

Smart Decisions

How to make them by aligning projects, agile teams and success with measurable business goals

Ryan Shriver => rshriver@dominiondigital.com

Managing Consultant => Dominion Digital

Agenda

*** IT Project Performance**

*** Evolutionary Delivery**

*** Case Study**

Bio

Publications => dominiondigital.com/agile

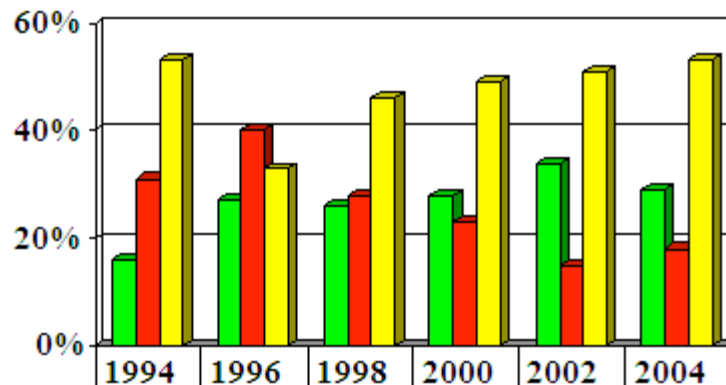
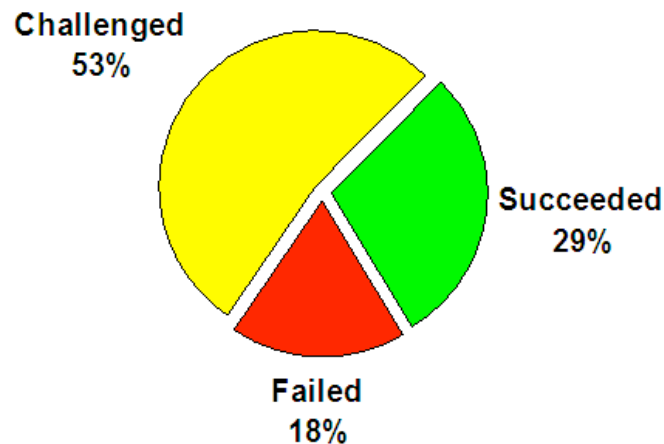
- [Degrees in Computer Science and Business Administration
- [Started working with internet technologies in 1995 at Digital Creations (now Zope Corporation)
- [Worked primarily with Java systems since 1998 (Rails more recently)
- [Primarily in technical architecture roles since 2001
- [Lead 100+ person agile development effort for last 3 years building a Loan, Lease and Recovery suite of products used by Fortune 50 customers
- [More recently specializing on agile transitions and introducing agile for non-IT endeavors
- [Starting to write and speak more about my thoughts and experiences

IT Project Performance 1994 - 2004

CHAOS 2004

SURVEY RESULTS

Resolution of Projects



Succeeded	16%	27%	26%	28%	34%	29%
Failed	31%	40%	28%	23%	15%	18%
Challenged	53%	33%	46%	49%	51%	53%

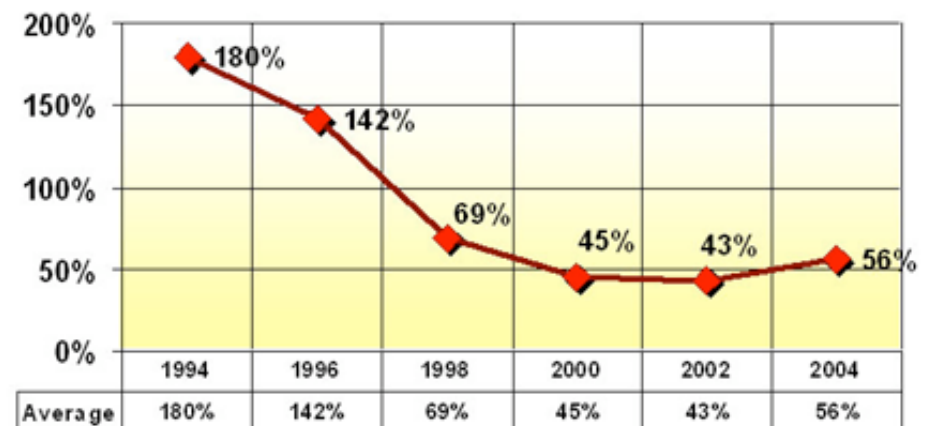
In 2004, if this was the original cost estimate



