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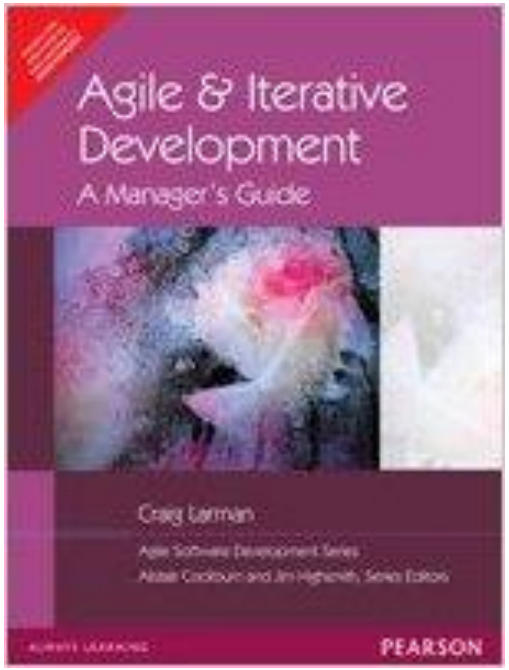
Agile Metrics & Tools

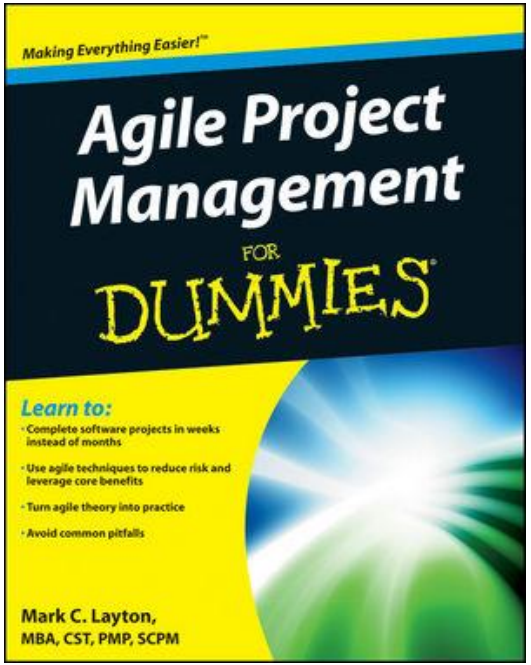
- Prof K G Krishna

Text/Reference Books

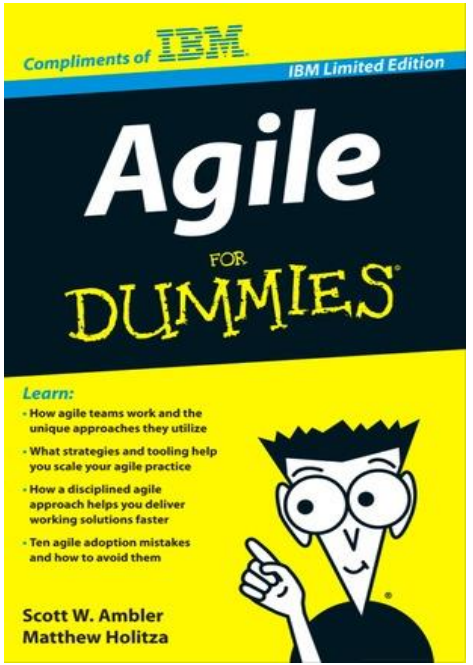
T1



T2



Compliments of IBM

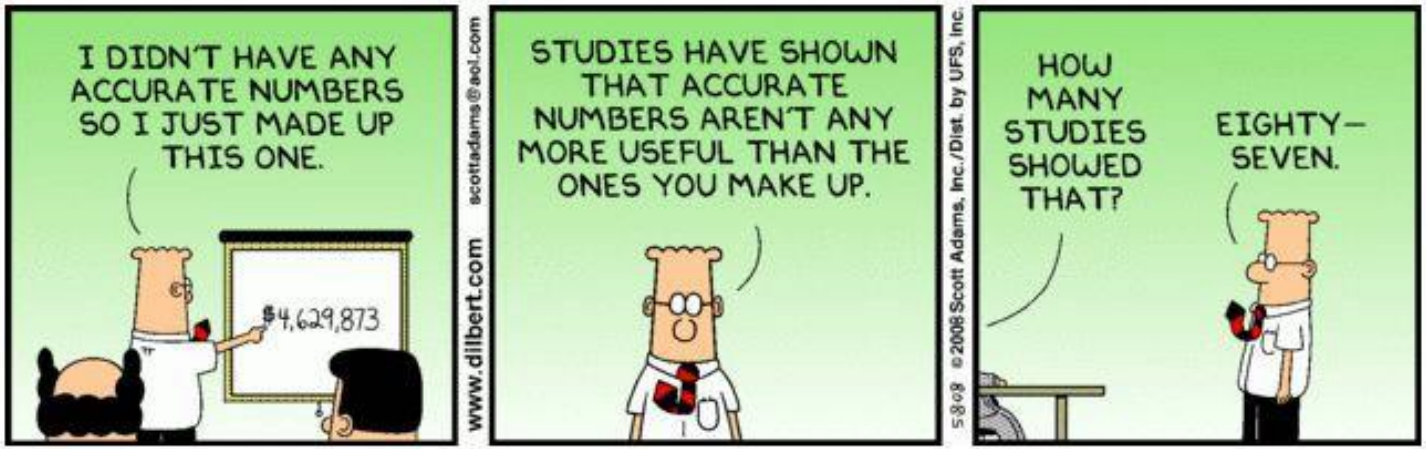


➔ As this field is evolutionary, the student is advised to stay tuned to the current and emerging practices by referring to their own organization's documentation as well as Net sources

Topics

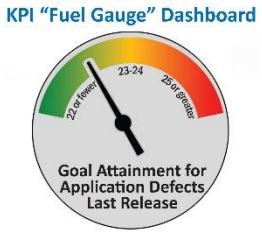
Agile Metrics & Tools

- Overview of Agile Metrics
- Tools for Metrics



Metrics – Track Performance / Progress

- Metrics is a Measure or combination of Measures for quantitatively assessing, controlling or improving a Process or Product or Team.
- In Agile, We use Metrics for Planning, Inspecting, Adapting and Progress Tracking of Software Development
- Metrics – Quantity /w Unit of Measure; Ratio (e.g. Schedule Overrun, Effort Overrun, Defect Discovery (rate), Project Size (Stories, Components,…), etc.
