The History of Project Management Software

From CPM to Agile, PPM, SEM, SPM, CWM, and AI

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My Background

- 35+ years in the project management field as PM and SW Designer
- Starting as project manager for 7 year/$4 billion E&C project
- Rich and his partners developed several PPM systems on mainframes, minicomputers, PCs, and web since 1980s
- Microsoft acquired their Enterprise Project system in 2000 which became the basis of Project Professional, Project Server/Project Online
- Rich joined Microsoft and was the Solution CEO for Microsoft EPM in Steve Ballmer's Solutions Team
- After leaving Microsoft, Rich and his partners continued to develop PPM solutions based on Microsoft technical foundation
- Member of Microsoft Partner Advisory Council for 8 years
- For the past 10 years, Rich has been a PPM consultant to end users and several software vendors
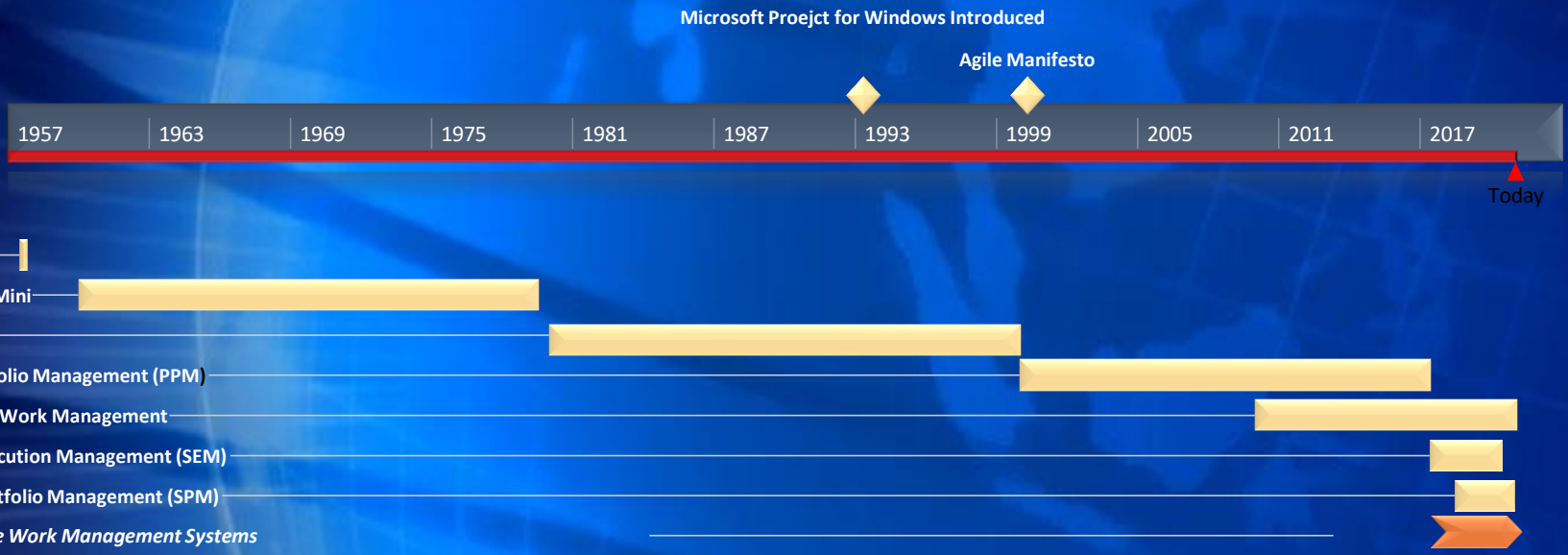- Speaker at Enterprise Architecture Conference, PMI, MPUG

Agenda

- The "early years"
- The age of mainframe/minicomputer PM
- The PC emerges
- Project Portfolio Management era
- The Agile Manifesto and Move from "Waterfall"
- Move to the "Cloud"
- Impact of AI?
- Questions

Some Things we will Cover

- What's with all these Brits?
- The real secret of Primavera's success
- The first Windows PM system was….?
- CPM isn't just an operating system for the Apple 2
- Market leaders in each era
- $100,000/month for PM software?
- The unveiling of Project for Windows 1.0
- Microsoft gets real in PM with Project 2000
- What is Project Portfolio Management (PPM)?
- "Collaboration" drives the marketplace
- Why the "cloud"?