On average this is what it actually cost



1994-2004 Average Percent of Cost Overrun



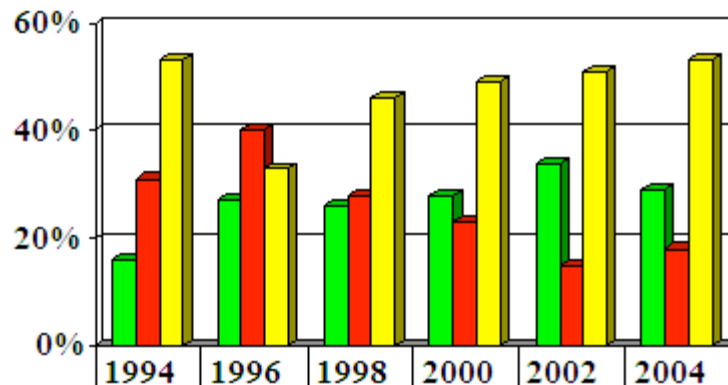
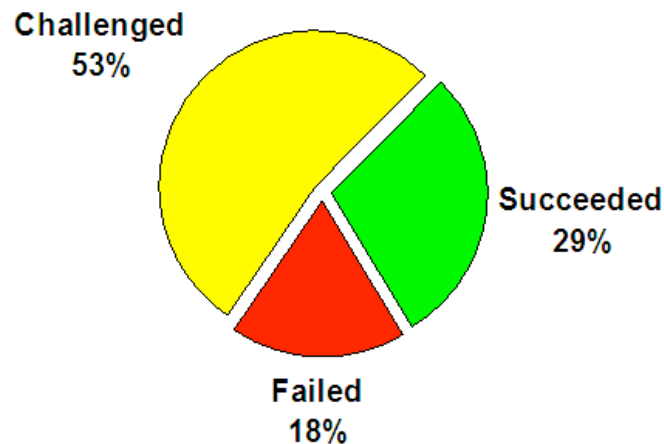
Year: 2004, Source: CHAOS Database: CHAOS surveys conducted from 1994 to Fall 2004. Results: shows average percent of cost above their original estimate.

IT Project Performance 1994 - 2004

CHAOS 2004

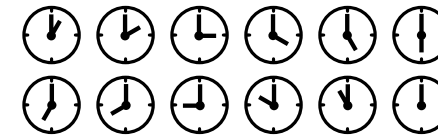
SURVEY RESULTS

Resolution of Projects

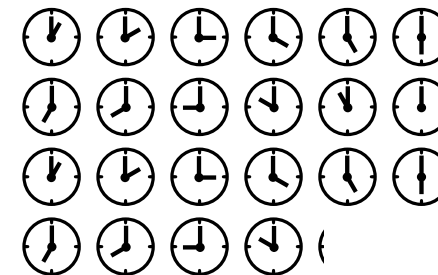


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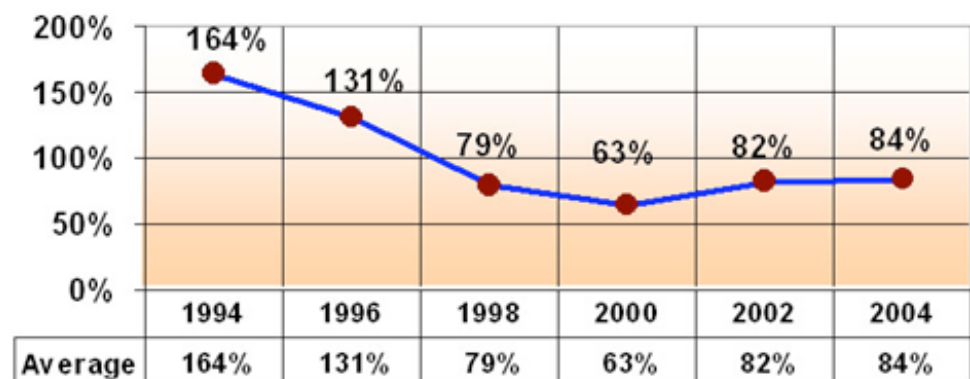
In 2004, if this was the original time estimate



