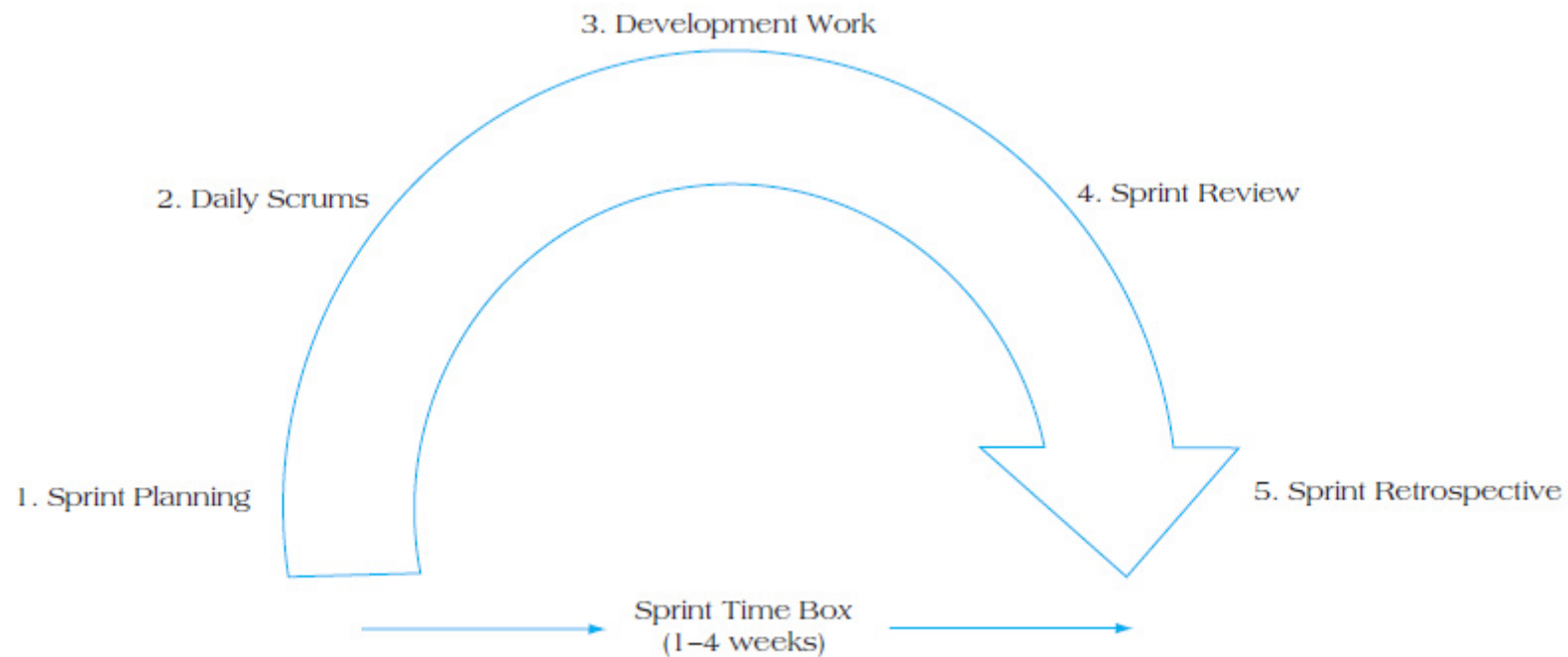


FIGURE 11.4 Stages in a Sprint

Source: Pinto (2016)



Lecture 11 – PM Methodologies

Spotlight on AGILE

No change DURING a sprint that endanger the sprint goals!

No modification of Quality!