How it all began

- **The Pioneers**
  - **The Company:**
    - Dupont
  - **The team:**
    - John Mauchly
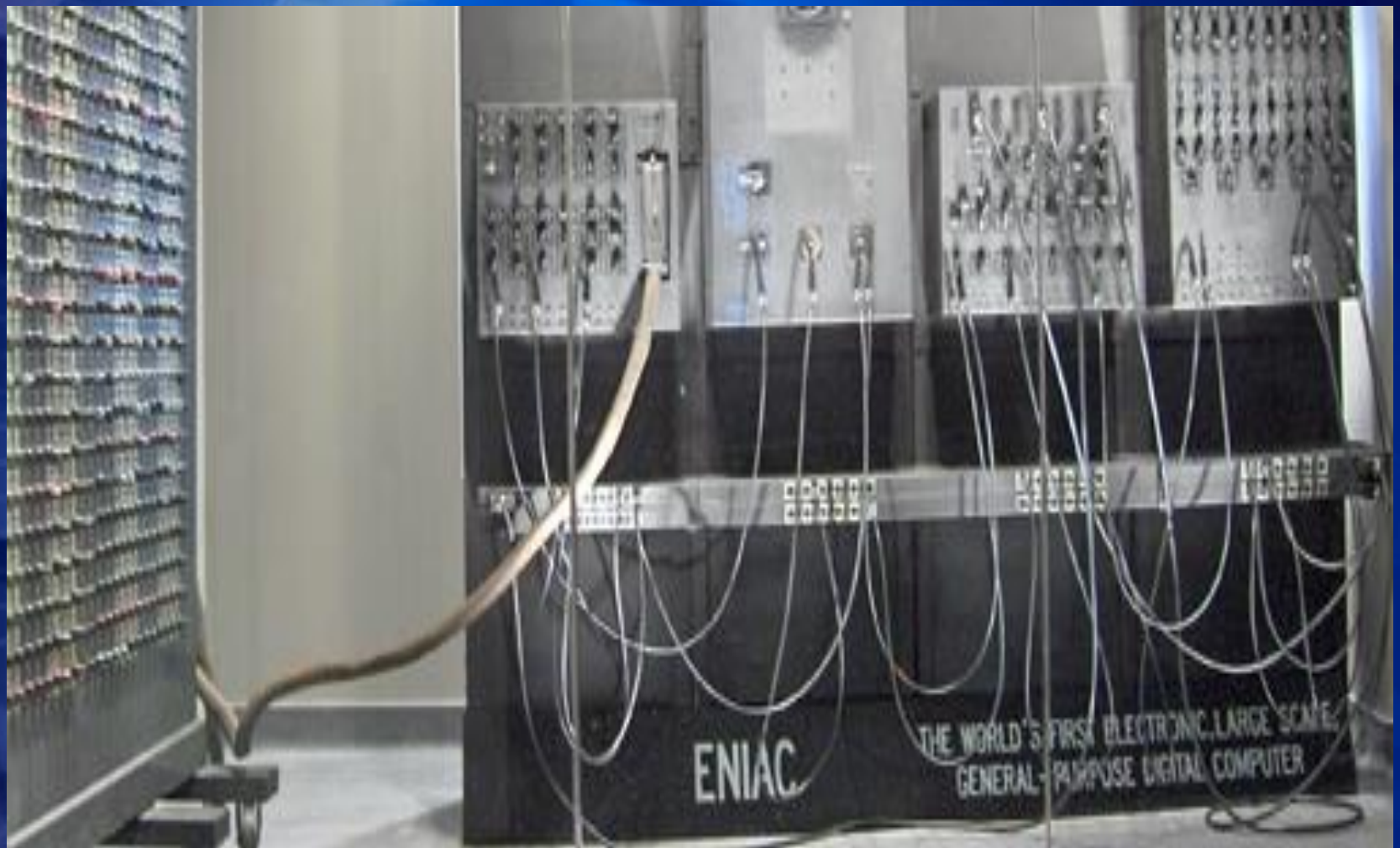   - J. Presper Eckert Jr.
    - Jim Kelly
    - Morgan Walker
- **Eckert-Mauchly Computer Company**
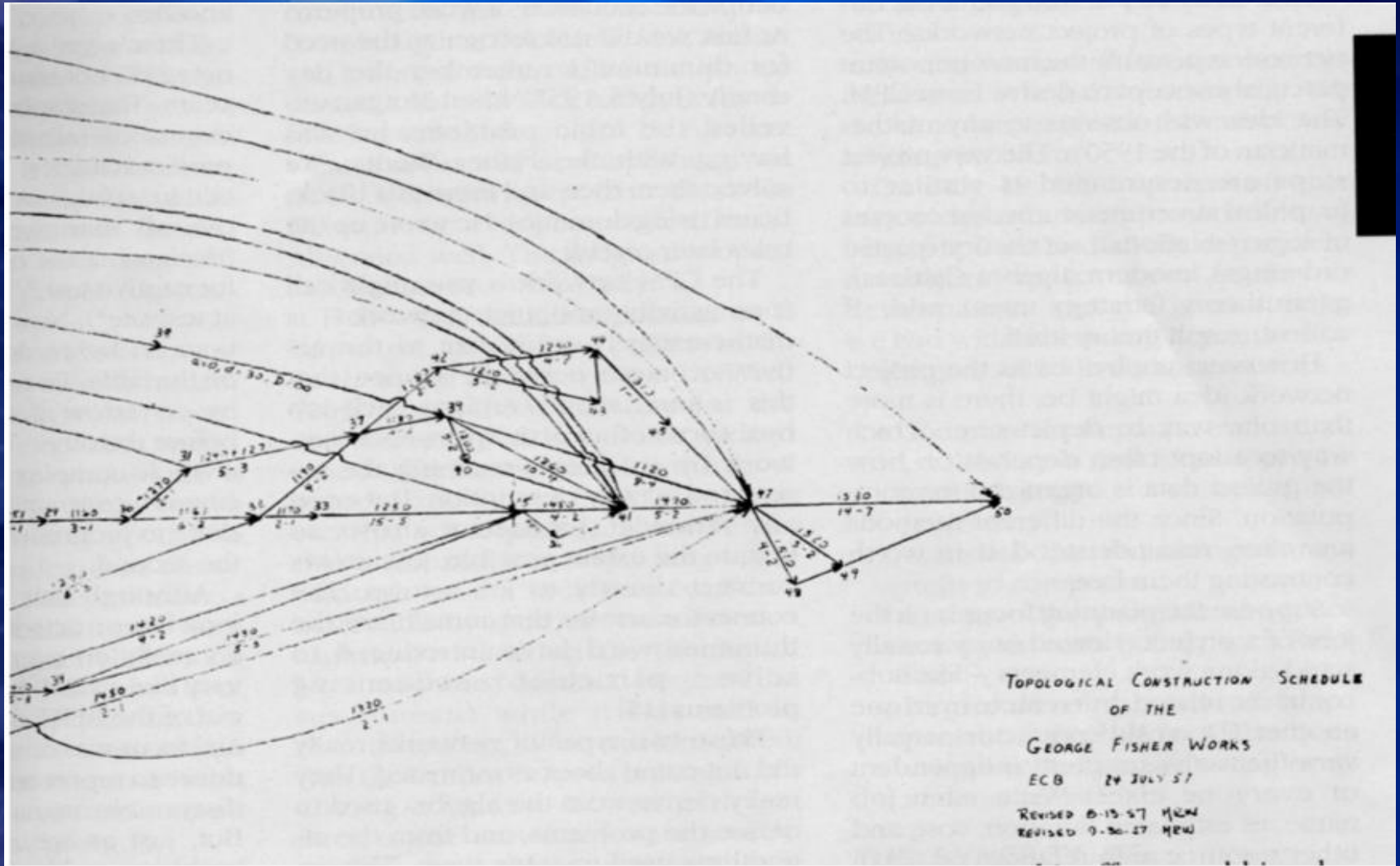 - **Eniac**
  - **Univac**

