

# Linking Business Process Models with Enterprise Resource Planning

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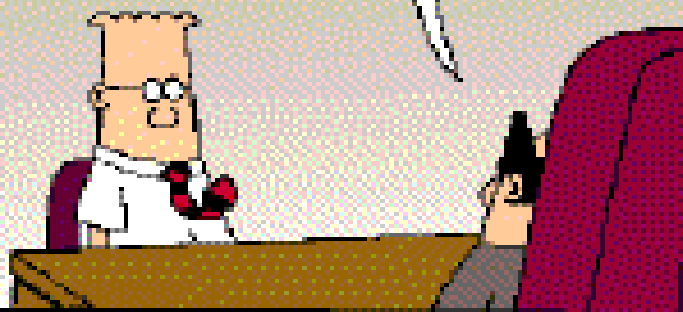
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# What's the Basis for This?

- Private Sector (ERP)
  - Oracle Human Resources outsource
  - Enterprise wide CRM
  - Peoplesoft to Oracle migration
- Federal Sector/DoD (ERP)
  - FAA
  - US Navy
  - US Air Force
  - US Army
  - CSC
  - Accenture

CAN YOU EXPLAIN WHY YOUR PROJECT IS BEHIND SCHEDULE?



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YES. A SCHEDULE IS AN ARTIFICIAL DEVICE CREATED WITHOUT KNOWLEDGE OF THE FUTURE.

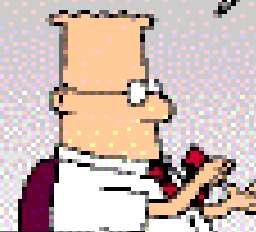


WILD GUESSES ARE USED AS SURROGATES FOR KNOWLEDGE.

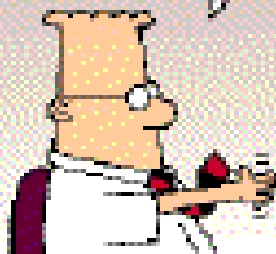


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PROJECT DEADLINES ARE TIED TO TRADE SHOW DATES INSTEAD OF REALITY.

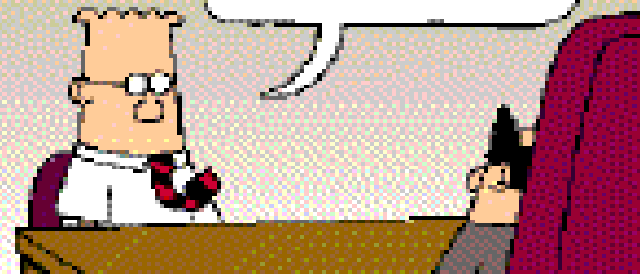


THEN MANAGEMENT CUTS THE BUDGET UNTIL FAILURE IS ASSURED.



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I ASSUME YOU CALLED ME HERE SO YOU CAN APOLOGIZE FOR YOUR ROLE IN ALL THIS.

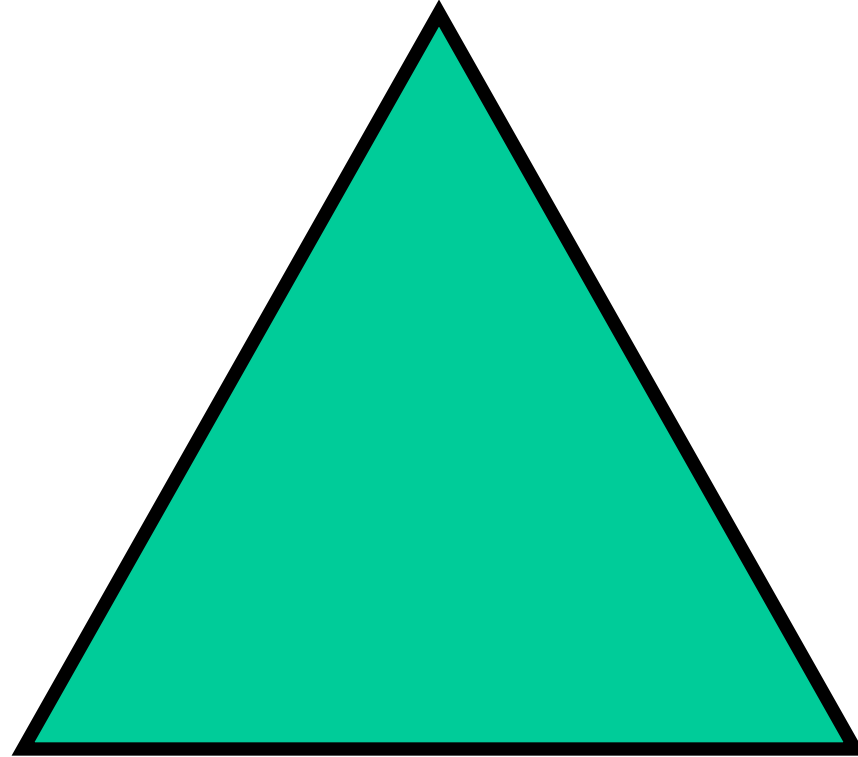


WOULD YOU LIKE TO HEAR HOW BUDGETS ARE CREATED?