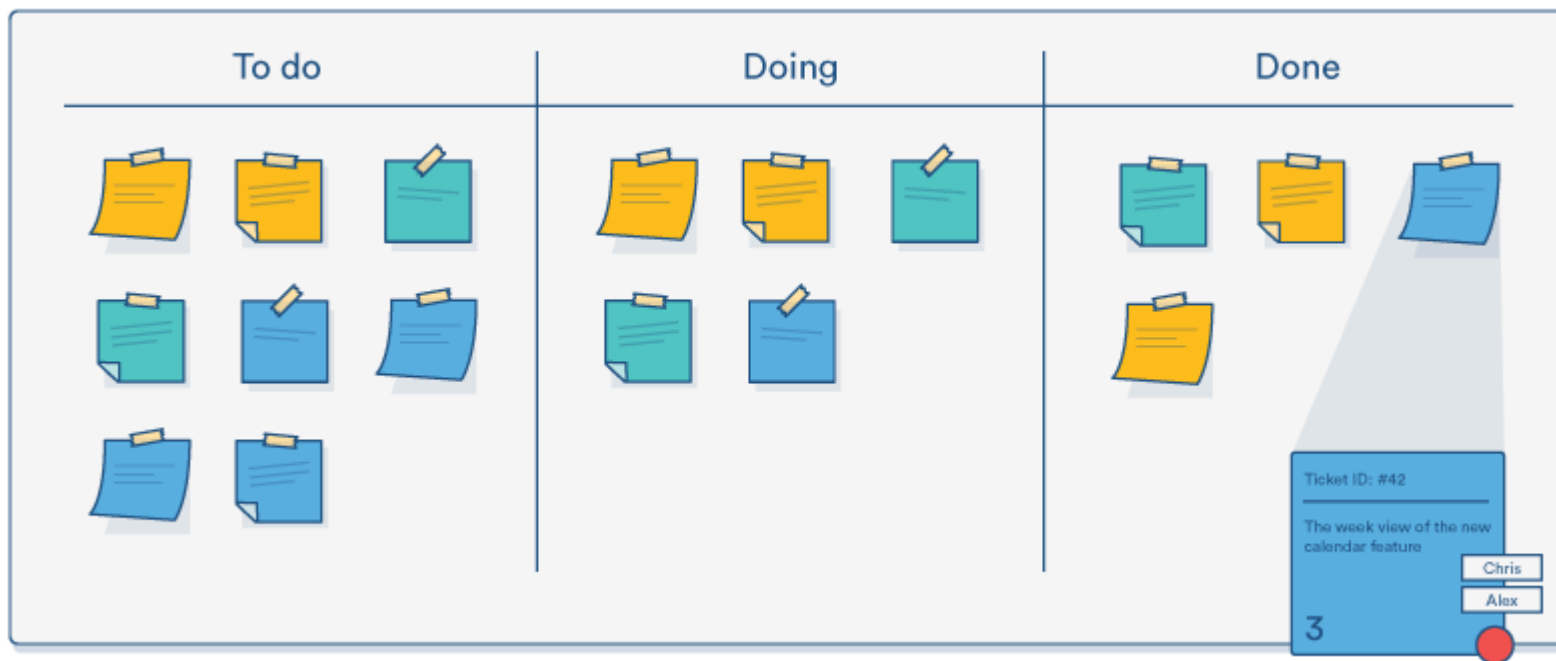
Scope remains open for change all the time.

Beware of Scope Creep!

Potentially expensive (e.g. continuous engagement and testing)

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Kanban



Source: <https://de.atlassian.com/agile/kanban>



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- Developed by Toyota for reducing stock (Just in Time Logistics).
- Very direct push/pull approach.
- Creates chains of interaction with causal action-reaction relationships.



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Kanban Pro:

- Ideal if steady flow and output are important.
- Visual approach – immediate overview (colourcoded cards)
 - Simple (little training)

Kanban Con:

- Very Static (predefined action-reaction)
- Internal use (limited use for external communication)
 - Extensive documentation



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Extreme Programming (XP) and Adaptive Project Framework

Like SCRUM (sprints)

Change ,within‘ sprints

APF: Focus on requirement (requirement breakdown structure - RBS)



Lecture 11 – PM Methodologies

Extreme Programming (XP) and Adaptive Project Framework

Floating scope

Change inherent

Constant Review



Lecture 11 – PM Methodologies

Prince 2 (**P**rojects **i**n **C**ontrolled **E**nvironment)

- UK Government Standard
- Product-based planning approach
- High level activities (e.g. resource allocation) performed by a „Project Board“
- PM performs lower level activities (e.g. Scheduling)



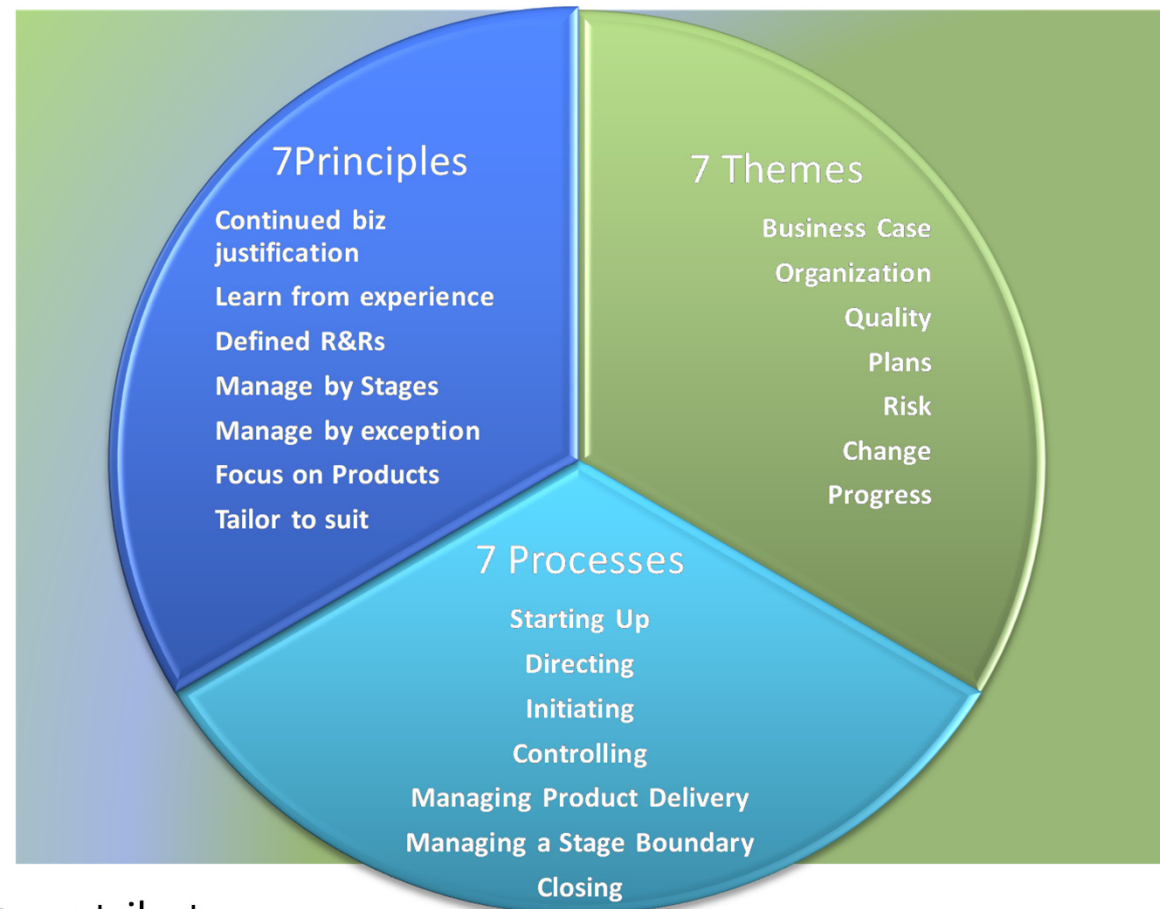
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7 Roles