Eniac

Jim Kelly

- ◆ **Bases CPM on linear programming techniques**
- ◆ **Creates "I-J" (Activity on Arrow diagram)**
- ◆ **Dupont proposes July 1957 plant shutdown as first application**
- ◆ **Morgan consumes 3 months assembling the first test data:**
  - ❖ **61 activities**
  - ❖ **8 restraints**
  - ❖ **15 dummies**

John Mauchly

- **Primary interest was the "application" of computers**
- **Chief Programmer**
- **Pioneered critical concepts:**
  - **Stored programs**
  - **Subroutines**
  - **Programming languages**
- **Eckert-Mauchly bought by Remington Rand and became the Univac Division**
- **Dupont contracts with Univac for "planning, estimating, and scheduling" system**
- **May 1957 Dupont meets with team to consider CPM**

The First Project

TOPOLOGICAL CONSTRUCTION SCHEDULE
OF THE
GEORGE FISHER WORKS
ECB   24 JULY 57

REVISED 8-15-57 MEW
REVISED 9-30-57 MEW

Lessons Learned

- ***Project management*** **thus became the first commercial software run on a computer with a "stored" program**

- *Dupont saved 25% on their shutdowns*

- *But dropped the system after a major management change!!!*

- *Jim and John form Mauchly and Associates in 1959 to carry on promotion of CPM*

Where did "bugs" come from?