- Metrics (Term adopted in Software Industry) vs. Measures vs. Indicators (Leadng/Lagging) / KPI (strategic, tied to an objective or goal, trend, range,…)
- Metrics are Relative (need Baselining) and Organization/Project/Product-centric
- Typical Metrics in Software Projects:
  - Success metrics
  - Time and Cost metrics
  - Satisfaction metrics



Metrics must be Actionable (➔KPIs)

Metrics vs. KPIs – A Comparison	
Metrics provide information that can be digested.	**KPIs offer comparative insights that guide future actions.**
Metrics are extracted and organized by activity or process.	**KPIs are initiated by high-level decision makers.**
Metrics can be viewed historically, but do not identify future action.	**KPIs incorporate Goals and Objectives.**
Metrics are static, and once extracted do not change.	**KPIs can be evaluated and reset over time using the SMART methodology.**

Source: appdevelopermagazine.com

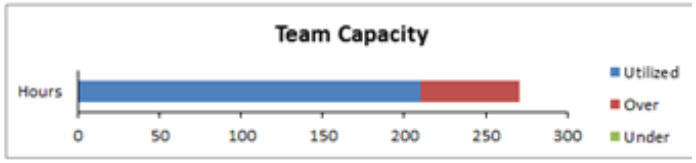
Ten *Key Metrics* for Agile Project Management

