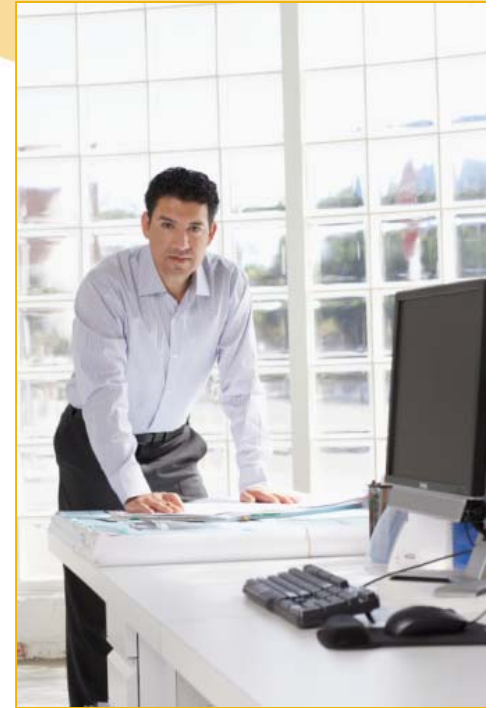# Resource Planning and Management:

Job One for Software Project Managers

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Agenda

- Introduction

- Project planning failures

- A good project plan

- Improving project planning

- Institutionalizing good project planning

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Historical Context

"Which of you wishing to
construct a tower does not first
sit down and calculate the cost
to see if there is enough for its
completion? Otherwise, after
laying the foundation and finding
him unable to finish the work the
onlookers should laugh at him
and say 'This one began to build
but did not have the resources to
finish"

Jesus to his disciples

(Luke 13:25-33)

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Standish CHAOS Summary for 2009

24%
32%
44%
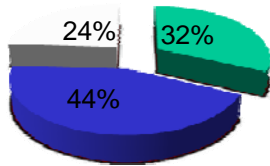
■ Success ■ Challenged Failure

Standish Group reports in 2009 Chaos Study that only 32% of software projects are successful

COMPUTERWORLD

Paul Michaels reports in a 2007 Computer World article that an estimate $75B (9 zeros) cost in the US per year for rework and abandoned systems

Roger Sessions published a white paper in 2009 that puts the figure at $1.22 T (even more zeros)

Constant barrage of project doom and gloom….

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Reasons for Project Planning and Management Failures

- **Organizational Failures**

  - Setting unrealistic goals

  - Failure to learn from history and accept reality

- **Project Leadership Failures**

  - Failure to communicate and manage expectations and risks

- **Project Participant Failures**

  - Agile practices bring everyone onto the planning stage

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Project Management Triangle

- Projects are performed and delivered under constraints of time, cost, scope and quality

- From geometry we know

    – Can't just change one dimension of triangle

- Successful resource planning and management requires that this fact be respected

Components of Good Project Planning and Management

- **A Good Estimate**

  – Based on history and reality

  – Respects the triangle

- **Organizational Acceptance**

  – Communication

  – Expectation management

- **Response to Change**

  – Respect the triangle

  – Communicate and manage expectations

Improved Project Planning

- Framework for negotiation fueled by ……
  - Better estimates
  - Better resource allocation
  - Historical analogies

- Success of negotiation predicated on ….
  - Respect for the triangle
  - Communication
  - Acceptance

Communication, Collaboration, Acceptance

- Project decisions need to be a negotiation based on mutual understanding of and belief in the project management triangle

  - Project leaders need to communicate triangle effectiveness via organizational history

  - Business leaders need to accept history as a valid teacher and avoid…

    - Unrealistic schedule mandates

    - Over optimistic project expectations

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Tools for Negotiation

- Frame the conversation with formal estimation tools/methodologies creating common definitions for

    – Project scope factors

    – Project productivity information

    – Project schedule

    – Project activities and resources

- Use common definitions to create historical analogies

- Base future plans to mirror past successes

afm2   "Strategy Slide"

Through history you can explain thruput. Parametrics supports this process with calibration engine for common process for data collection

minkiewicz, 8/2/2010

Weaknesses in Estimation Practices

- Effort estimating techniques which link time and schedule but ignore scope are limited

    - Most Project Management and EVM tools/methodologies lack a link to scope

- Effort estimating techniques which don't acknowledge organizational history are limited

