Project Management

2.0

John Bowen
John Bowen

- **Senior Director – Global Partnerships, Computer Aid, Inc.** - 2009-2016
- **CIO – PPL Global Corporation (International division of PPL)** - 1999-2009
- **Founder – Management Envision** - 2012-2016 - Research and Consulting
- **Adjunct Professor** – Lehigh University, Iacocca Institute - Global Business, International IT Management, Information Engineering, Project Governance, Project/Program/Portfolio/Process Management
- ~40 years experience in Executive Leadership, Global IT Management, Technology Management, Strategic Planning, Governance, IT Due Diligence, Complex System Implementation, Education
- Program Management Experience: Global projects in 30+ countries in North America, Europe, Latin America, Asia, Africa
- Degrees: Mathematics, Computer Science, Symbolic Logic
- **Computer Aid, Inc.**
  - Lehigh Valley, PA based privately-held corporation, founded in 1981
  - 6,000+ associates: 6 continents, 20 countries
  - IT services: Application Development, Application Support, Management Consulting, System Engineering, Project Management, Process Engineering, IT Resourcing

- **IT Metrics and Productivity Institute (ITMPI)**
  - IT knowledge center
  - Advanced education content in project management, Six Sigma, CMMI, ITIL, software quality and testing
  - PDU/CDU courseware
  - IT leadership newsletters
This presentation borrows content from:

Harold Kerzner: *Project Management 2.0: Leveraging Tools, Distributed Collaboration, and Metrics for Project Success*

and presentations at the PMI - Great Lakes Chapter Professional Development Day, October 16, 2015
Harold Kerzner
John Bowen
Dennis Bolles
Ty Sarkar
Part 1 – Project Management 1.0
Definition of PM 1.0
Project Success Criteria
What is Wrong with PM 1.0?
Why is IT Largely to Blame?
Part 2 – Project Management 2.0
Definition of PM 2.0
Definition of Project Success
Benefits and Advantages of PM 2.0
Part 3 – Driving Forces for Better Metrics
Part 4 – Early Adopters of PM 2.0
Part 5 – Getting Started with PM 2.0
Suggested Reading
Questions
The History of Project Management

Stone Age
9000 BCE

Prehistory

Bronze Age
3300 BCE

History

Iron Age
2550 BCE
The History of Project Management

- **Pyramids**
  - 2550 BCE
- **Stonehenge**
  - 2000 BCE
- **Roman Aqueducts**
  - 100 BCE
- **Medieval Cathedrals**
  - 1150
- **Great Wall**
  - 1400
- **Machu Picchu**
  - 1450
The History of Project Management

- Gantt Chart: 1910
- WW I: 1914 - 1918
- Empire State: 1930
- WW II: 1939 - 1945
- Apollo Mission: 1969
- PC: 1981
- MS Project: 1985
- Web 2.0: 2000

Henry Gantt (1856-1915)

20th Century

21st Century
Actual Gantt chart defining plan for construction of the Empire State Building (1930)

Building the Empire State, page 45
Fig. 2. Detailed Program for Manufacture and Erection of Structural Steel, Empire State Building, New York City. From the Architectural Record 67 (1930): 346.
WHAT IS RIGHT WITH PM 1.0
Mankind has been managing projects for 6000 years
Mankind has been managing projects for 6000 years
Assumptions of PM 1.0:

- Planners can develop a detailed plan that will remain a valid baseline for the duration of the project.
- Team members will commit to meeting the deliverables in the plan.
- Team members will execute the project in accordance with the plan.
- Deviations from the baseline plan will be treated as exceptions that must be corrected.
- Project success is measured by adherence to scope, cost, and schedule.
Strengths of PM 1.0:

- PM 1.0 is disciplined (c.f., Giza Pyramids, Panama Canal, Hoover Dam, Apollo Moon Landing, CERN)

- Many of today’s projects share predictable contexts and unchanging assumptions over the life of the project

- Discipline of PM 1.0 forces a team to produce detailed specifications, complete rigorous testing, and prepare thorough documentation
WHAT IS WRONG WITH PM 1.0
Definition of a Project

A temporary endeavor undertaken to create a unique product, service or result.