On average this is how long it actually took



1994-2004 Average Percent of Time Overrun

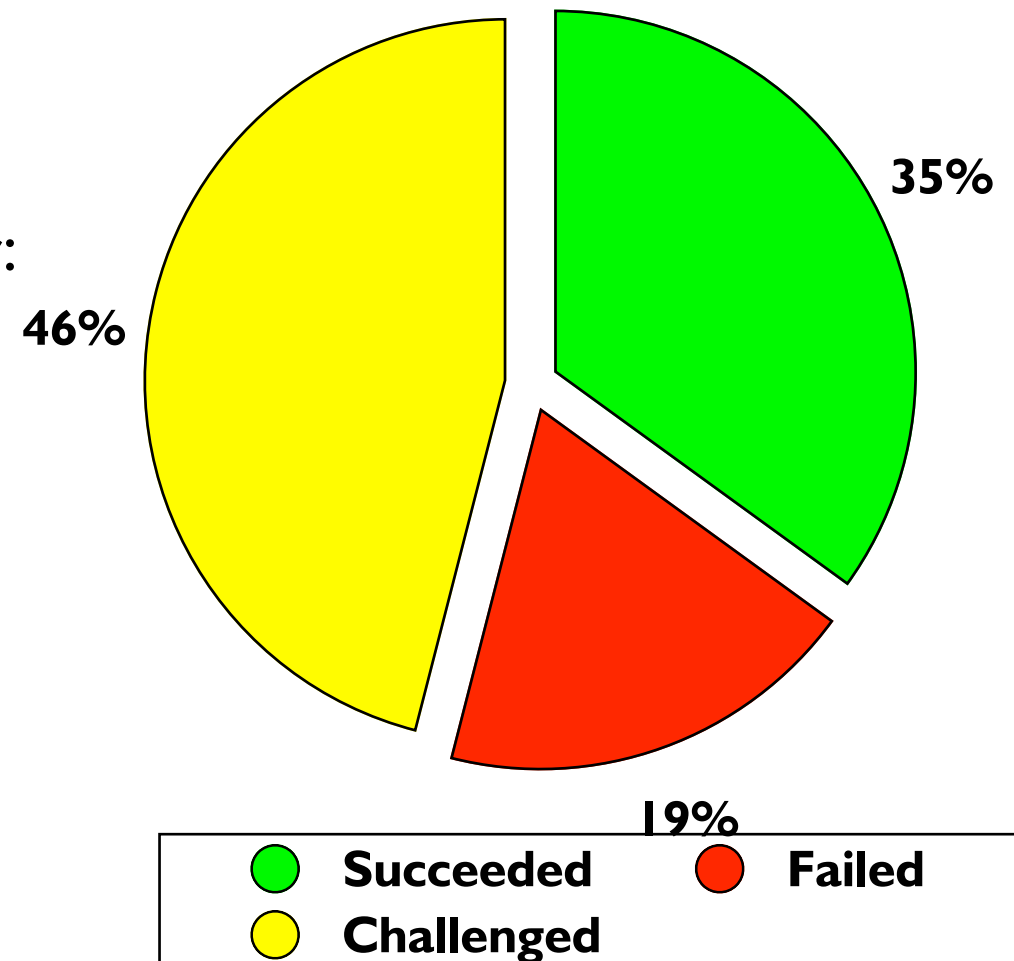


Year: 2004, Source: CHAOS Database: CHAOS surveys conducted from 1994 to Fall 2004, Results: shows average percent of time above their original estimate.

What about now?

2006 CHAOS Report

- 2006 CHAOS is the first report since 2004
- In 2006, 65% of projects either:
 - Challenged (over budget and over time)
 - Failed (cancelled or finished but not used)
- There are improvements since 2004, but still a long way to go.



What's behind the improvement?



Top Ten Reasons for Success

- ✓ 1. User Involvement
- ✓ 2. Executive Management Support
- ✓ 3. Clear Business Objectives
- ✓ 4. Optimizing Scope
- ✓ 5. Agile Process
- ✓ 6. Project Manager Expertise
- ✓ 7. Financial Management
- ✓ 8. Skilled Resources
- ✓ 9. Formal Methodology
- ✓ 10. Standard Tools and Infrastructure

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“I think that's [Agile] the secret - incremental. I think that's why we're seeing improvement.”

Jim Johnson - Founder and Chairman of the Standish Group *from August 2006 interview about the CHAOS report*

Agile is an improvement but it's not enough

- **Yes they work** - Agile methods (XP, Scrum) have proven themselves adept at delivering results quickly and agile is becoming more mature and accepted in the industry
- **But where's the alignment with business value?** - Popular agile methods such as XP and Scrum ***don't provide guidance*** on ensuring the agile team is implementing solutions with the “biggest bang for the buck” and that business is getting the best value for their money!
- **Alignment to Measurable Goals** - In order for agile methods to transform not only software projects but also the way businesses implement change across their organization, teams using agile methods must align their work with higher-level business goals and measure their results with respect to helping organizations achieve their goals!

*“Just because you're Agile doesn't mean you're making Smart Decisions.
Scrum and XP alone aren't enough!”*

We need a framework to help us make Smart Decisions

- **Measuring Progress towards Goals** - Defining measurable goals and recording before and after metrics to see if our solution really delivered value
- **Judicious with our Budget** - With our resources and investments of time and money to ensure they're focused on the right projects. We're not funding projects that can't quantify how their solutions produce measurable progress towards the prioritized business goals (*If you can't deliver results with 10% of the budget, what makes you think you can deliver results with 100%?*)
- **Inspecting and Adapting** – Ensuring our investments are delivering measurable results using **performance-to-cost** ratios and **percent-to-goals** metrics. We're adapting to changing conditions on the ground using iterative planning and PDSA (Plan-Do-Study-Act)
- **Utilizing People, Process and Technology** – Using the right balance of each to deliver well thought out solutions that maximize overall operational performance and don't simply “speed up the mess”
- **Delivering value iteratively** - Utilizing popular agile methods (like Scrum and XP) to deliver the business value incrementally.