www.dilbert.com

**SCOPE**



**SCHEDULE**

**BUDGET**

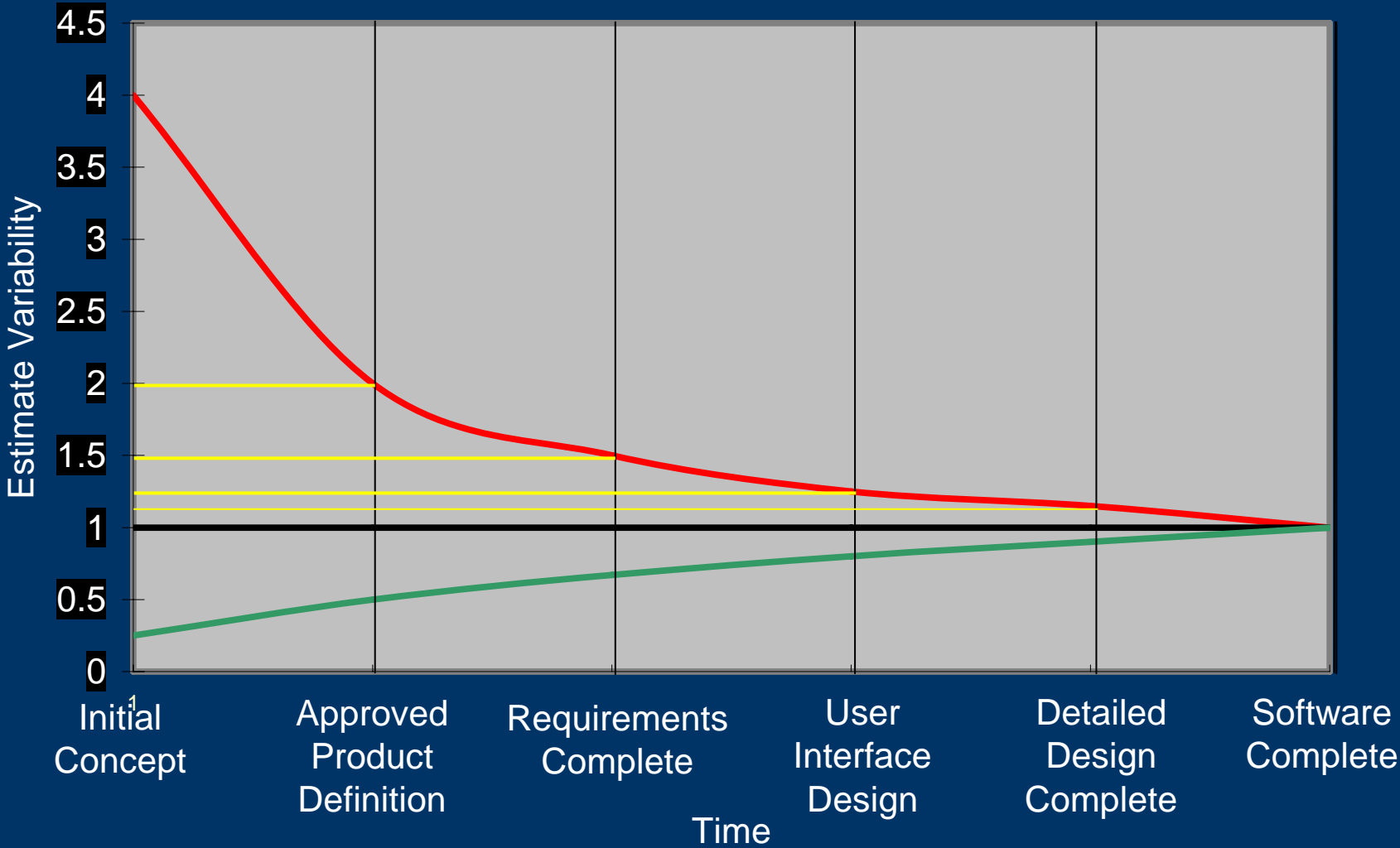
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# Our observations

- Successful ERP implementations manage all three corners of the triangle
- Failed ERP implementations attempt to manage just cost and schedule and they ignore scope
- Failed ERP implementations often assume 100% off the shelf solution only to find that they need/want a customized solution
- Federal Sector/DoD lack of consistency acquisition inhibits re-use
  - Different WBS and reporting requirements
  - Unique RFP formats per each program office
  - Unique metrics per each program office
- Whatever can be done to purchase and deploy ERPs in a more consistent fashion .....