Definition of Project Success

Completion of the project within the triple constraints of time, cost and scope.
Project Management 1.0

- Time
- Cost
- Scope
Project Management 1.0
Weaknesses of PM 1.0

- PM 1.0 is not optimized for agility
- PM 1.0 often employs subcontracting components of the plan, leading to goal misalignment
- PM 1.0 does not engage all available knowledge
- PM 1.0 is viewed as operational, not as strategic
- PM 1.0 does not adequately address the subjective (human) dimensions of all projects
The ten dimensions of Project Management

- Time management (schedule)
- Cost management (budget)
- Scope management
- Quality
- Human resources
- Risk
- Procurement (contractors)
- Integration
- Communication
- Stakeholder management
The two objective (quantifiable) dimensions of Project Management ... for which tools are commonplace ... are almost never the cause of project failure

- Time management (schedule)
- Cost management (budget)
- Scope management
- Quality
- Human resources
- Risk
- Procurement (contractors)
- Integration
- Communication
- Stakeholder management
The eight subjective (human) dimensions of Project Management - are responsible for 85% of all project failures

- Time management (schedule)
- Cost management (budget)
- **Scope management**
- Quality
- Human resources
- Risk
- **Procurement (contractors)**
- Integration
- Communication
- Stakeholder management
1) Boston “Big Dig” highway tunnel – Communication management

2) Boeing 787 “Dreamliner” – Procurement management

3) Denver airport baggage handling system – Human resource management

4) Lockheed Martin F-35 Lightning US military joint strike force fighter – Integration management
IT is Largely to Blame
IT Project Success Rate
Standish Group International,
Chaos Report
IT Project Management Success is Abysmal

- US Dept of Defense Integrated Human Resource System (DIMHRS) Delivered no functionality; 199% original cost
- UK’s Fire Control Project 11% functionality; 391% original cost
- California Court Management System 10% functionality; 214% original cost
- US Social Security Administration Disability Case Processing System No functionality; 100% original cost
- British Columbia Integrated Case Management System 30% functionality; 100% original cost
Causes of IT Project Failure

- Poor scope definition (83%)
- Poor communication among relevant parties (57%)
- Poor planning: resources, activities, scheduling (39%)
- Lack of quality control (35%)
- Poor management: project, progress, milestones
- Lack of measurement and correction: metrics, KPIs, output
- Poor resource allocation: staff and vendors

PWC and Cortex
- Our research has identified the top 53 causes of project failure
- No technical factors made the top 40