7 Principles

7 Project Phases

Lecture 11 – PM Methodologies



Source: Unknown contributor



Lecture 11 – PM Methodologies

7 Roles

1. The Customer (pays)
2. The user (of the end product)
3. The supplier (of knowledge to complete the Project)
4. The Project Manager (organises, plans and oversees)
5. The Project Team (do the thing)
6. The Team Manager(s) (oversee the thing)
7. The administrator (coordinator, meetings...)



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The Project Board

Contains multiple people whose job is to ensure of the following:

Project viability (cost-benefit analysis)

Meet user needs

Project is a realistic & practical solution



Lecture 11 – PM Methodologies

7 Principles

- 1. Projects must have business justification.** (clear need, defined customer, realistic benefits, and a detailed cost assessment.
- 2. Teams should learn from every stage.** Continuous “lessons learned”.
- 3. Roles and responsibilities are clearly defined.**
- 4. Work is planned in stages.**
- 5. Project boards “manage by exception.”** establish baseline(time, cost, risk, and scope); delegate daily oversight to PM
- 6. Teams keep a constant focus on quality.** Continuous scope controlling.
- 7. The approach is tailored for each project.**



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7 Project Phases

1. Starting (Proposal)
2. Directing (Pre-Project)
3. Initiating (KickOff)
4. Controlling a Stage (PM)
5. Delivery (Controlling)
6. Stage Boundaries (Progress Review)
7. Closure



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- **Pros:** Simplified performance appraisals and corporate planning, as well as mitigating against certain risks.
- **Cons:** Cumbersome due to documentation requirements, limited change robustness.



Lecture 11 – PM Methodologies

Change Management:

- Methodologies linked to actual „Change Management“
- Managing Risk and „Controlling Change“ are paramount

Change and Risk:

- Increasing change alters risk profile and moves the risk canvass
- Change control to limit risk floating



Lecture 11 – PM Methodologies

Change Management

„Preparing and supporting individuals, teams and organisations adapt to organisational change“

„Change is the new constant“

Reasons:

Globalisation, Social Media, Technological and Societal Development...

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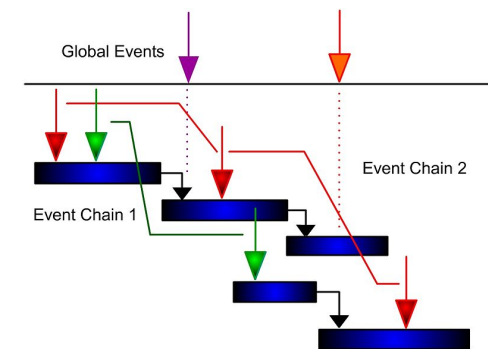
Change Management PM Methodologies

Event Chain Methodology (ECM)

Potential risks outside the current risk canvass.

Adjusting for bias in original plan.

“What if” modelling of events impacting on the Project.



Source: Ken McKinley

Extreme Project Management (XPM)

Opposite of Waterfall.

Continuous flux (change)

Ideal for (extremely) short Project Cycles

BUT: Needs to fit in grander scale goal (Portfolio?)



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Process oriented Methodologies

- Lean
- Six Sigma
- Lean Six Sigma
- Process-Based Project Management



Lecture 11 – PM Methodologies

Lean

Streamlining
Eliminate Waste
More with less

Six Sigma

Statistics and Data
DMAIC
Process Quality
Eliminate Errors

Process-Based PM

Aligns project objectives with a larger perspective, keeping the Project and its goals strategic at all times.

Integrating Portfolio approach and “bigger picture” at all stages.



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Lean Six Sigma

Combines Lean (no waste) with Six Sigma (no errors) in a single approach.

DMAIC (*Define, Measure, Analyse, Improve and Control*) approach



Lecture 11 – PM Methodologies

Others: PRiSM

PRojects **i**ntegrating **S**ustainable **M**ethods

Developed by GPM (greenprojectmanagement) to incorporate Sustainability into a repeatable process for large scale Projects.