# Cone of Uncertainty



# Best Practices ?

1. Standard Process
2. Corporate Memory
3. Data Collection and Feedback

# Standard Process

- A standard process exists which can be configured and utilized for each application and or project to estimate
  - Size
  - Effort
  - Schedule
  - Cost
  - Quality
- The process defines the data to be collected and the procedures to analyze and normalize data.
- The process defines how project data will be used to track and measure progress
- Rules for re-estimation are defined

# Standard Process

- A process is defined to evaluate the size of the projects
  - New
  - Adapted (it exists, it will be modified, then tested)
  - Reused (it exist, it will not be changed, it will be tested)
- A process exists to evaluate Commercial Off The Shelf Software (COTS)
  - Size of COTs
  - Evaluation and Selection effort/costs
- Process describes procedures to organize and retain information on completed projects.
- Training and documentation is available

# Best Practices Portfolio Management

	1	2	3	4	5
	Ad Hoc	Project	Application	Manage	Optimized
Projects	Project Driven	Application commonality	Basic commonality within applications  variation due to functional stovepipes	Basic portfolio commonality  Ad hoc issues are at application level	Advanced portfolio capability  Standard approaches are tailored for business needs
Applications	Limited visibility	Some cross project commonality is emerging  Still variation on a project by project basis			
Infrastructure	Functional stove pipes				
People	Project Based				
Process	Ad Hoc				
Information	Limited	Best practices starting to be identified and shared	Basic application and project data	Basic portfolio data	Detailed portfolio data
Cost Capability	<b>Project Based</b>		Consistency by Application	Cross application consistency	Consistency across portfolio

# Corporate Memory

- Database of past and current projects & benchmark data
- Process issues
  - Inconsistencies and anomalies are identified and corrected
- Data
  - Size
  - Effort
  - Schedule
  - Complexity
  - Quality
  - Project Characteristics

# Corporate Memory

- Capability benchmarks for
  - productivity,
  - quality,
  - schedule
  - throughput

# Throughput?

- Very often we know
  - How much staff we have
  - When we need to be done
- So we know what its going to cost and how long it will take
- We don't know what it is
- If we have
  - Historical data
    - Productivity
    - Size
- We can calculate "Throughput"

# Throughput examples

- 28 Source Lines of Code per staff month
- .25 Function Points Per Hour
- 1 Use case per staff month
- 12 hours per transaction & 18 hours per data entity

# RICEF

— Reports

— Interfaces

— Conversions

— Extensions/Enhancements

— *Forms*

— *Workflow*

— *Data Warehouse (Reports & Objects)*

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# RICEF Cost Drivers

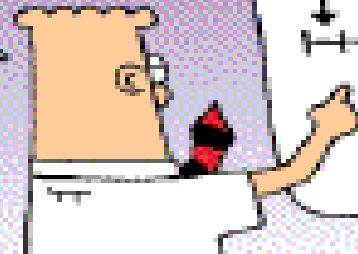
- Amount of functionality
- Types of functionality
- Complexity to learn and use ERP System
- Quality of user documentation, vendor support and training
- Experience of personnel with ERP System Implementations and this particular ERP System

THE ORIGINAL SCHEDULE LOOKED LIKE THIS...



ONE MONTH FOR A MANAGEMENT DECISION AND ONE YEAR TO DO THE PROJECT.

DECIDE



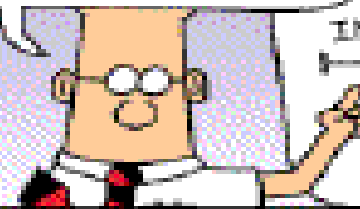
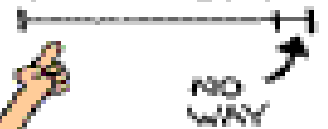
E-mail: SCOTTADAMS@aol.com

THE REVISED SCHEDULE IS THIS...



ONE YEAR OF INDECISION FOLLOWED BY INTENSE PRESSURE TO DO THE IMPOSSIBLE BEFORE THE DEADLINE.