- Estimates that are not credible and defendable

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Better Estimates

- Better estimating is achieved when a methodology is used that

    – Calculates effort and schedule based on scope

    – Facilitates trade-offs between effort, schedule, and quality

    – Can be fine tuned with an organization's history
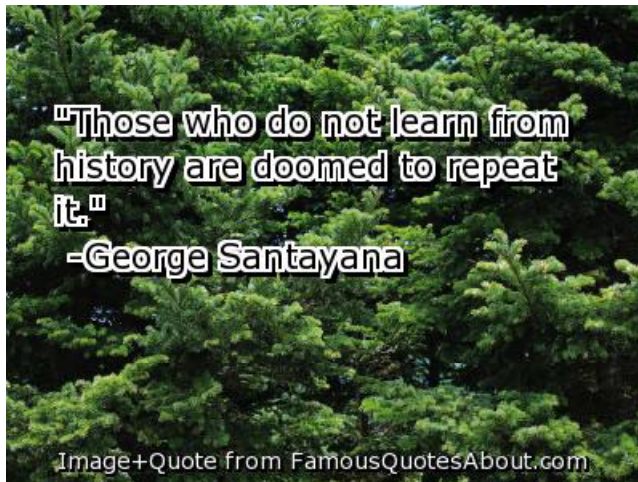
    – Supports successful negotiations

Better Resource Allocation

- Start with good effort and schedule estimates

- Create project plan to allocate resources with

  - The right capabilities

  - The right availability at the right time

- This information feeds the estimate which then feeds the project plan

- Accept change as a constant

Institutionalizing Project Planning

"Those who do not learn from history are doomed to repeat it."
-George Santayana

Image+Quote from FamousQuotesAbout.com

- Educate the organization

  – Project leadership must understand the triangle

  – Business leaders must buy into the triangle

  – **This discussion should be fueled with real examples from organizations history**

- Create processes (if they don't exist) for….

  – Historical data collection

  – Good estimating practices

  – Reconciling estimates against constraints and re-planning as things change

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Historical Data Collection

- Common definitions

  - Activities

  - Resources

  - Project Start and End

  - Metrics

- Data to collect

  - Scope (Size, Complexity)

  - Resources (Effort, Cost, Capability)

  - Schedule (Months)

- Start small

- Commit to data collection going forward

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PSITG2

They may already have PPM tools in place that they are not utilizing to tackle some of these issues

Information Technology Group, 8/2/2010

Good Estimation Practices

- Create and maintain links between
  - Scope
  - Resources / Cost
  - Schedule
- Repeatable methodology enforced by model(s)
- Align with historical data
- Cross checks important
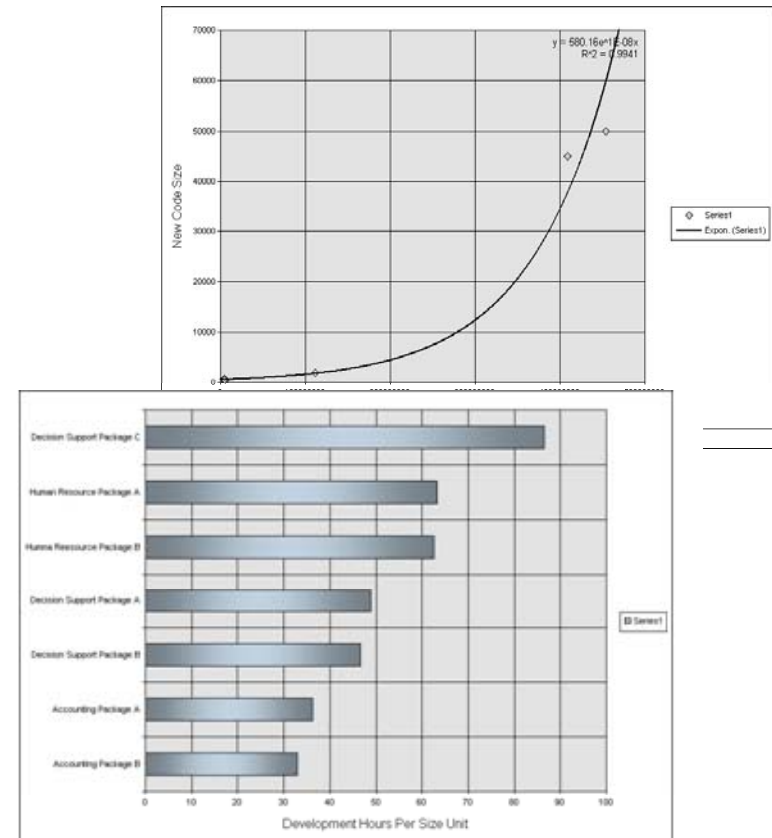
Reconciling For Constraints

- Estimating methodology produces estimate for….
  - Effort (Cost)
  - Schedule
- There are other project constraints
  - Time to market
  - Resource availability
- Create a process for negotiation around the triangle

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Conclusions

- Software project planning and management is complex

- Project Management Triangle creates a framework for discussion and negotiation

  – Project Leaders need to understand this

  – Business leaders need to accept this

- Organizations should institutionalize around the triangle with…

  – Good estimation practices

  – Good negotiation techniques

  – Communication and expectation management