<table>
<thead>
<tr>
<th>Rank</th>
<th>Item Description*</th>
<th>Source</th>
<th>Mean Importance Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lack of top management support or commitment to the project</td>
<td>Schmidt et al., 2001</td>
<td>6.59</td>
</tr>
<tr>
<td>2</td>
<td>Functional, performance, and reliability requirements and scope are not documented</td>
<td>Winters, 2002</td>
<td>6.58</td>
</tr>
<tr>
<td>3</td>
<td>Project manager(s) cannot effectively lead the team and communicate with clients</td>
<td>Schmidt et al., 2001</td>
<td>6.38</td>
</tr>
<tr>
<td>4</td>
<td>No change control process</td>
<td>Schmidt et al., 2001</td>
<td>6.33</td>
</tr>
<tr>
<td>5</td>
<td>Project stakeholders have not been interviewed for project requirements</td>
<td>Ward, 2003</td>
<td>6.32</td>
</tr>
<tr>
<td>6</td>
<td>No documented milestone deliverables and due dates</td>
<td></td>
<td>6.30</td>
</tr>
<tr>
<td>7</td>
<td>Undefined project success criteria</td>
<td></td>
<td>6.22</td>
</tr>
<tr>
<td>8</td>
<td>Project team members have weak commitment to the project scope and schedule</td>
<td>Schmidt et al., 2001</td>
<td>6.17</td>
</tr>
<tr>
<td>9</td>
<td>Communication breakdown among project stakeholders</td>
<td>May, 1998</td>
<td>6.17</td>
</tr>
<tr>
<td>10</td>
<td>Key project stakeholders do not participate in major review meetings</td>
<td></td>
<td>6.16</td>
</tr>
<tr>
<td>11</td>
<td>Project team members do not have required knowledge/skills</td>
<td>Barki et al., 2001</td>
<td>6.16</td>
</tr>
<tr>
<td>12</td>
<td>Project resources have been assigned to a higher priority project</td>
<td>Havelka et al., 2004</td>
<td>6.12</td>
</tr>
<tr>
<td>13</td>
<td>No business case for the project</td>
<td>Ward, 2003</td>
<td>6.11</td>
</tr>
<tr>
<td>14</td>
<td>No project status progress process</td>
<td></td>
<td>6.11</td>
</tr>
<tr>
<td>15</td>
<td>Schedule deadline not reconciled to the project schedule</td>
<td>Havelka et al., 2004</td>
<td>6.09</td>
</tr>
<tr>
<td>16</td>
<td>Early project delays are ignored — no revision to the overall project schedule</td>
<td>McKeeman, 2001</td>
<td>6.04</td>
</tr>
<tr>
<td>17</td>
<td>Subject matter experts are overscheduled: retain all prior duties yet expected to provide substantial participation to the project</td>
<td>McKeeman, 2001</td>
<td>6.04</td>
</tr>
<tr>
<td>People-Related Risks</td>
<td>Stakeholders</td>
<td>Requirements</td>
<td>Processes</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>--------------</td>
<td>--------------</td>
<td>-----------</td>
</tr>
<tr>
<td>1. Lack of top management support.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Weak project manager.</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>3. No stakeholder involvement.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Weak commitment of project team.</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>5. Team members lack requisite knowledge and/or skills.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Subject matter experts overscheduled.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process-Related Risks</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>7. Lack of documented requirements and/or success criteria.</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>8. No change control process or change management.</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>9. Ineffective schedule planning and/or management.</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>10. Communication breakdown among stakeholders.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Resources assigned to higher priority project.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. No business case for the project.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Causes of IT Project Failure

- IT is an immature engineering discipline
- IT skill is defined by tool proficiency
- IT practitioners lack professional discipline
- IT is, by its very nature, too flexible
- IT pervades nearly all other human disciplines
Part 2

Project Management 2.0
“PM 2.0 = PM 1.0 + Distributed Collaboration”

Project Management 2.0 - Kerzner
- Business value will be the sole justification for project inception and continuation

- Frameworks will replace methodologies

- Business value will be delivered continuously via agile development and interim states

- Teams will be empowered (shared global awareness and self-synchronization)

- Metrics will be dynamic (changing by phase, different metrics for each sponsor)
New Success Criteria

Governance

Metrics and KPIs

Dashboard Status

Continuous Measurement

Project Management 2.0
Definition of Project Success

Completion of the project within the triple constraints of time, cost and scope.

*Project Management Institute - PMBOK*
Definition of Project Success

Achieving the desired business value within the bounds of competing constraints.

*Project Management 2.0 - Kerzner*
Definition of a Project

A temporary endeavor undertaken to create a unique product, service or result.

PM 2.0 Definition of a Project

A collection of sustainable business value scheduled for realization.