1. **Sprint goal success rates:** A successful sprint should have a working product feature that fulfills the sprint goals and meets the scrum team's definition of done: developed, tested, integrated, and documented.
2. **Defects:** Defects are a part of any project, but agile approaches help development teams proactively minimize defects
3. **Total project duration:** Agile projects get done quicker than traditional projects.
4. **Time to market:** *Time to market* is the amount of time an agile project takes to provide value,
5. **Total project cost:** Cost on agile projects is directly related to duration
6. **Return on investment:** *Return on investment (ROI)* is income generated by the product, less project costs
7. **New requests within ROI budgets:** Agile projects' ability to quickly generate high ROI provides organizations with a unique way to fund additional product development.
8. **Capital redeployment:** On an agile project, when the cost of future development is higher than the value of that future development, it's time for the project to end.
9. **Satisfaction surveys:** A scrum team's highest priority is to satisfy the customer.
10. **Team member turnover:** Agile projects tend to have higher morale. One way of quantifying morale is by measuring turnover

Sprint Estimation Metrics

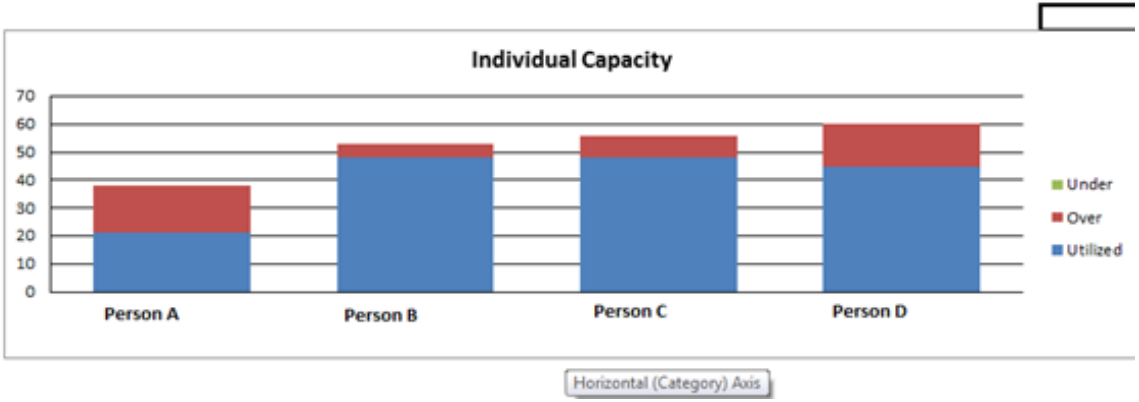
Team Capacity

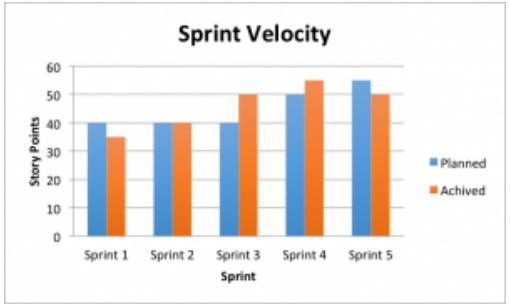
Totals	Hours
Remaining Work	271
Remaining Capacity	210
Utilized	210
Over	61
Under	0



Individual Capacity

Team Member	Hours/Day	Days	Capacity	Assigned	Utilized	Over	Unde
Person A	6	8	48	51	48	3	0
Person B	3	7	21	38	21	17	0
Person C	6	8	48	53	48	5	0
Person D	6	8	48	56	48	8	0