We need more than Agile, we need Evolutionary

Evolutionary Delivery

Evo Concepts

Scrum Concepts

Budgets

Goals

Design
Ideas

Impact
Estimation

Requirements
Specification
w/ Planguage

Estimation
Planning, &
Tracking

Team
Roles

Stand Up
Meetings

Estimation
Planning, &
Tracking

Software Development Track

- *Extreme Programming (XP) Principles*
- *Test Driven Development (TDD) Principles*

Process Improvement Track

- *Lean Principles*

Evolutionary Quotes

If well understood and consciously harnessed, evolutionary processes can be a powerful way to stimulate progress. And that's exactly what the visionary companies have done to a greater degree than comparison companies -
Jim Collins and Jerry Porras, "Built to Last"

Evolutionary Quotes

Instead of directing business according to detailed...strategic plan, [Jack] Welch [General Electric CEO] believed in setting only a few clear, overarching goals. Then, on an ad hoc basis, his people were free to seize any opportunities they saw to further those goals. - Noel Tichy and Stratford Sherman, "Choose Your Own Destiny or Someone Else Will"

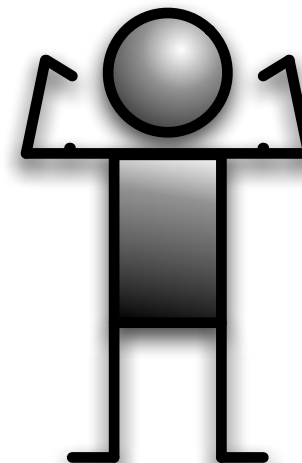
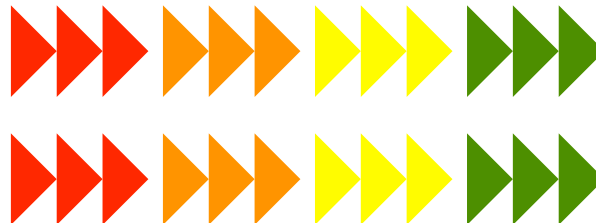
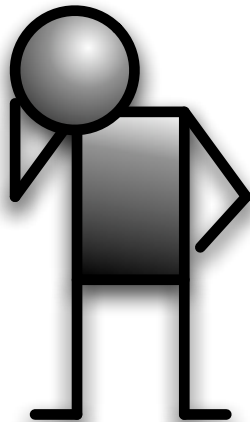
But first we need to think differently

We're thinking...

Instead of thinking...

We want to do a project for a new system. What features will it have, how much is it going to cost and when will it be done?

We've got a specific amount of money to invest in new projects. What are our highest priority business goals and where should we focus our resources to help us best achieve them?



We deliver value using time-boxed iterations and continue to fund projects only if they deliver measurable business results each release. Otherwise cancel the project (and preserve our resources for another project)!

BUILT TO LAST

SUCCESSFUL HABITS OF VISIONARY COMPANIES

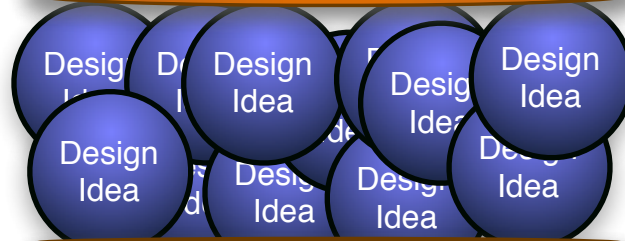
JIM COLLINS
(Bestselling author of *GOOD TO GREAT*)
JERRY I. PORRAS



Core Ideology
Core Values
Purpose

Envisioned Future
BHAG's
Vivid Descriptions

Stakeholder Worldview Interviews
Ideation Workshops



Analysis Workshops
Apply Design Criteria



Final Selection

Chosen Design Idea



- * Capture Current State
- * Identify Initiative Goals
- * Brainstorm Design Ideas

- * Analyze Design Ideas
- * Develop Design Criteria
- * Select Design Idea Candidates

- * Perform Impact Estimation
- * Agree on Design Idea
- * Get approval to go forward

Ideation
2 to 8 weeks



Evolutionary Delivery Part 2

Scrum Team



Product Owner: Sets priorities
 Scrum Master: Removes Blocks & Manage Process
 Team: Develop business capability
 Stakeholders: Observe & Advise

Daily Scrum(15 min):
 What you did yesterday?
 What you will do today?
 Identify obstacles to work?

Daily Scrum
 Every 24 Hrs

Sprint Backlog
 List of task owned by Scrum Team
 Only they can modify it
 Built from Product Backlog

Sprint
 1 to 4 Week
 Duration

Sprint
 Backlog

Product
 Backlog

Chosen
 Design
 Idea

Product Owner & Stakeholders



New
 Capability
 Demonstrated
 at the End of
 Each Sprint

Program Backlog:

- Monitoring "Percent to Goals" and Budget
- Feedback into Phase I (Design Ideas)

Task Task Task Task Task

Task Task Task Task Task

Task Task Task Task Task

Task Task Task Task Task

Let's look at some of the concepts in detail..