- *Eniac was vacuum tube computer with "core" memory and no insulation*
- *Grace Hopper first used the term "bugs"*

Mainframe/Mini Era

- *Mauchly and Associates decide to build CPM computers to sell*

- *Firm collapses and US part retains the rights*

- *K&H Systems in UK obtains rights and creates*
  - *Premis for mainframes, Premini, Promini*
  - *Licenses techniques to Cheltonian UK for Plus 10/20*
  - *Gives rights to founders of Metier who create Artemis*
  - *Cheltonian licenses to US Welcom software for Open Plan*
  - *Develops Prestige*

- *PSDI creates Project/2*

- *McDonnell Douglas creates MSCS*

- *Mainframe predecessor to Primavera released*

- *Every vendor says "relational database"*

- *Vendor mergers begin*

Mainframe Era

- **2 main users of PM systems (very different);**
  - **Engineering/construction/aerospace/government**
    - **MSCS**
    - **Premis**
    - **Project 2**
    - **All available on timesharing services (1st "Cloud")**

  - **IT**
    - **Came about from IBM "unbundling"**
    - **Mainly timekeeping**
    - **PC/70**
    - **PAC III**
    - **N5500**

Minicomputer Era

◆ *DEC Vax and HP hardware*

◆ *Vendors*

    ❖ *Metier/Artemis (the dominant vendor)*

    ❖ *Promini, Premini, Prestige, G/C Cue*

◆ *Competed with mainframe vendors for "on-premis"*

The PC Era Begins

◆ *Many PC systems created in early 1980s*

  ❖ *Lisa Project*

  ❖ *Timeline*

  ❖ *Project WorkBench*

  ❖ *Scitor*

◆ *But Primavera created and dominated the space. Why?*

  ❖ *Could schedule 10,000 tasks. Really?*

  ❖ *As PC moved from 8088/86 to 80286 to 80386 to Pentium, Primavera got more powerful with no code changes!!!*

Enter Microsoft Project

- *Microsoft Project for DOS introduced*
- *Microsoft Project for Windows introduced*
- *MS Project wasn't the first Windows based PM system (Ajida Systems OnTime)*
  - *Gantt*
  - *3D PERT*
  - *List*
  - *WBS*
- *MS Project for Windows was conceived of as a demo for Windows 3*
- *Was not marketed as a "project management" system until Project 2000*
- *First attempt at "enterprise" (Project Central with Project 2000)*

1990-2003 (the "Enterprise" Era)

- ◆ *Mergers/acquisitions ramp up*
  - ❖ *Lockheed acquires Metier (Artemis)*
  - ❖ *Lucas acquires Artemis*
  - ❖ *Artemis/Lucas acquires K&H*
  - ❖ *CSC acquires Artemis*
  - ❖ *Gores Technologies acquires Artemis*
- ◆ *IT begins to dominate PM implementations!!!*
- ◆ *Systems built on MS Project appear*
  - ❖ *Pacific Edge Project Office*
  - ❖ *eLabor Enterprise Project*
  - ❖ *Project Server/Business Engine*
- ◆ *Every vendor claims MS Project integration*
  - ❖ *PlanView*
  - ❖ *Primavera*
  - ❖ *Clarity*
- ◆ *Microsoft enters the enterprise with Project Professional and Project Server 2002/2003*

"Enterprise Project Management" How are we doing?

Project Management Challenges (what worries you most?):

Issues	Year1	Year2
Changing Organizational Priorities	43%	50%
Change Management	35%	40%
Risk Assessment and Management	37%	36%*
Alignment between project and organizational goals	20%	21%
Project Management Skill Level	34%	33%*
Scope Clarity	50%	49%*

Source: BIA and Giga Information Group

* Showed slight improvement (just 1% year on year)

What does this mean?

- There were slight improvements in PM practices

- But, most still aren't buying into the concept of organizational project management

- Result is that reactive behaviors stemming from habit and external pressures tend to preside over proactive ones.

- Personal and political preferences decide priorities more than alignment with business goals

Another Look

◆ 500 execs asked 3 questions:

   ❖ How do you knows the state of finances (go into my ERP)

   ❖ How do you get information on staff? (I go to the HR system)

   ❖ How do you get the status of major projects?