Project Management 2.0 - Kerzner
Definition of a Project – My Definition

A collection of realized and sustainable business value.
COMPARISON BETWEEN PM 1.0 AND PM 2.0
<table>
<thead>
<tr>
<th>Factor</th>
<th>PM 1.0</th>
<th>PM 2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project approval process</td>
<td>Minimal PM involvement</td>
<td>Mandatory PM involvement</td>
</tr>
<tr>
<td>Types of projects</td>
<td>Operational</td>
<td>Operational and strategic</td>
</tr>
<tr>
<td>Sponsor selection criteria</td>
<td>From funding organization</td>
<td>Required business knowledge</td>
</tr>
<tr>
<td>Overall project sponsorship</td>
<td>A single person acting as a sponsor</td>
<td>Committee governance</td>
</tr>
<tr>
<td>Planning</td>
<td>Centralized</td>
<td>Decentralized</td>
</tr>
<tr>
<td>Project requirements</td>
<td>Well-defined</td>
<td>Evolving and flexible</td>
</tr>
<tr>
<td>WBS development</td>
<td>Top down</td>
<td>Bottom up and evolving</td>
</tr>
<tr>
<td>Factor</td>
<td>PM 1.0</td>
<td>PM 2.0</td>
</tr>
<tr>
<td>------------------------------</td>
<td>---------------------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Number of constraints</td>
<td>Time, cost and scope primarily</td>
<td>Competing constraints</td>
</tr>
<tr>
<td>Definition of success</td>
<td>Time, cost and scope</td>
<td>Creation of business value</td>
</tr>
<tr>
<td>Scope changes</td>
<td>Minimized</td>
<td>Possibly continuous</td>
</tr>
<tr>
<td>Amount of documentation</td>
<td>Extensive</td>
<td>Minimal</td>
</tr>
<tr>
<td>Communication media</td>
<td>Reports</td>
<td>Dashboards</td>
</tr>
<tr>
<td>Project health checks</td>
<td>Optional</td>
<td>Mandatory</td>
</tr>
<tr>
<td>Type of project team</td>
<td>Co-located</td>
<td>Virtual or distributed</td>
</tr>
<tr>
<td>Factor</td>
<td>PM 1.0</td>
<td>PM 2.0</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-----------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>Customer involvement</td>
<td>Optional</td>
<td>Mandatory</td>
</tr>
<tr>
<td>Organizational project management maturity</td>
<td>Optional</td>
<td>Mandatory</td>
</tr>
<tr>
<td>Executive’s trust in the project manager</td>
<td>Low level of trust</td>
<td>High level of trust</td>
</tr>
<tr>
<td>Speed of continuous improvement efforts</td>
<td>Slow</td>
<td>Rapid</td>
</tr>
<tr>
<td>Project management education</td>
<td>Nice to have, but not necessary</td>
<td>Necessary, and part of life-long learning</td>
</tr>
<tr>
<td>Life-cycle phases</td>
<td>Traditional life-cycle phases</td>
<td>Investment life-cycle phases</td>
</tr>
</tbody>
</table>
IT is Most in Need of PM 2.0
IT Most Needs PM 2.0 – Causes of Project Failure

- Poor scope definition (83%)
- Poor communication among relevant parties (57%)
- Poor planning: resources, activities, scheduling (39%)
- Lack of quality control (35%)
- Poor management: project, progress, milestones
- Lack of measurement and correction: metrics, KPIs, output
- Poor resource allocation: staff and vendors

PWC and Cortex
IT Most Needs PM 2.0 – PM 2.0 will help

- Poor scope definition (83%)
- Poor communication among relevant parties (57%)
- Poor planning: resources, activities, scheduling (39%)
- Lack of quality control (35%)
- Poor management: project, progress, milestones
- Lack of measurement and correction: metrics, KPIs, output
- Poor resource management: staff and vendors
IT Most Needs PM 2.0 – Project Leadership

- Poor scope definition (83%)
- Poor communication among relevant parties (57%)
- Poor planning: resources, activities, scheduling (39%)
- Lack of quality control (35%)
- Poor management: project, progress, milestones
- Lack of measurement and correction: metrics, KPIs, output
- Poor resource management: staff and vendors
Collaboration

Governance

Continuous Status (Dashboard)

Metrics and KPIs

Continuous Measurement

Project Leadership

Project Management 2.0
“Successful projects are led, not managed.”