Evolutionary Delivery

Evo Concepts

Scrum Concepts

Budgets

Goals

Design
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Requirements
Specification
w/ Planguage

Estimation
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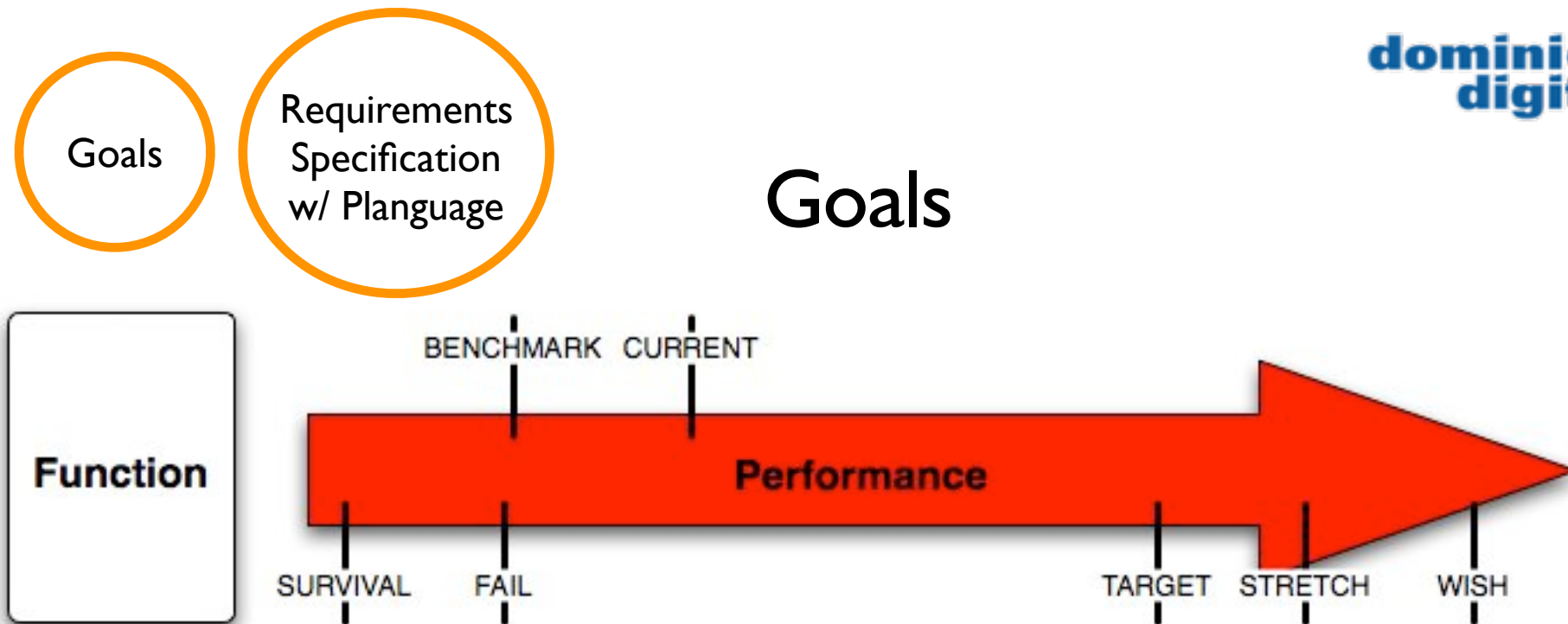
Estimating
Planning, &
Tracking

Software Development Track

- *Extreme Programming (XP) Principles*
- *Test Driven Development (TDD) Principles*

Process Improvement Track

- *Lean Principles*



Scale and Measurement

Scale: <Scale of measure for the requirement (States the units of measure for all the targets, constraints and benchmarks) and the scale qualifiers>

Meter: <The method to be used to obtain measurements on the defined Scale>

Benchmarks

Past [<when, where, if>]: <Past or current level. State if it is an estimate> <- <Source>

Record [<when, where, if>]: <State-of-the-art level> <- <Source>

Trend [<when, where, if>]: <Prediction of rate of change or future state-of-the-art level> <- <Source>

Targets

Goal/Budget [<when, where, if>]: <Planned target level> <- <Source>

Stretch [<when, where, if>]: <Motivating ambition level> <- <Source>

Wish [<when, where, if>]: <Dream level (unbudgeted)> <- <Source>

Constraints

Fail [<when, where, if>]: <Failure level> <- <Source>

Survival [<when, where, if>]: <Survival level> <- <Source>

Goals

Requirements
Specification
w/ Planguage

Goals Examples

Function



Goal: Develop the capability to rapidly build and deploy new decisioning rules

Scale: Elapsed time in hours from idea to production upgrade of new decisioning rules that follow a pre-defined pattern

Target: < 1 hour

Fail: > 6 hours

Meter: Wall clock time

Goal: Acquire 2 new B2B clients and launch them on Release 2 of <Solution Name>

Scale: New clients put into production with transactions flowing between parties

Target [2007]: 2

Fail [2007]: 0

Meter: Cognos report from analysis database

Goal: Ability for a trained business analyst to update the offer decision rules directly