Survey Says…

◆ 90 % of execs said **"I call the person I think knows the real answer"!!!**

The EPM/PPM ERA

- ◆ *What is Project Portfolio Management?*

The EPM/PPM ERA

◆ *What is Project Portfolio Management?*

Some Definitions

◆ *Project Portfolio Management* **is the *process* of aligning investments with corporate business needs, and the analysis and proper mitigation of investment risks. It involves the selection of work to be managed and delivered as well as the oversight of progress against plan**

◆ *IT Governance* **is the responsibility of the board of directors and executive management. It is an integral part of enterprise governance and consists of the leadership and organizational structures and processes that ensure that the organization's IT sustains and extends the organization's strategies and objectives. (IT Governance Institute)**

# Relationship of project, program, portfolio management
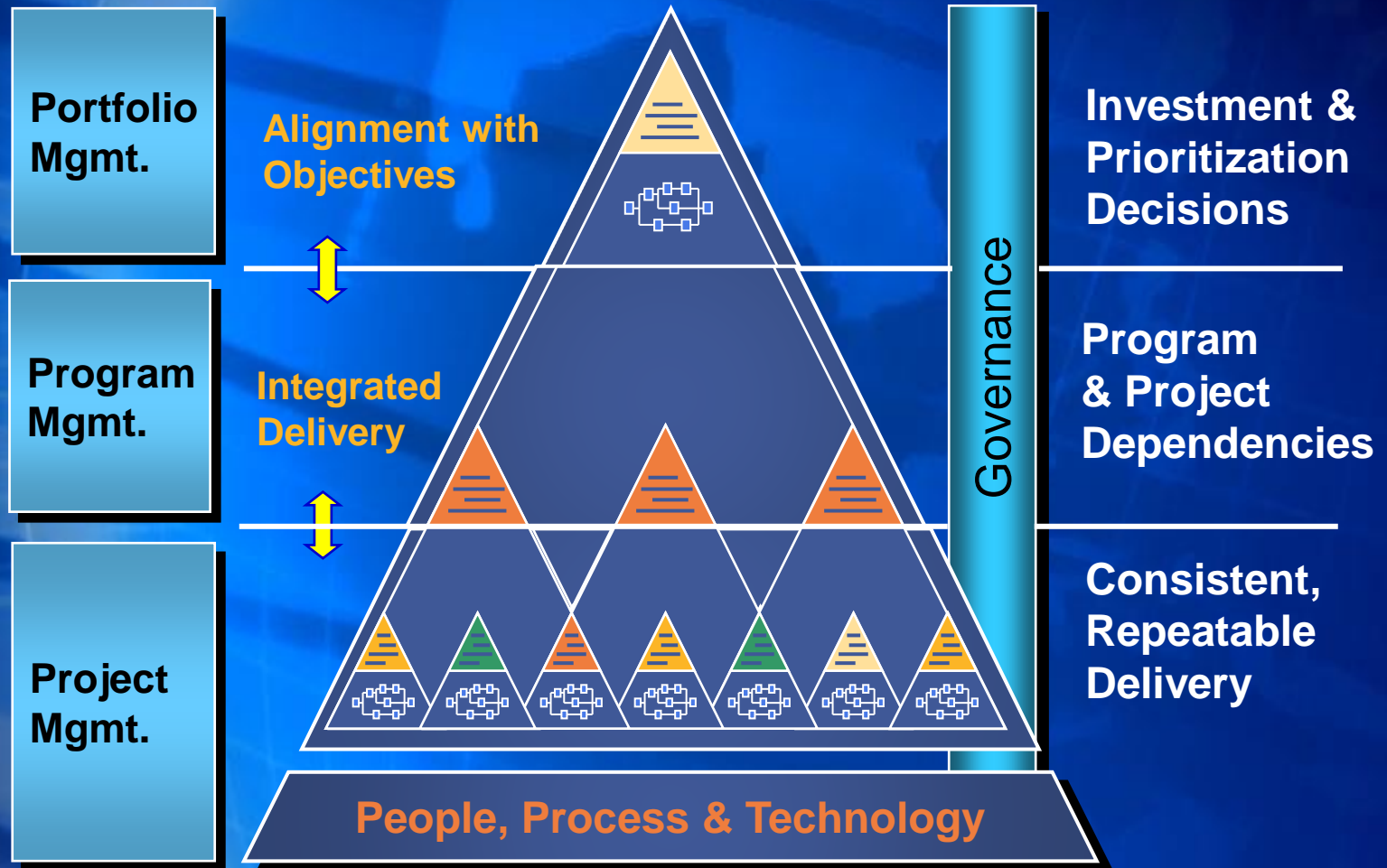
What are the Business Challenges PPM can help solve?