INDECISION



# How much CRUD do you have?

*Create*

*Read*

*Report*

*Update*

*Delete*

*Data*

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### 3 Cost Estimates for the same RICEF

	<i>Unit Counts</i>			<i>Transaction Costs</i>	<i>Data Cost</i>
	<i>Transactions</i>	<i>Data</i>	<i>Total Cost</i>		
<i>What the CIO was asked to do</i>	15	4	\$182,400	\$122,143	\$60,257
<i>What IT added once they were asked</i>	148	31	\$1,710,000	\$1,205,143	\$504,857
<i>What the HR department added</i>	153	32	\$1,767,000	\$1,245,857	\$521,143
<b>Totals</b>	316	67	\$3,659,400	\$2,573,143	\$1,086,257

# CIO Level

	<i>Transactions</i>					<i>15</i>	<i>Data</i>	<i>4</i>
<b>CIO Request</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>1</b>
<b>Name</b>	<i>Create</i>	<i>Update</i>	<i>Delete</i>	<i>Read</i>	<i>Report</i>		<i>Save in File</i>	<i>Read from File</i>
<b>Core Employee Data</b>	1	1	1	1	2		1	1
<b>Online Help</b>	1	1	1	1			1	
<b>User Access Data</b>	1	1	1	1	1		1	

- Problem with Vanilla Strawberry Chocolate buckets is they don't tell you enough
- Need to relate ERP process models with the business processes they will replace
- Take it down to the transaction and data level
- Its not expensive, 1 to 2 days of work can manually accommodate entire suite of SAP functions
- If tools are in use for Business Process Modeling even faster

	<i>Transactions</i>				<i>148</i>	<i>Data</i>	<i>31</i>
<b>What IT knows</b>	<b>34</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>27</b>	<b>31</b>	
<b>Name</b>	<i>Create</i>	<i>Update</i>	<i>Delete</i>	<i>Read</i>	<i>Report</i>	<i>Save in File</i>	<i>Read from File</i>
<b>4 Alternate Data Feeds</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>4</b>	
<b>International Data</b>							
<b>UK</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	
<b>Japan</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	
<b>Germany</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>1</b>		
<b>China</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	
<b>Inputs from Hiring Function (7)</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	
<b>Business Units HR Functions (12)</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	
<b>Data Encryption</b>	<b>5</b>					<b>5</b>	

- Are all the business processes covered?
- Are all business rules included?

	<i>Transactions</i>				<i>153</i>	<i>Data</i>	<i>32</i>
<b>End User Inputs</b>	<b>32</b>	<b>27</b>	<b>27</b>	<b>27</b>	<b>40</b>	<b>32</b>	
<b>Name</b>	<i>Create</i>	<i>Update</i>	<i>Delete</i>	<i>Read</i>	<i>Report</i>	<i>Save in File</i>	<i>Read from File</i>
<b>Business Units</b>							
<b>HR Functions (12)</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	
<b>Data Encryption</b>	<b>5</b>					<b>5</b>	
<b>Report Writer</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>		<b>1</b>	
<b>Error Notification (Data Audit)</b>					<b>14</b>		
<b>Data push (Error Correction)</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	
<b>Data Pull (Error Correction)</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	

- Do we need all of this

# CRUDS Payback

- Where this technique has been used
  - Estimates are within 5% of actuals
- Non-adversarial conversations about scope change and analysis are possible
- Analysis of historical data provides value and is relatively inexpensive
- Communication is enhanced

# Bolt-Ons

- Bolt-Ons are external software packages that supplement capability not delivered as part of the ERP system

- **Links to Project management systems (Artemis)**
- **Links to ADP payroll**
- **Links to Business Objects reporting application**

- Bolt-Ons must be identified and interfaces must be developed to integrate them into the system

# Bolt-Ons Cost Drivers

- **Number of Bolt-Ons being integrated**
- **Amount of functionality delivered by Bolt-Ons**
- **Types of functionality delivered by Bolt-Ons**
- **Experience of team with ERP implementations and integrations**
- **Quality of user documentation, vendor support and training.**

# Customization

- Custom code needs to be developed when
  - **Required functionality not available in ERP System or through Plug Ins**
  - **Legacy code required adaptation to interface with ERP System**

# Customization

- Cost drivers for customization are the same as for any software development with adjustments for
  - **Quality of documentation, training and support**
  - **Experience of integration team with ERP System**
  - **Maturity and stability of the ERP System**
  - **Vendor cooperation**

# Integration & Test

- Before deployment, need to ensure that ERP System satisfies requirements and operates with out failures
- Requirements relating to performance, reliability and security could be problematic

# Integration & Test Cost Drivers

- Total functionality being integrated
- Quality, performance and reliability requirements
- Integration team productivity
- Integration difficulty
- Number of components and bolt-ons

# Deployment

- Deployment includes:
  - **Pilot programs**
  - **Installation throughout the organization**
  - **Training**
  - **Support**
  - **Change management**

# Deployment Cost Drivers

- Size of organization
- Number of geographical locations
- Experience of deployment team
- Vendor involvement and cooperation
- Number and complexity of new business processes

# Maintenance and Support

- Deployment of vendor upgrades
- Bug fixes for customized code and interfaces
- Field support

# Maintenance and Support Cost Drivers

- Size of organization
- Number of sites
- Size of total functionality delivered
- Amount of functionality that is custom built
- Number of interfaces
- Integration Complexity