Scale: Time in minutes for trained analyst to update offer rules and run test to validate change

Target: [2007] < 10 mins; [2008]: < 2 mins

Fail: > 15 mins

Meter: Elapsed time as measured from user interface using wristwatch

Budgets

Budgets

- Essentially “How much money and/or time do you have to spend on design idea(s)?”
- Expressed in terms of:
 - Impacting all goals (i.e. program budgets)
 - Implementing a design idea (i.e. project budget)
- Used to:
 - Calculate if project is delivering value in evolutions
- Types:
 - Money
 - People effort (months, weeks, days, hours)

Design Ideas

- Represent “What we’re going to do in order to meet our goals”
- Can be specified at most any level. Early brainstormed design ideas can be short descriptions. Examples include: “Implement CRM system”, “automate customer letter process”, “reduce duplicate data entry for new accounts”.
- Final design ideas will be more fully specified to include performance and resource estimates, impact estimation and process analysis.

Design Idea

Tag: <Tag name of the design idea used for referencing. This will likely be the root level tag (A) in a hierarchy of tags is preferable (for example A.B.C) >

Vision: <Brief description, capturing the essence of this design idea.>

Version: <Date of last update to this design idea>

Owner: <Person who’s responsible for this design idea >

Ambition: <Summarize the ambition level of the targeted impacts to goal(s) with this design idea. Give the overall real ambition level in 5–20 words>

Estimating, Planning & Tracking

- Estimating with Evo means estimating the impact of one or more design ideas with respect to achieving the goals (Impact Estimation)
- Tracking with Evo means tracking “percent to goals” and progress being made with respect to reaching goals
- Planning with Evo means prioritizing the goals to achieve and focusing design ideas with respect to achieving the highest priority goals first

Impact
Estimation

Design
Ideas

Impact Estimation

Sub Goal: Reduce time to gather instructions and forms from 20 minutes to 2 minutes		Design: Build New Accounts Wizard	Design	Design		Totals
Current Benchmark	mins	20	20	20		
Target Goal	mins	2	2	2		
Scale Impact of Design	mins	18	0	0		18
Scale Uncertainty of Design	+ / - mins	2	0	0		2
Percentage Impact	on design	100%	0%	0%		100%
Percentage Uncertainty	percentage	11%	0%	0%		0%
Evidence	based upon	Anecdotal. Best guess				
Source	person or doc	Scott Skowronski [6/7]				
Credibility	and 1	0.7				
Costs to Implement						
Solution Owner	effort hours	40	0	0		
Analysis	effort hours	80	0	0		0
Development	effort hours	110	0	0		0
Testing	effort hours	20	0	0		0
Total Resources	effort hours	250	0	0		0
Performance to Cost Ratio	of design	0.400	#VALUE!	#VALUE!		
Credibility-adjusted Performance to Cost Ratio	factored in	0.280	#VALUE!	#VALUE!		

Impact Estimation

Impact

Design

Est

Goal: Increase Time to Sell (Individual hours devoted to direct sales activities) from 12 hrs/wk to 28 hrs/wk (30% to 70% of their time)