◆ **How do I prioritize initiatives across my organization?**

◆ **What is the status of our top five initiatives?**

◆ **Do we have the right people working on the right projects?**

◆ **Do we leverage knowledge and best practices across people and projects?**

◆ **Do we have the skills and capacity within our organization to achieve our long term goals?**

"Portfolio Management" must consider ALL the effort, not just projects
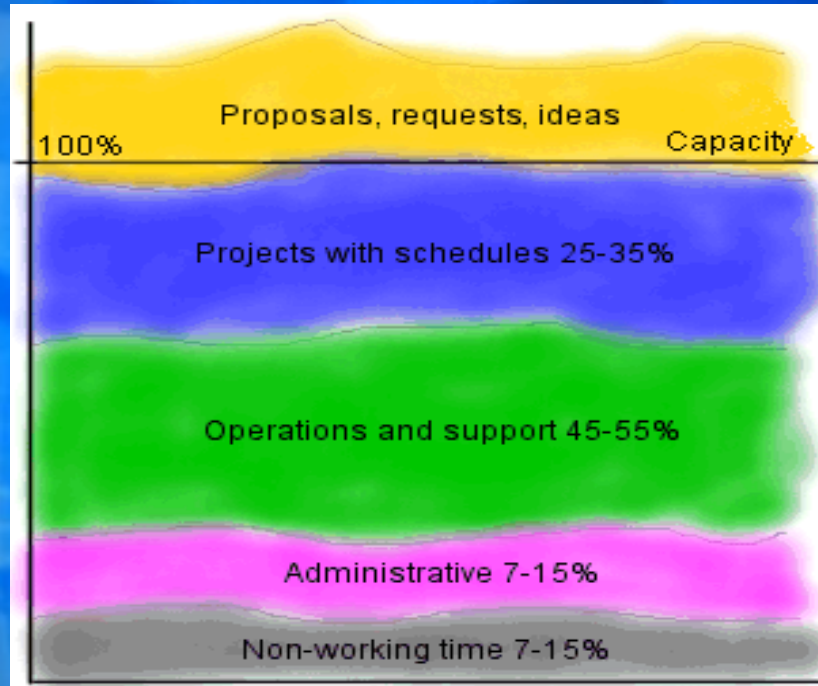
Portfolio management is about "doing the right things" and making best use of your resources. Resource management is *the* critical success factor for effective portfolio management

Where were we headed (2003...)?

- *Software as a Service PM appears*
- *Constant stream of new vendors*
- *S/W prices fall. Services go up!*
- *Ever Changing Vendors*

Ever Changing Vendors

- **Pat Durban Introduces Planview**
- **Mergers/acquisitions**
  - *Mercury acquires Kintana*
  - *HP acquires Mercury*
  - *ABT acquires Project Workbench*
  - *Clarity acquires ABT*
  - *Primavera acquires ProSight*
  - *Primavera acquires Evolve*
  - *Oracle acquires Primavera*
  - *Serena acquires Pacific Edge*
  - *Microsoft acquires Enterprise Project*
  - *Microsoft acquires UMT Portfolios*
  - *EPMLive acquires EPK Group products*
  - *Upland acquires Tenrox, EPMLive*

The Impact of Agile

◆ ***Agile Manifesto and Agile Alliance (2001)***

◆ The four core values of <u>Agile software development</u> as stated in the Agile Manifesto are as follows:

1. Individuals and interactions over processes and tools.
2. Working software over comprehensive documentation.
3. Customer collaboration over contract negotiation.
4. Responding to change over following a project plan.

The Impact of Agile

◆ The 12 principles of the Agile Manifesto:

➢ Meeting end users' needs with early and <u>continuous delivery</u> of work.

➢ Being open to changes in requirements even late in the project.

➢ Delivering completed work at regular intervals, preferably short ones.

➢ Working with the project team and business owners daily.

➢ Assembling a motivated team, providing them with the right environment and support, and trusting them.

➢ Communicating face-to-face regularly.

➢ Using completed work to measure progress.

➢ Creating processes that promote sustainable efforts and a constant pace of work.

➢ Requiring continuous attention to excellence through good design.

➢ Encouraging simplicity.

➢ Recognizing that the best work emerges from self-organized teams that deliver the best architectures and designs.