Requires accreditation

Lecture 11 – PM Methodologies

Source: GPM



Lecture 11 – PM Methodologies


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PRISM

The Six Principles of PRISM

- 1. Governance & Accountability** - Recognize the essential rights of all to healthy, clean and safe environments, equal opportunity for remuneration, ethical procurement, and adherence to rule of law.
- 2. Ethics & Decision Making** - Support ethical behavior within the organization along with decision making that shows respect for universal principles through identification, mitigation, and the prevention of adverse short and long-term impacts on society and the environment.
- 3. Integrated & Transparent** - Foster the interdependence of economic development, social integrity, and environmental protection in all aspects of governance, practice, and reporting.
- 4. Principles & Values Based** - Conserve and enhance our natural resource base by improving the ways in which we develop and use technologies and resources.
- 5. Social & Ecological Equity** - Respond to human vulnerability in ecologically sensitive areas and population centers through demographic dynamics.
- 6. Economic Prosperity** - Adhere to fiscal strategies, objectives, and targets that balance the needs of stakeholders, including immediate needs and those of future generations.

The PRISM Project Lifecycle

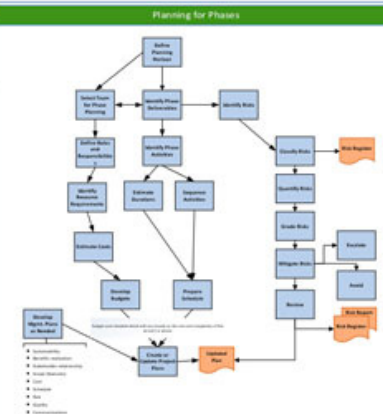


Phases & Objectives

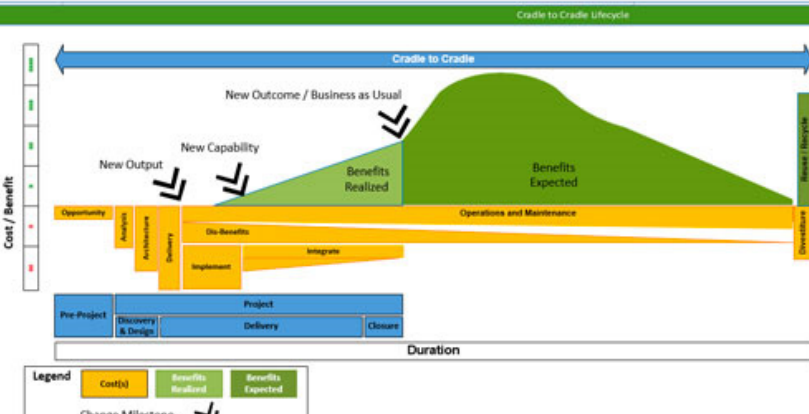
- Pre-Project**: Project objectives are identified, project sponsor and project manager partnership is established, business case development begins and prior issues learned are reviewed.
- Discovery**: Requirements are defined, the business case is aligned to organizational systems, sustainability impacts are identified, analyzed, and transformed into opportunities to create social, environmental and economic value.
- Design**: Solution is designed, sustainability analysis is refined, and acceptance criteria are established.
- Delivery**: Produce deliverables to achieve expected outcomes and benefits.
- Closure**: Close out the project, facilitate adoption and integration, and conduct change/learn of the planning.

Workflow

Planning for Phases



Cradle to Cradle Lifecycle



PRISM™ Version 4.0

GPM Driving Sustainable Business Change

www.greenprojectmanagement.org/prism

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GPM Global 2009-2017

SUSTAINABLE DEVELOPMENT GOALS ADVOCATES



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Pros

- Walk the talk
- Improve Stakeholder engagement
- Gain trust
- Reduced environmental footprint
- Savings
- Ties in with other “Green” stuff (UNGC)

Cons

- Does not work isolated
- Needs all level buy in
- Costs time and money
- Smaller Association (Clout)