Great Project Management
<table>
<thead>
<tr>
<th>Project Management</th>
<th>Project Leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methodology</td>
<td>Leadership</td>
</tr>
<tr>
<td>Process</td>
<td>Communication</td>
</tr>
<tr>
<td>Project Plans</td>
<td>Tenacity</td>
</tr>
<tr>
<td>Status Reports</td>
<td>Focus</td>
</tr>
<tr>
<td>Project Meetings</td>
<td>Motivation</td>
</tr>
<tr>
<td>Software Skills</td>
<td>Inspiration</td>
</tr>
<tr>
<td>Time Tracking</td>
<td>Action</td>
</tr>
<tr>
<td>Issues Tracking</td>
<td>Energy</td>
</tr>
</tbody>
</table>
Driving Forces for Better Metrics
<table>
<thead>
<tr>
<th>What</th>
<th>How</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deployment on time / budget</td>
<td>Celebration and recognition</td>
</tr>
<tr>
<td>Adoption for the greater good</td>
<td>Trust</td>
</tr>
<tr>
<td>Effective governance</td>
<td>Clear roles and responsibilities</td>
</tr>
<tr>
<td>Simple decision making</td>
<td>Win / win conversations</td>
</tr>
<tr>
<td>Team effectiveness</td>
<td>Communication</td>
</tr>
<tr>
<td>Goal alignment across organization</td>
<td>Collaboration</td>
</tr>
<tr>
<td>Talent management</td>
<td>Leadership behavior</td>
</tr>
<tr>
<td>Problem solving</td>
<td>Work / life balance</td>
</tr>
</tbody>
</table>
Building a metrics management program cannot be done overnight. Executive support is necessary from the start.

Executive support must be visible. Actions must support words.

Without effective metrics, we tend to wait until the project is way off track before taking action. By that time, it may be too late to rescue it.

With effective metrics, conflicts among team members and stakeholders are expected to decrease.
Good metric management programs can increase the chances for successful project completion.

Stakeholders are expected to make informed decisions and informed decision-making requires more meaningful metrics.

We need metrics that allow project governance to make decisions based upon evidence rather than guesses.

Metrics allow us to better manage all competing constraints, e.g., time, cost, scope, risk, customer satisfaction, safety, etc.
With PM 2.0, all project personnel will have metrics at their fingertips.

Status reporting will be paperless and continuous (savings estimated to be 20% of total project cost).

Project status data will be transmitted on time and from anywhere in the world via mobile devices such that value and performance can be verified, continuously.

Metrics information must be shared rapidly.
... it is easier for the stakeholders to focus upon and agree to the right target and business alignment

... it is easier to evaluate the impact of tradeoffs if a change in direction is needed

... stakeholders have a much more accurate snapshot of project status now and possibly in the future

... we have more meaningful project health checks

... the number of conflicts among team members and with the various stakeholders are expected to decrease
Because each stakeholder may have different needs, dashboard reporting systems allow the project manager to prepare customized dashboards to satisfy each stakeholder’s needs.

Effective dashboards can significantly reduce the time for consensus decision making.

Dashboard reporting of metrics saves time and cost and allows us to get closer to “paperless” project management practices.

Effective dashboard communications makes it easier to get cooperation when using virtual teams.
<table>
<thead>
<tr>
<th>Types of Metrics</th>
<th>Intent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional Metrics</td>
<td>Primarily focus on where we are today</td>
</tr>
<tr>
<td>Key Performance Indicators</td>
<td>Extrapolate the present into the future to tell us where we will end up</td>
</tr>
<tr>
<td>Value-Reflective Metrics (also called Value-Based Metrics)</td>
<td>A combination of metrics and KPIs that tell us the growth of value as the project progresses</td>
</tr>
</tbody>
</table>
Investment Life-Cycle

Initiation

Idea Generation

Project Approval

Project Planning

Delivery

Benefits Realization

Value Analysis

Value Determination

Project Life-Cycle
<table>
<thead>
<tr>
<th>Project Mgt. (Micro Metrics)</th>
<th>Traditional PMO (Macro Metrics)</th>
<th>Portfolio PMO (Macro Metrics)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Time</td>
<td>• Growth in customer satisfaction</td>
<td>• Business profitability</td>
</tr>
<tr>
<td>• Cost</td>
<td>• Number of projects at risk</td>
<td>• Portfolio health</td>
</tr>
<tr>
<td>• Scope</td>
<td>• Conformance to the methodology</td>
<td>• Portfolio benefits</td>
</tr>
<tr>
<td>• Quality</td>
<td>• Ways to reduce the number of scope changes</td>
<td>• realization</td>
</tr>
<tr>
<td>• Resource usage</td>
<td>• Growth in the yearly throughput of work</td>
<td>• Portfolio value</td>
</tr>
<tr>
<td>• Stakeholder satisfaction</td>
<td>• Validation of timing and funding</td>
<td>• achieved</td>
</tr>
<tr>
<td>• Project performance</td>
<td>• Measuring project closure rates</td>
<td>• Portfolio selection</td>
</tr>
<tr>
<td>• Number of deliverables</td>
<td></td>
<td>• and mix</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Resource availability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Capacity utilization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Strategic alignment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Business performance</td>
</tr>
</tbody>
</table>
### Strategic Objectives:

<table>
<thead>
<tr>
<th>Objective</th>
<th>Project 1</th>
<th>Project 2</th>
<th>Project 3</th>
<th>Project 4</th>
<th>Project 5</th>
<th>Project 6</th>
<th>Project 7</th>
<th>Project 8</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Superiority</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Reduced Operating Costs</td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Reduced Time-To-Market</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Increase Business Profits</td>
<td></td>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Add Manufacturing Capacity</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td><strong>Column Scores</strong></td>
<td>4</td>
<td>0</td>
<td>6</td>
<td>7</td>
<td>4</td>
<td>5</td>
<td>0</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

#### Column Scores:

- **No Contribution**
- **1** Supports Objective
- **2** Fulfills Objective
The PMO must put the metrics program in place and maintain ownership

The PMO maintains responsibility for corporate-wide metrics education

There may be a metric owner for each metric

The PMO must conduct metric benchmarking

A new position in the PMO is suggested: Chief Performance Officer
Early PM 2.0 Adopters
Dr. Edward J. Hoffman

NASA Chief Knowledge Officer

Dr. Ed Hoffman is NASA’s Chief Knowledge Officer. He works within NASA as well as with leaders of industry, academia, professional associations, and other government agencies to develop the agency’s capabilities in program and project management and engineering.

Dr. Hoffman has written numerous journal articles, co-authored Shared Voyage: Learning and Unlearning from Remarkable Projects (NASA, 2005) and Project Management Success Stories: Lessons of Project Leaders (Wiley, 2000), and speaks frequently at conferences and associations. He serves as adjunct faculty at The George Washington University.

He holds a Doctorate, as well as Master of Arts and Master of Science degrees from Columbia University in the area of social and organizational psychology. He received a Bachelor of Science in Psychology from Brooklyn College in 1981.
NASA APP E —
Driving towards PM 2.0
Characteristics of NASA projects

- Complex projects involving combination of hardware, software, leading edge science
- Collaboration with European, Russian, and Japanese space agencies (involving multiple cultures, languages, legal systems, oversight, etc.)
- High degree of risk
- Multiple layers of governance (multiple stakeholders)
- Project manager has total responsibility
NASA projects have continued to make progress in maturing technologies prior to the preliminary design review. **This year, 63 percent of projects met this standard, up from only 29 percent of projects in 2010.** As NASA continues to undertake more complex projects it will be important to maintain heightened attention to best practices to lessen the risk of technology development and continue positive cost and schedule performance.

**NASA projects are maintaining steady performance toward meeting GAO's best practices for design stability.**

GAO NASA Assessment, April 15, 2014
Program/Project Management Development Process Support Materials
<table>
<thead>
<tr>
<th>Previous PM Guidelines</th>
<th>New 7120.5A Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescriptive</td>
<td>Permissive</td>
</tr>
<tr>
<td>Rigid</td>
<td>Emphasis on Tailoring to Context</td>
</tr>
<tr>
<td>Theoretical</td>
<td>Functional</td>
</tr>
<tr>
<td>Limited Applications</td>
<td>Broad Applications</td>
</tr>
<tr>
<td>No discussion on the need for</td>
<td>Emphasis on Professional Development</td>
</tr>
<tr>
<td>professional development</td>
<td></td>
</tr>
</tbody>
</table>
Benchmarking PM Capability
# One Hundred Rules for NASA Project Managers