➢ Reflecting regularly on how the team can be more effective and fine-tuning and adjusting the approach.

Major Agile Tools

◆ Microsoft Azure DevOps (TFS)

◆ Atlassian Jira

   * Note that these tools
   themselves do no support PPM

The Move to the "Cloud"

- ◆ **Began with My Planview, Clarity, other strictly internet based offerings**

- ◆ **Microsoft enters with Project Online**

- ◆ **Project Online advantages:**
  - ❖ *Security*
  - ❖ *Office 365*
  - ❖ *Dynamics*
  - ❖ *Price*

- ◆ **S/W prices fall. Services go up!**

- ◆ **Ever Changing Vendors**

- ◆ **New vendors emerge based on Project Online**

SEM/SPM

◆ *These categories were created by the major Industry Analysts*

◆ *The main value was to tie together:*

❖ *Strategic Planning*

➤ *Plans*

➤ *Objectives*

➤ *Goals (OKRs)*

❖ *Portfolio Execution and Analysis*

➤ *Portfolios*

➤ *Programs*

➤ *Projects*

❖ *"Deliverables" Management*

➤ *Products*

➤ *SW Releases*

The Move to the "Cloud"

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  - *Security*
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  - *Dynamics*
  - *Price*

- **S/W prices fall. Services go up!**

- **Ever Changing Vendors**

- **New vendors emerge integrated with Project Online**

Expanding the Market to Collaborative Work Management (CWM)

◆ *Perhaps the fastest growing market segment*

◆ *CWM is aimed at more than just projects*

◆ *Covers ALL work*

◆ *Most tools don't address overall resource management*

◆ *Major vendors include:*

❖ *Wrike*

❖ *Monday.com*

❖ *Microsoft Planner and Project for the Web*

The Impact of AI on PPM

◆ *In case you didn't notice, almost every vendor is addressing AI in some fashion*

◆ *Industry analysts say that AI will reduce the clerical effort required for serious PPM implementations*

Survey Says…

◆ 90 % of execs said **"I call the person I think knows the real answer"!!!**

The Impact of AI on PPM

- **_The first vendor to address AI was Planview with Planview KODI_**
  - ❖ _An "intelligent assistant" BOT aimed mainly at helping to evaluate critical resurce shortages_
  - ❖ _Works within Microsoft Teams_
  - ❖ _Requires Planview Portoliosa_
  - ❖ _Available from Microsoft AppSource_

The Impact of AI on PPM

- ***Perhaps the most comprehensive AI capabilities currently available is OnePlan's Sofia GPT***
  - ***Addresses portfolio managers, resource managers, financial managers, strategic planning functions***

Ask Sofia

Provide me a list of 5 viable Objectives & Key Results for Digital Transformation Office

Objective 1: Enhance the digital experience for customers and employees

Key Result 1.1: Improve website user experience by reducing the average load time by 30% within six months
Key Result 1.2: Achieve a minimum 90% satisfaction rate on digital service user surveys

Objective 2: Adopt innovative digital technologies to optimize operational efficiency

Key Result 2.1: Implement RPA (Robotic Process Automation) to streamline 3 core business processes within nine months
Key Result 2.2: Increase overall process efficiency by 20% in one year

Objective 3: Strengthen data-driven decision-making culture within the organization

Key Result 3.1: Establish a centralized data analytics platform, accessible to all departments, within six months
Key Result 3.2: Train at least 80% of team members across departments on data analytics tools and best practices within 12 months

Objective 4: Foster a culture of continuous learning and innovation to keep up with digital transformation

Key Result 4.1: Create an internal innovation lab or training program to encourage experimentation with emerging technologies within six months
Key Result 4.2: Increase employee engagement and participation in innovation projects by 30% within one year

Objective 5: Leverage strategic partnerships for accelerated digital transformation

Key Result 5.1: Establish partnerships with at least 3 technology firms to enhance

Is PPM/SEM/SPM really the ultimate solution?