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Others: P3.express

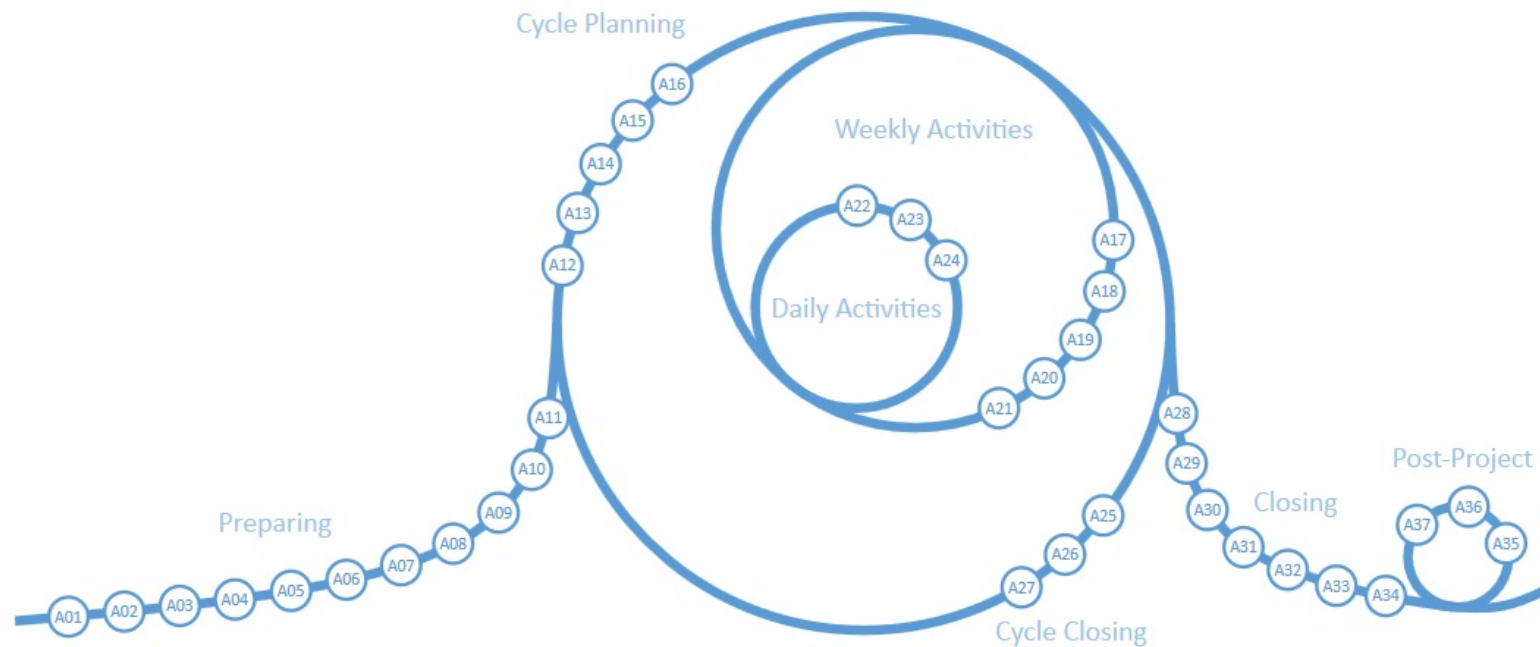
New Framework (still developing)

AGILE and PMI/PrinCe2 combination

KISS Principle

- SME tool
- Open Source

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Lecture 11 – PM Methodologies

- Pragmatic
- Focus on Planning and Control
- Facilitates Stakeholder Engagement



Lecture 11 – PM Methodologies

We are in talks to get accredited and offer our students easier exams for credentials!



Lecture 11– PM Software

PM Software – MS Project and beyond



Lecture 11– PM Software

Marketleader: MS Project

Pros

- Readily Available
- Intuitive
- Integrates into known Office Environment
- Stable

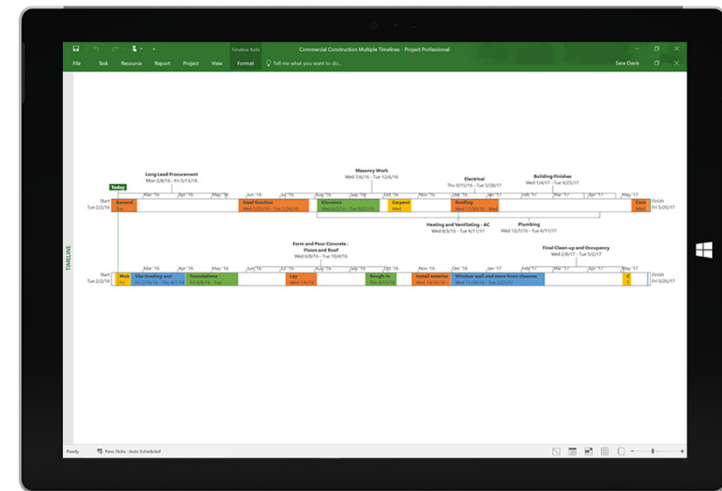
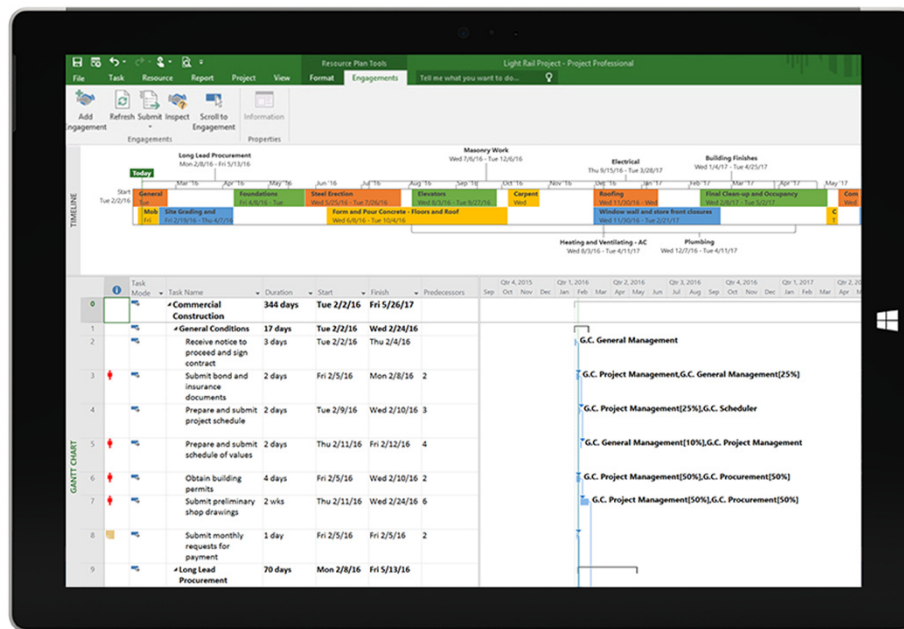
Cons

- Price
- No mobile apps
- Version (compatibility)
- MAC version only WEB based

One-Stop Solution

Lecture 11– PM Software

Familiar Look and Feel across the office environment increases productivity and usability.