Design: Build New Accounts Wizard

Design: Electronically send data to SOR

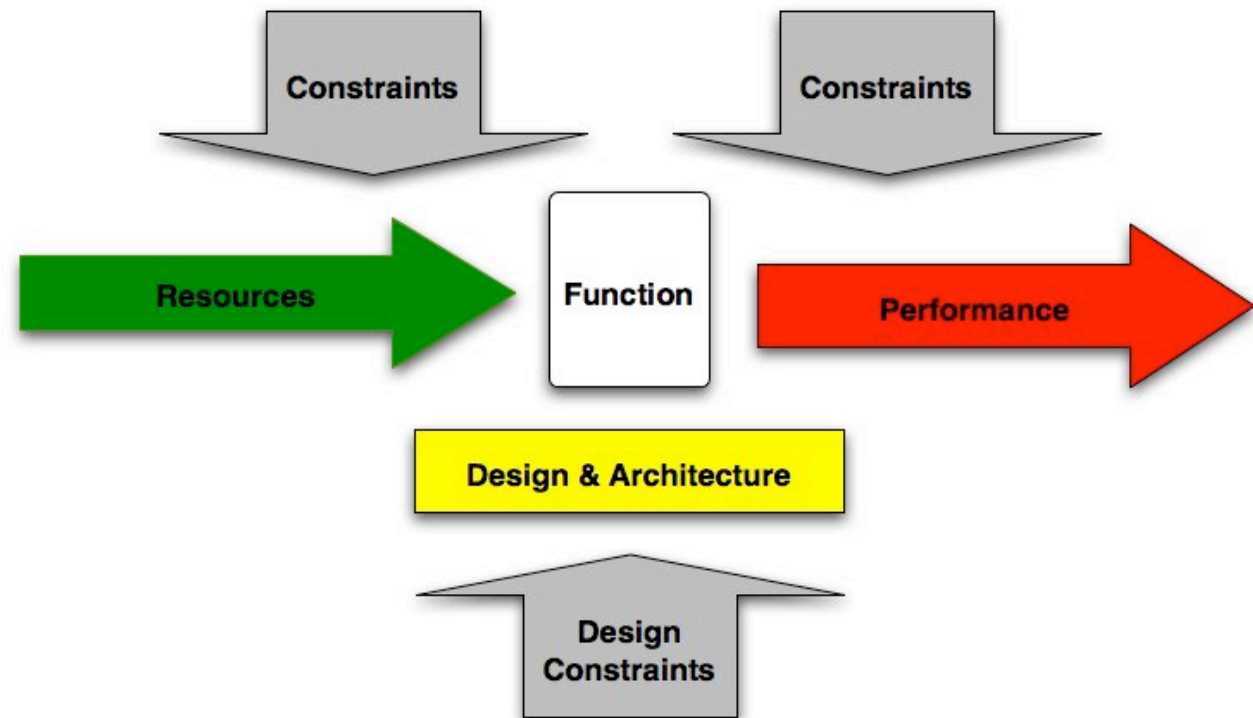
Design

Totals

Current Benchmark	12 hrs / wk	12	12	12	
Target Goal	28 hrs / wk	28	28	28	
Scale Impact	hrs / wk	1	2.5	0	3.5
Scale Uncertainty	+ / - hrs/wk	0.5	1	0	1.5
Percentage Impact	on design	6%	16%	0%	22%
Percentage Uncertainty	percentage	3%	6%	0%	9%
Evidence	based upon	Aneecdotal	High level estimate		
Source	person or doc	Ryan [06/18/07]	Ryan [06/20/07]		
Credibility	and 1	0.7	0.5		
Costs					
Solution Owner	effort hours	20	30	0	
Analysis	effort hours	70	200	0	270
Development	effort hours	100	300	0	400
Testing	effort hours	20	60	0	80
Total Resources	effort hours	210	590	0	800
Performance to Cost Ratio	of design	0.030	0.026	#VALUE!	
Credibility-adjusted					
Performance to Cost Ratio	factored in	0.021	0.013	#VALUE!	

Requirements
Specification
w/ Planguage

Requirements Specification



Basic Information

Written in Planguage, a “language” for requirements specification developed by Tom Gilb

Tag: <Tag name of the requirement used for referencing. A hierarchy of tags is preferable (for example A.B.C) >

Type: <Functional Requirement: {Feature, Function},

Performance Requirement: {Quality, Resource Saving, Workload Capacity},

Resource Requirement: {Financial, Time, Headcount, others}>

Category: <Vital, Profitable, High Risk, others>

Sponsor: <Role/e-mail/name of the person responsible for this specification>

Stakeholders: <Name any stakeholders with an interest in this specification>

Gist: <Brief description capturing the essential meaning of the requirement> <- Source

Description: <Optional, full description of the requirement>

Ambition: <Summarize the ambition level of only the targets below. Give the overall real ambition level in 5–20 words>

Requirements Types

Vision Requirements: *at the highest level, the future direction and top measurable goals for a system.*

Function Requirements: *what a system has to do : the essence of a system, its mission and fundamental functionality.*

Performance Requirements: *the performance levels that the stakeholders want – their objectives. How good? These can be further classified as:*

Qualities: *how well the system performs, for example: usability, availability and customer satisfaction.*

Resource Savings: *the required improvement in resource utilization: relative economic and other resource savings compared to defined benchmarks. These are known simply as Savings.*

Workload Capacities: *how much the system performs. In other words, the required capacity of the system processes. For example, system peak processing volumes, speeds of execution and data storage capacity.*

Resource Requirements: *the levels of resources that stakeholders plan to expend to develop and operate a system. Resources have to be balanced against the stakeholders perceived values gained from the system functions and the system performance levels.*

Constraints:

Design Constraints: *these are any design ideas that must be included in the system design.*

Condition Constraints: *these are any additional constraints to those imposed by the function requirements, the performance requirements, the resource requirements and the design constraints. Condition constraints are often used to capture system-level constraints (for example, the system must be legal in Europe).*

Team Roles

- Use Team Roles from Scrum:
 - Product Owner
 - ScrumMaster
 - Scrum Team
 - Analysts / Subject Matter Experts (SME's)
 - Architects / Developers
 - Testers

Daily Stand Up Meetings

- Daily meetings where everyone is available in person or on the phone
- < 15 minutes in length
- Just a quick recap per person of:
 - What did you complete yesterday
 - What are you working on today
 - Do you have any obstacles that need to be removed

Estimation, Planning & Tracking

- Use Release and Sprint (aka Iteration) planning from Scrum
- Setup planning meetings with Scrum team and Product Owner at beginning of project and each Sprint:
 - Identify tasks for the backlog and prioritize (Product Owner & Scrum Team)
 - Determine team's "task capacity" for next Sprint for each team member (can be done offline)
 - Team chooses which tasks will be done in the next Sprint and commits to doing work
 - Specific developer(s) commit to tasks and provide estimates. Task capacity is updated until all developer are approximately 100% utilized.