- ❖ **Remember these categories were defined by the industry analysts (Gartner, Forrester, IDC)**
- ❖ **The author submits that there is a <u>more comprehensive category</u> which organizations should be considering**

"Integrated Strategic Planning, Portfolio Execution and Analysis, and Deliverables Management System"
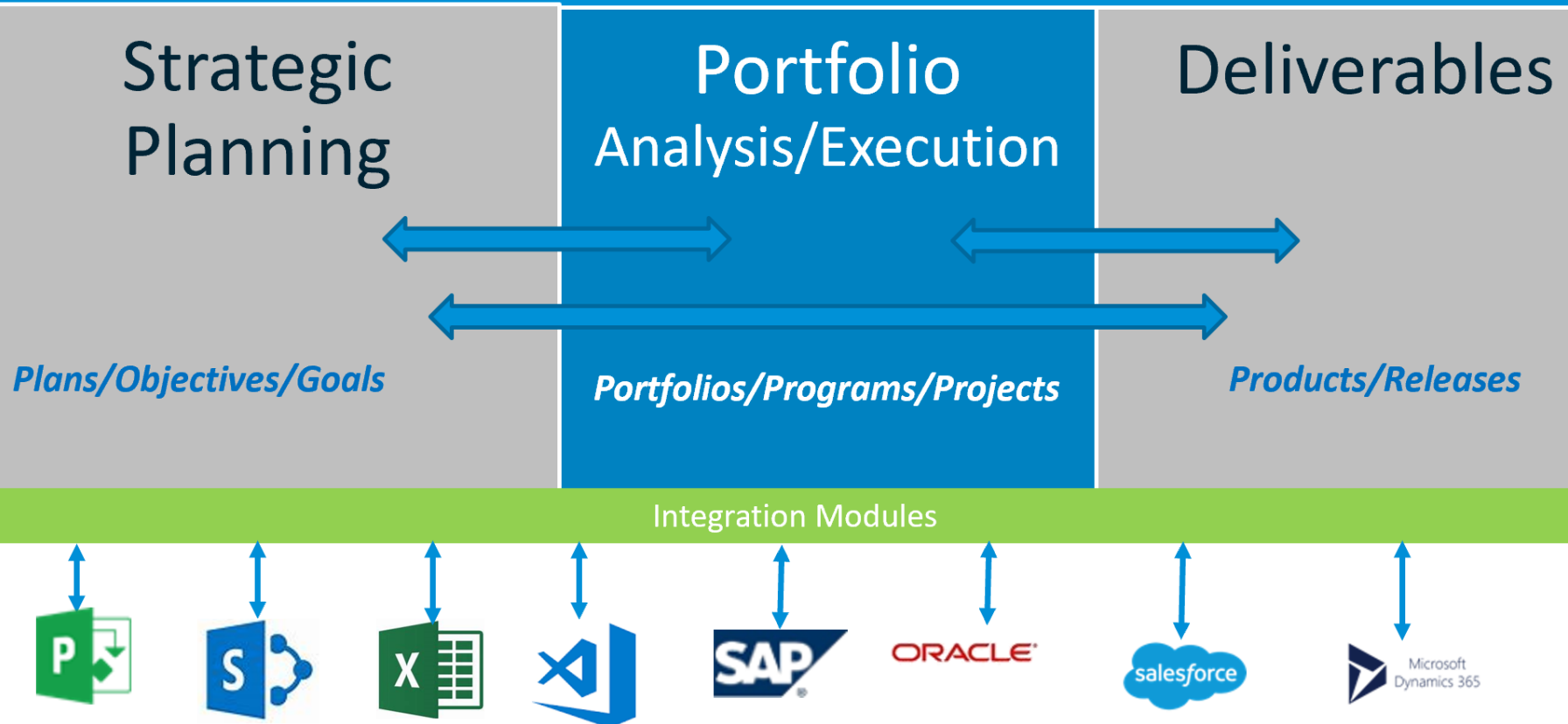
Key System Capabilities of such a solution:

- Ability to define Strategic Plans, Objectives, Goals, Products, Releases, Risks, Backlog
- Time-phased Financial Management (Budegting, Forecasting,Renefits, Actuals)
  - Can be applied to programs, projects, goals, risks, products, etc.
  - Multiple calendars (monthly, quartery, annual, fiscal month (4/4/5 week)
  - Multiple versions (preliminary Budget, approved Budget, Forecast, Actuals, Funding alternatives
  - Support "top-down" and "bottom-up" costing with rollup
  - Comprhensive scenario analysis and simulations
  - Dashboards
  - Integration with corporate systems
  - Multi-currency
- Compehensive resource planning (demand management)
  - Must be time-phased
  - Resource Planning by roles
  - Support skills definition/proficiency
  - Comprhensive scenario analysis and simulations
  - Dashboards
- Multi-language/Multi-currency
- Graphical representation of portfolio relationships and workflows.
- Comprehensive reporting and dashboards.
- Support commonly used detail planning tools.

!!!There are vendors who address this category !!!

Questions/Follow-up

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