Lecture 11– PM Software

Challenger 1: Wrike

Pros

- Minimalist UI approach
- Mobile apps
- Multiple integrations and tools for collaboration
- Price
 - 9.80 USD/month
 - 124 USD/month (Pro)

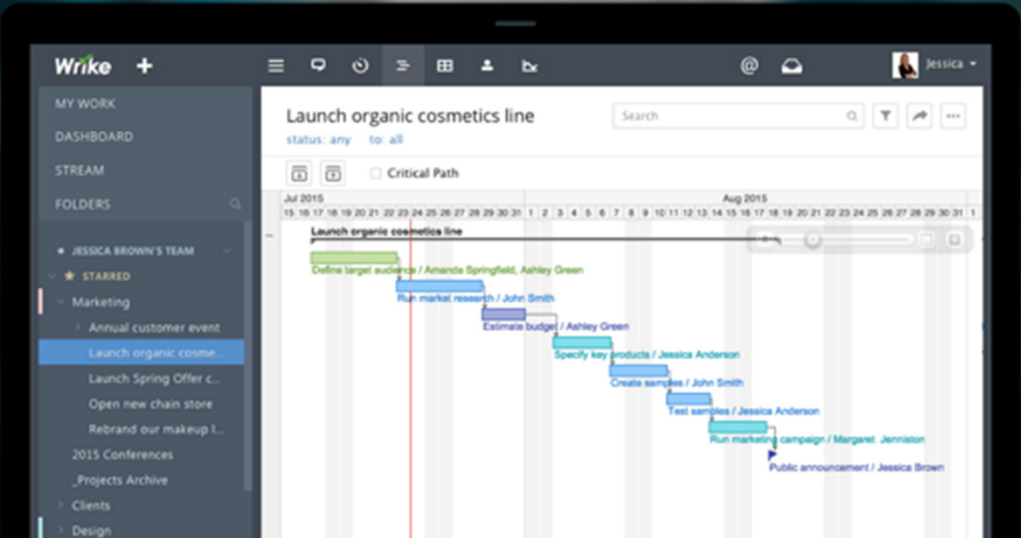
Cons

- Compatibility?
- Not always simple or intuitive
- Browser based
- Occasionally laggy

Lecture 11– PM Software

Advanced management features

Wrike provides interactive Gantt charts with dependencies and critical path, workload view, baseline reports, resource planning, and much more.



The screenshot displays the Wrike software interface. On the left is a navigation sidebar with sections for 'MY WORK', 'DASHBOARD', 'STREAM', and 'FOLDERS'. Under 'FOLDERS', there is a tree view for 'JESSICA BROWN'S TEAM' containing 'STARRED' items like 'Marketing', 'Annual customer event', and 'Launch organic cosine'. The main area shows a Gantt chart titled 'Launch organic cosmetics line' for the period of July and August 2015. The chart includes a 'Critical Path' indicator and several task bars with dependencies. The tasks are: 'Define target audience / Amanda Springfield, Ashley Green' (green bar, Jul 15-21); 'Run market research / John Smith' (blue bar, Jul 21-28); 'Estimate budget / Ashley Green' (purple bar, Jul 28-Aug 4); 'Specify key products / Jessica Anderson' (teal bar, Aug 4-11); 'Create samples / John Smith' (orange bar, Aug 11-18); 'Test samples / Jessica Anderson' (light blue bar, Aug 18-25); 'Run marketing campaign / Margaret Jennison' (dark blue bar, Aug 25-31); and 'Public announcement / Jessica Brown' (red bar, Aug 31).