Estimating
Planning, &
Tracking

Capacity Planning a Sprint

Tracking Progress

- Progress is tracked with “cards on the wall” or using online tool to manage tasks (Not Started, In Progress, Done)
- Status is updated after daily stand-up meetings
- Use of burndown charts for Release and Iteration are optional (but encouraged)
- Progress is reviewed at each beginning of each Sprint planning meeting where system is demoed to Product Owner and entire team

Evolutionary Case Study

Dominion Digital helps Financial Services company implement change
using agile teams aligned to measurable business goals

April - June 2007

Organization and Project Background

- Financial Services company aligned into three major business segments: The Business Bank, The Retail Bank, Wealth Management
- Project initiated by IT group with collaboration from business segment
- Never done agile before but wanted to “learn by doing” with experienced partner who could guide them
- Wanted their team to deliver measurable business results on a real project in a short time period
- Wanted solution to incorporate some aspect of people, process and technology in the solution

Our Approach



1. Interviews and workshop with the business stakeholders to define top business goals (4) and project goals (2)
2. Workshops with business and IT to brainstorm design ideas for achieving project goals that, if implemented, would produce measurable results (13 design ideas identified)
3. Asked business to vote on which design ideas were their highest priority (narrowed 13 design ideas to 7)
4. IT defined the design idea acceptance criteria to determine which of the 7 highest priority design ideas were feasible to deliver in 6 weeks
5. IT selected the top 2 design ideas for implementation and worked with the business to choose the best one for implementation
6. Used an Agile method (Scrum) to breakdown the chosen design idea into tasks that were scheduled into a six-week release using 3 x 2 week iterations (Sprints)
7. At the end of Release 1, released system to production and starting measuring the system's impact on the project goals. Provided business with options including funding another release with more features, doing another design idea or stopping altogether

The Solution

- “New Accounts Wizard” is a web-based system that asks users a series of Yes/No questions. Based on their answers, the system provides them with the correct forms and instructions for completing the new account opening process for 24 different account types
- Released to business on June 21st and rolled out to an initial group of pilot users (20). Current plans are to rollout to all users (80+) by mid July.
- Solution aligned to engagement goals “Give us more time to sell” and “Enable straight through processing” and business goal “Increase Revenue”

Our Results

- Principle scale of measurement was *“increased hours sales personnel could devote to direct sales activities per week”*
- Solution reduces the time for sales personnel to gather all forms and instructions for opening a new account from 15-20 minutes to less than 2 minutes
- Impact Estimation on Engagement Goals:
 - Increased time to sell (hours): 1/week, 48/year
 - Enable straight-through processing (reduce error rate):
From 3% to < 1%

Retrospective Results and Lessons Learned

- **Focused Teams** – Small, focused teams of motivated individuals can achieve extraordinary results in short periods of time, even in organizations that are new to agile.
- **Organization Structure** - Current structure had analysts and developers reporting to different managers which made allocating resources difficult. Next time try to get 100% dedicated resources to assemble cross-functional teams.
- **Production Rollout** – Setting up and migrating the system through all environments (Dev, QA, Prod) required longer lead times than had been anticipated. Next time start engaging product rollout and support teams from day one of the project to accommodate the required lead times.
- **Co-Location** – Team was not co-located which delayed feedback and decision-making within the team. Next time push for everyone to be co-located (or at least in the same building/floor).

Actual quotes from project members

- “I wanted to take a minute to thank you all, on behalf of a lot of people, for all of the effort that you've put into this project. Your partnership, knowledge and expertise (not to mention patience when dealing with my crazy ideas!) has provided us with a tool that will be used and appreciated by many people in our organization. It was a pleasure to work with all of you on this project and I am hopeful that we are able to work together in the near future to develop "Phase II" of this project.” – *Solution Owner*
- “It was a ‘Feel Good Project’ for me” - *Developer*

Summary

1. Measurable business goals can be defined and results achieved in 2 months, even for organizations that are new to agile
2. Agile IT projects can be aligned to business and engagement goals using a combination of both Evo and Scrum methods
3. Large organizations can successfully adopt agile methods but should start small and get “quick wins” with early pilot projects to gain experience before broader agile adoption
4. Expertise is needed to help organizations and teams through their agile adoption. A “hands on approach” to project mentoring and guidance working side-by-side with the team work very well

Next Steps

“We need to fundamentally raise the bar in the industry. We will do this by developing an approach so sound that 100% of all projects that use the approach will deliver measurable business value, on time, on budget and with high quality. No Exceptions.” - Ryan Shriver

- Fall 2007 - Alpha release of Evolutionary Delivery framework internally to DDIG
- Spring 2008 - Beta release of framework externally (maybe open source?)
- 2009 - Become the US Leader in Evolutionary Delivery with 100% of all DDIG projects using this approach