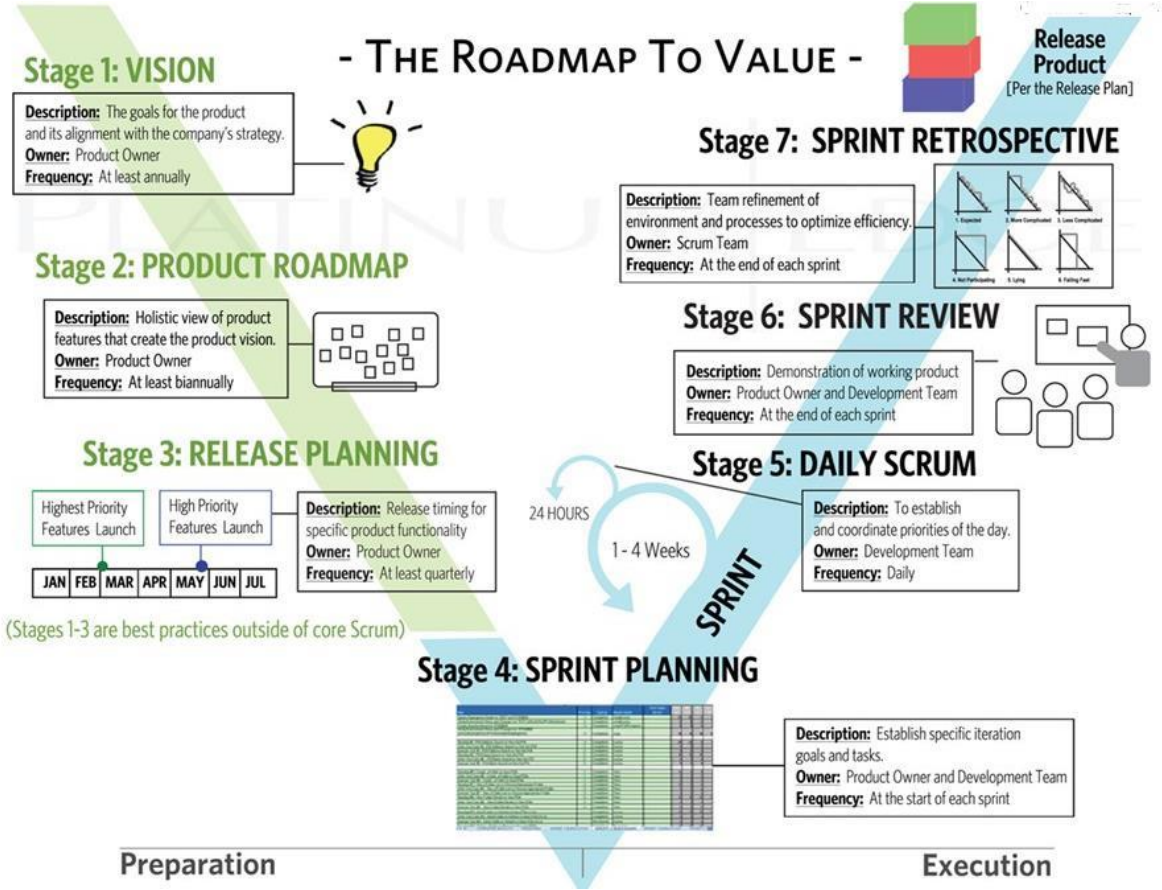




Source: blogs.technet.microsoft.com

Tools for Agile Management ➔➔

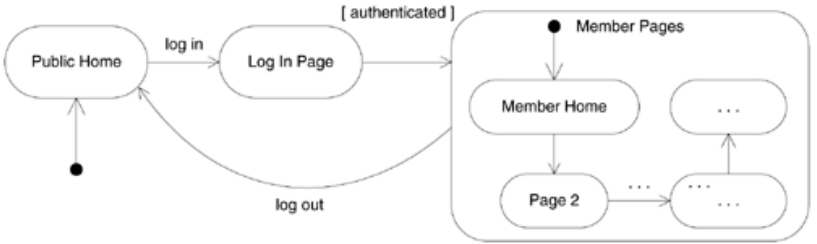
Metrics/Tools at every Stage of Agile Life-cycle