Lecture 11– PM Software

Challenger 2: ProjectLibre

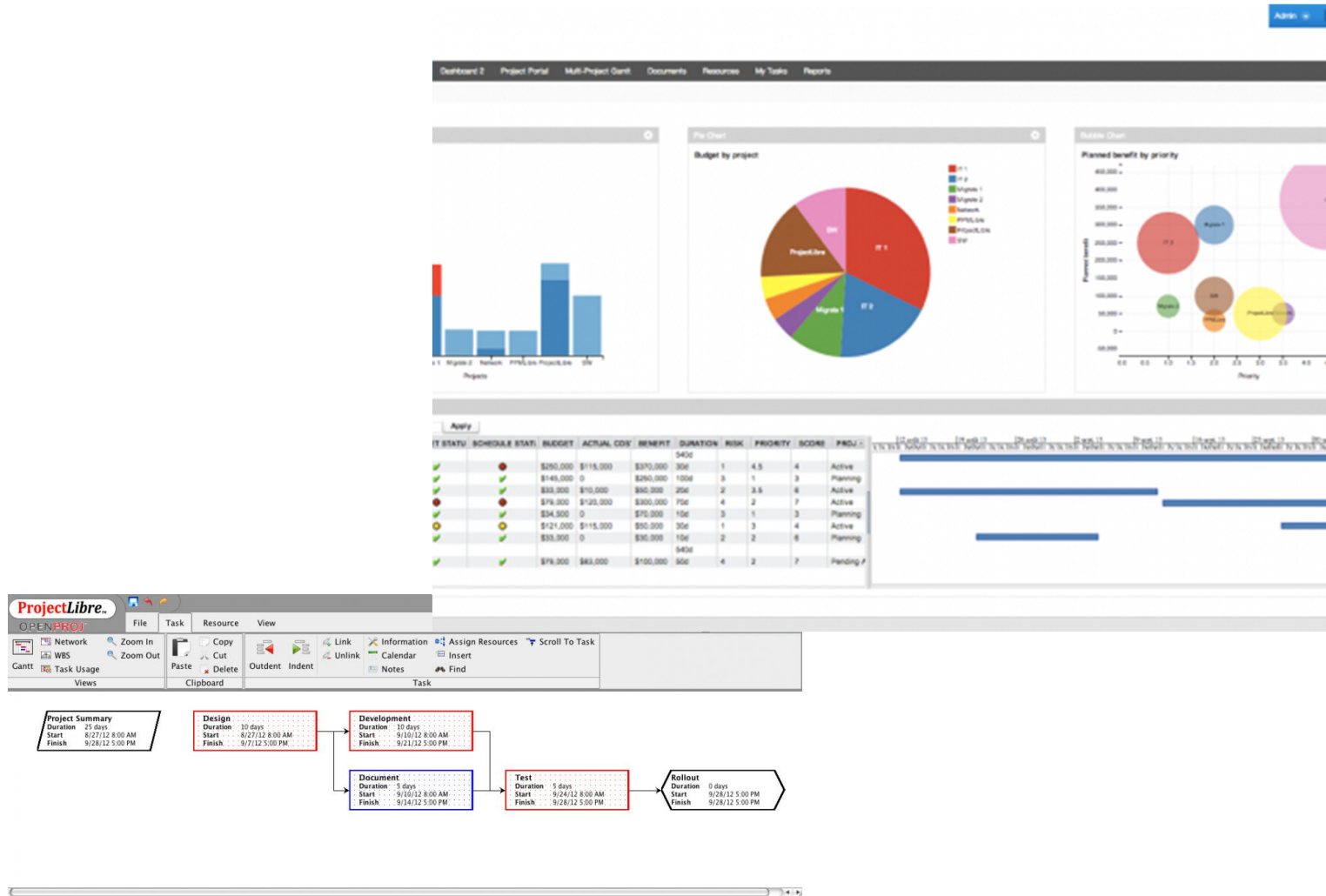
Pros

- Community (SA) and Cloud edition (Browser based)
- Closely emulates MS Project
- Platform independent

Cons

- Price ?
- Close is not close enough (manual vs automatic)
- High learning curve

Lecture 11– PM Software



The screenshot displays the ProjectLibre software interface. At the top, there is a navigation bar with options like 'Dashboard', 'Project Portal', 'Multi-Project Gantt', 'Documents', 'Resources', 'My Tasks', and 'Reports'. Below this, the main workspace is divided into several sections:

- Budget by project:** A bar chart showing budget distribution across different projects.
- Pie Chart:** A pie chart titled 'Budget by project' showing the relative budget for various projects like 'ProjectLibre', 'Migra 1', and 'Migra 2'.
- Bubble Chart:** A bubble chart titled 'Planned benefit by priority' where the size of the bubbles represents planned benefit and the position on the x-axis represents priority.
- Table:** A table with columns for 'IT STATUS', 'SCHEDULE STAT', 'BUDGET', 'ACTUAL COV', 'REVENUE', 'DURATION', 'RISK', 'PRIORITY', 'SCORE', and 'PROJ.'. It lists several projects with their respective metrics.
- Gantt Chart:** A horizontal bar chart showing task durations and dependencies over time.

At the bottom, the ProjectLibre menu bar is visible, including 'File', 'Task', 'Resource', and 'View'. Below the menu bar, there is a 'Project Summary' box and a Gantt chart showing task dependencies and durations:

- Project Summary:** Duration: 25 days, Start: 8/27/12 8:00 AM, Finish: 9/26/12 5:00 PM.
- Design:** Duration: 10 days, Start: 8/27/12 8:00 AM, Finish: 9/7/12 5:00 PM.
- Development:** Duration: 10 days, Start: 9/10/12 8:00 AM, Finish: 9/21/12 5:00 PM.
- Document:** Duration: 5 days, Start: 9/10/12 8:00 AM, Finish: 9/14/12 5:00 PM.
- Test:** Duration: 5 days, Start: 9/24/12 8:00 AM, Finish: 9/26/12 5:00 PM.
- Rollout:** Duration: 0 days, Start: 9/26/12 5:00 PM, Finish: 9/26/12 5:00 PM.