## Table Of Contents

<table>
<thead>
<tr>
<th>Rule</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The Project Manager</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Initial Work</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>Communications</td>
<td>2</td>
</tr>
<tr>
<td>4.</td>
<td>People</td>
<td>2</td>
</tr>
<tr>
<td>5.</td>
<td>Reviews and Reports</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>Contractors and Contracting</td>
<td>4</td>
</tr>
<tr>
<td>7.</td>
<td>Engineers and Scientists</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>Hardware</td>
<td>5</td>
</tr>
<tr>
<td>9.</td>
<td>Computers and Software</td>
<td>6</td>
</tr>
<tr>
<td>10.</td>
<td>Senior Management, Program Offices, and Above</td>
<td>6</td>
</tr>
<tr>
<td>11.</td>
<td>Program Planning, Budgeting, and Estimating</td>
<td>6</td>
</tr>
<tr>
<td>12.</td>
<td>The Customer</td>
<td>7</td>
</tr>
<tr>
<td>13.</td>
<td>NASA Management Instructions</td>
<td>7</td>
</tr>
<tr>
<td>14.</td>
<td>Decision Making</td>
<td>7</td>
</tr>
<tr>
<td>15.</td>
<td>Professional Ethics and Integrity</td>
<td>7</td>
</tr>
<tr>
<td>16.</td>
<td>Project Management and Teamwork</td>
<td>8</td>
</tr>
<tr>
<td>17.</td>
<td>Treating and Avoiding Failures</td>
<td>8</td>
</tr>
</tbody>
</table>
Part 5

Getting Started with PM 2.0
Project Management 2.0 – Steps to Take Today

- Implement project dashboards for status reporting and eliminate (or at least reduce) paper status reports
- Implement a process for measuring the subjective dimensions of every project as an early warning system
- Define the success criteria for each project and report on those metrics to all stakeholders
- Identify the business value created by every project and measure/report progress and results
Identify or define interim states for every project and modify project plans to include value-added deliverables produced at least quarterly.

Implement a collaboration tool to facilitate project team interaction, to report and track issues and to provide status to project sponsors and stakeholders.
The eight subjective (human) dimensions of Project Management - are responsible for 85% of all project failures

- Time management (schedule)
- Cost management (budget)
- Scope management
- Quality
- Human resources
- Risk
- Procurement (contractors)
- Integration
- Communication
- Stakeholder management
THE CONVERSATION PRISM
Brought to you by
Brian Solis & JESS3

For more information
check out conversationprism.com
Conclusion
Project Management 2.0

- Will be used increasingly for most projects, especially large, complex projects
- Will be embraced by the PMI and will be formalized in future editions of the PMBOK
- Will adapt to support Management 2.0, i.e., democratic, participative, collaborative, team interaction
- Will leverage the collaboration tools of Web 2.0
- Will change program and portfolio governance to ensure projects deliver business value
Acknowledges and supports flexible project management by abandoning rigorous, and inflexible, PM methodology

Supports rapidly evolving business climates and changing priorities

Requires a transition from Project Management to Project Leadership implying a significant change in the traditional role of the project manager

Requires greater involvement of executive governance

Will improve project success rates
Suggested Reading
Bibliography and recommended reading:

- *Project Management 2.0: Leveraging Tools, Distributed Collaboration, and Metrics for Project Success*, Harold Kerzner, PhD

- *The Strategic CIO: Changing the Dynamics of the Business Enterprise*, Phil Weinzimer

- *Early Warning Signs in Complex Projects*, Ole Jenny Klakegg, PhD, Terry Williams, PhD, Derek Walker, PhD, Bjorn, Andersen, PhD, Ole Morten Magnussen, PhD

- *Visualizing Project Management: A Model for Business and Technical Success*, Kevin Forsberg, PhD, Hal Mooz, Howard Cotterman

- *Towards Project Management 2.0*, Raymond Levitt

- *Building the Empire State*, Carol Willis

- *The Visual Display of Quantitative Information*, Edward R. Tufte
Bibliography and recommended reading:

- https://en.wikipedia.org/wiki/Project_management_2.0
- http://www.pmi.org/Learning/articles/nasa.aspx
- http://www.slideshare.net/wrike/project-management-20-1884020
- https://www.wrike.com/blog/definition-of-project-management-2-0/
- http://network.projectmanagers.net/profiles/blogs/is-project-management-2-0-dead

(Stanford University Advanced Project Management Program)
Questions?
More information?

John_M_Bowen@compaid.com