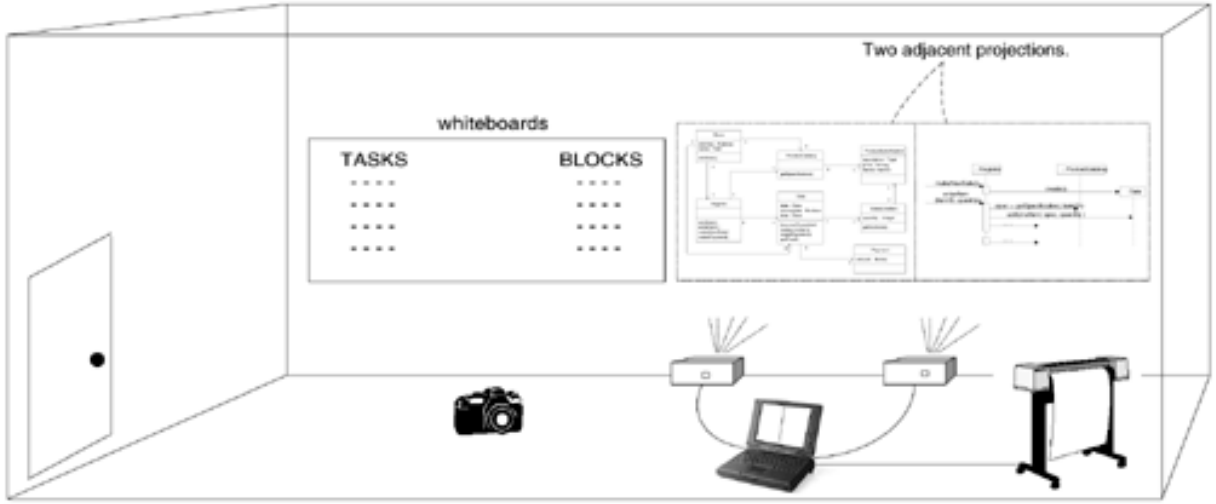
Source: (T2)

Tools for Agile Project/Knowledge Management

- Project Wiki Webs (as “the simplest online Web database that could possibly work” – Ward Cunninghan, Founder of XP)
  - Wikis are popular tool on Agile projects to capture project information; when used as Knowledge sharing tool, Wiki allow people to edit Web pages using only their browser, create new pages and hyperlinks between pages
- CASE Tools for Forward-engineering (generation of code from UML diagrams) and Reverse-engineering (generation of drawings from code)
  - Help in generation of minimal (and automatic) documentation from the code
  - UML diagrams printed on large A0-sheets help enhance communication in common rooms
- Task-boards: Use of Whiteboards, Cling-sheets, Flip-charts,…for Visual Communication
- Excel Graphing, Visio Diagramming, Mindmaps, Index/Story Cards,…
- Fit(fit.c2.com), Fitnesse (fitnesse.org) – an Open-source framework and tool to support acceptance testing developed by Ward Cunninghan and Bob Martin.

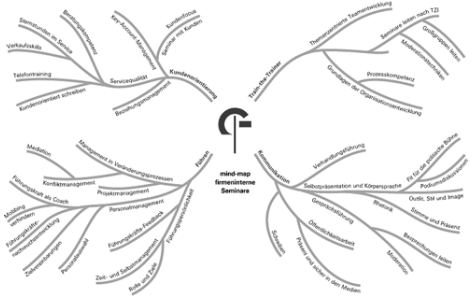


Sample *XP Room* for Collaboration, Communication and Brainstorming



Software:
- Continuous integration tools
- A project Wiki
- Consider a UML CASE tool to reverse engineer diagrams from code.

Hardware:
- Consider two projectors attached to dual video cards.
- For whiteboard drawings, use a digital camera.
- To print noteworthy diagrams for the entire team, try a plotter for large-scale drawings to hang on walls.



Source: (T1)

Summary: Agile Metrics & Tools

- Metrics must be S.M.A.R.T (Specific/Simple, Measurable, Achievable, Relevant, Time-bound/Transparent)
- Metrics are Specific/Tailored to Organizational Processes
- Metrics to be Baselined before commencing Tracking for realistic assessment of Progress
- Metrics are categorized under: Success Metrics, Time/Cost Metrics, and Satisfaction Metrics
- Sprint *Velocity* and *Capacity* are the two Metrics for Planning/Estimating in Scrum
- Task Boards and Open Rooms facilitate real-time communication of Metris to all members of Scrum Team
- Project Wikis and CASE tools are some of the Tools for Knowledge Sharing in Scrum Team

Thank You