Lecture 11– PM Software

Challenger 3: Basecamp

Pros

- Price is per business, not user
- Excellent customer support
- Simple UI, small learning curve
- Collaboration (Chat)
- Document sharing

Cons

- Browser based
- Price (1000 USD/year, Free for educational sector)
- No native Gantt-chart (needs extension)



Lecture 11– PM Software

Challenger 4: Project in a Box

Pros

- No Framework dependence
- Pricing (Free – 4000+ GBP, 99GB + 15 GBP PRinCE 2)
- Mobile (runs from USB)
- Flexible

Cons

- Compatibility ?
- Two programmes (PiaB and Planner)

Lecture 11– PM Software

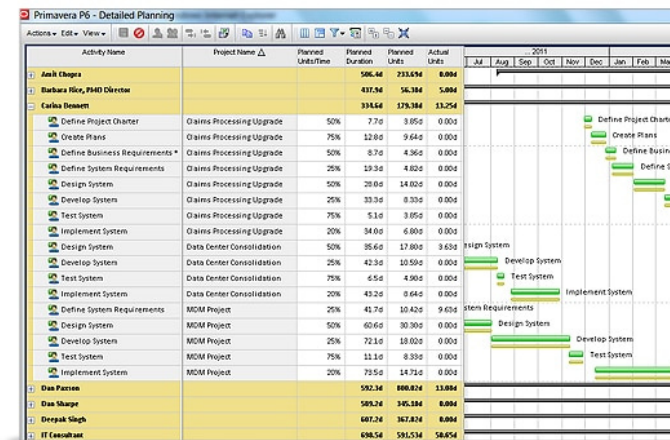
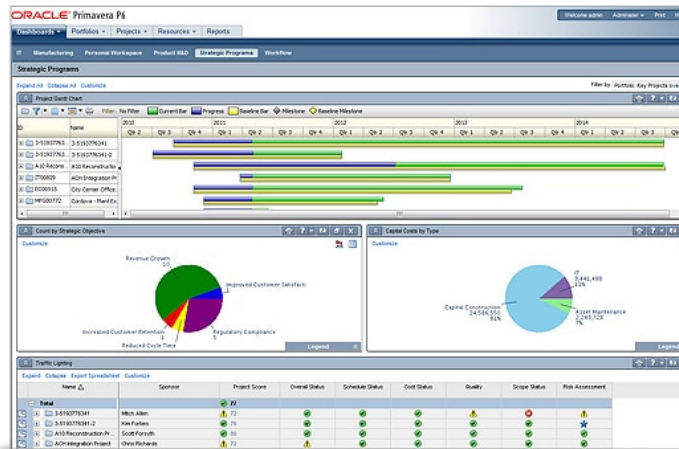


The screenshot displays the PRINCE2 software interface, which is used for project management. It features a central workspace with a PRINCE2 Method Template diagram, a Gantt chart, and a Risk Summary chart. The interface includes a menu bar, a toolbar, and a sidebar with navigation options like Home, Processes, Library, and Favorites. The PRINCE2 Method Template diagram shows the project lifecycle from Starting up a Project to Managing Product Delivery. The Gantt chart displays project tasks and their durations. The Risk Summary chart shows the distribution of risks across different categories.

Lecture 11– PM Software

Challenger 5: Oracle Primavera

- Focusses on Enterprise Portfolio Management & PMO
- Integrative Bottom Up (all on same page)
- Browser based





Lecture 11– PM Software

Challenger 6: Project Kickstart

Pros

- Export and Integration to MS Office
- Clear UI increases usability
- Price (199 USD Std., 299 USD Pro)

Cons

- Compatibility ?
- No apps
- Company was just merged
- Current version is old...

Lecture 11– PM Software

Adjust your project schedule in the Gantt chart

First, set the project start date, and edit how many days a task will take. You can link and unlink tasks. To shorten the project, you can make tasks concurrent. If you stretch or move a task, linked tasks will move with it. For more tips, see the Advisor.

Quickly link tasks

ENTIRE PROJECT AUTOMATICALLY UPDATES

Dependency Gantt Chart

Exports

#	Task Name	Days	Start	Finish
1	Secure technology	40	1/1/08	2/25/08
2	Document concept (inc. legal)	14	1/1/08	1/16/08
3	Buildtest Alpha prototype	30	4/15/08	2/25/08
4	De			
5	Set p			
6	Re			
7	De			
8	Gr			
9	Gr			
10	Secu			
11	DE			
12	Recru			
13	Raise funds	60	3/28/08	6/11/08
14	Begin initial operation	21	4/8/08	5/10/08
15	Hire key employees	20	4/8/08	5/5/08
16	Secure site	10	4/23/08	5/6/08
17	Publish, network, advertise	1	4/11/08	4/11/08
18	Evaluate markets for technology	58	4/8/08	6/24/08
19	Research applications	55	4/14/08	6/27/08
20	Interview market Gurus	12	4/8/08	4/23/08
21	Buildtest Beta prototypes	30	4/17/08	5/26/08
22	Finalize goals	32	5/12/08	6/24/08
23	Review goals, cns, plans, etc.	2	5/12/08	5/13/08
24	Sign contracts, hire employees	30	5/14/08	6/24/08
25	Begin operations	1	6/25/08	6/25/08

Export to: Microsoft PowerPoint



Lecture 11– PM Software

Challenger 7: Asana

Pros

- Integrates with many tools (GoogleDrive, GitHub etc.)
- Price (Free/ 120 USD)

Cons

- Browser based
- No Gantt
- Compatibility?



Lecture 11– PM Software

- Test your options
- Learn PM, not the sector!
- Learn from Pro users of your Project
- Get qualifications (PRinCE2, GPM, P3.express, PMI ...)



Lecture 11 – PM Methodologies

Sources

Gray, C.F., Larson, E.W., 2006/2012. Project management: the managerial process, 3.ed./5.ed, McGraw-Hill, Boston.

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