

INNOVATING PRODUCTS

FASTER:
45 IDEAS *

ADVANCED PROJECT MANAGEMENT FOR PRODUCT DEVELOPMENT

EVENING
PRESENTATION

June 11, 2013

Presented by John Carter in conjunction
with IEEE-CNSV

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** Well, 12 if you are counting*



THE SAN FRANCISCO BAY BRIDGE



Length: 8.4 miles
Opened Nov. 1936

Time to Build: 3.5 years
Cost \$77M

THE SF BAY BRIDGE – NEW SECTION



Length: 3 miles

Original Cost Est: \$780M

Current Cost Est: \$6.3B

Planning time: 11 years

Construction began: Jan. 2002

Still under construction (after 11 more years)

What's Wrong with This Picture?

THIS TALK

- All kidding aside, product development can take way longer than it should!
- Were here to talk to you tonight about how you can shorten your product development time through application of Advanced Project Management Principles illustrated in our book “Innovate Products Faster”.
- Specifically, we would like to share with you key topics from our book on improving execution and innovation in Product Development.
- We can’t present all of the 45 best practices in the book, but we can give you a sample of some of the best and most impactful.
- Because so many of today’s projects involve Partners, Distributed teams, and Software, we would like to use these themes to illustrate this talk.
- The talk will also talk about the writing of the book “Innovate Products Faster” as it describes how literally anyone (meaning YOU) can write a book.

INNOVATE PRODUCTS FASTER

Biography – Experience with Innovation & Execution



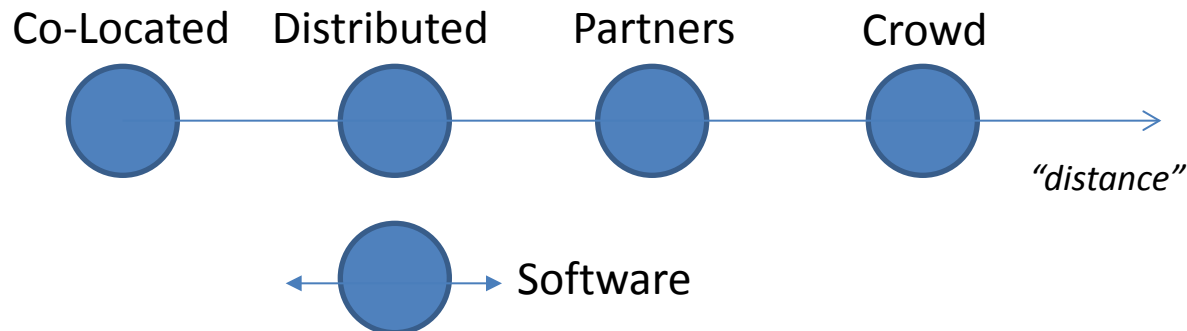
- Invented the Bose Noise Cancelling Headphone and hold the original patent on noise cancellation
- Developed the Apple New Product Process (ANPP) which is used by all Apple product divisions, including the iPhone teams
- Former Chief Engineer of Bose, responsible for some of the most innovative products such as the Wave Radio and Home Theater Systems
- Consulted to leading companies including Apple, Bose, Cisco, Dolby, HP, IBM, Xerox, and 3M
- Member, Board of Directors, Cirrus Logic (CRUS)

LEARNING COMPONENTS IN THIS TALK

- Managing Partners
 - Timeline
 - Toolbox
- Managing Distributed Teams
 - Virtual Personal Assistants
 - Social Innovation Techniques
- Managing Software Development
 - Agile vs. Waterfall
 - Bug Scrub
- Writing your First Book
 - Writing Strategy
 - Bottom Line

Tonight, you will learn:

1. Techniques for managing Distributed Teams that you can apply immediately
2. Examples of Open Innovation to help your team define programs and priorities
3. Agile methods to create project Burn Down charts
4. How to professionally publish your first manuscript



QUESTION?

How does Project Management today differ from what it was 10 years ago?



ADVANCED PROJECT MANAGEMENT VS. TRADITIONAL PROJECT MANAGEMENT

Advanced Project Management	Traditional Project Management
Select competencies	Heavy on generic competencies
Iterative development	Waterfall development model based
Distributed teams	Team located together
Social/Open methods	Contributors employed by company
Joint Development models	All design work done in house
Collaborative partnership model	Un-trusting partnership model
Open & trusting culture	Hierarchical culture
Employ collaboration technology	Email and static reports
Minimum viable product	Each product is a major release
Leverage personal agents	The burden is on you and you alone
Software	Hardware
Cloud (releases in days)	Client (releases in months)

There are profound changes in how fast paced development is conducted and project management training has not kept up!

SOFT SKILLS - LEVERAGING



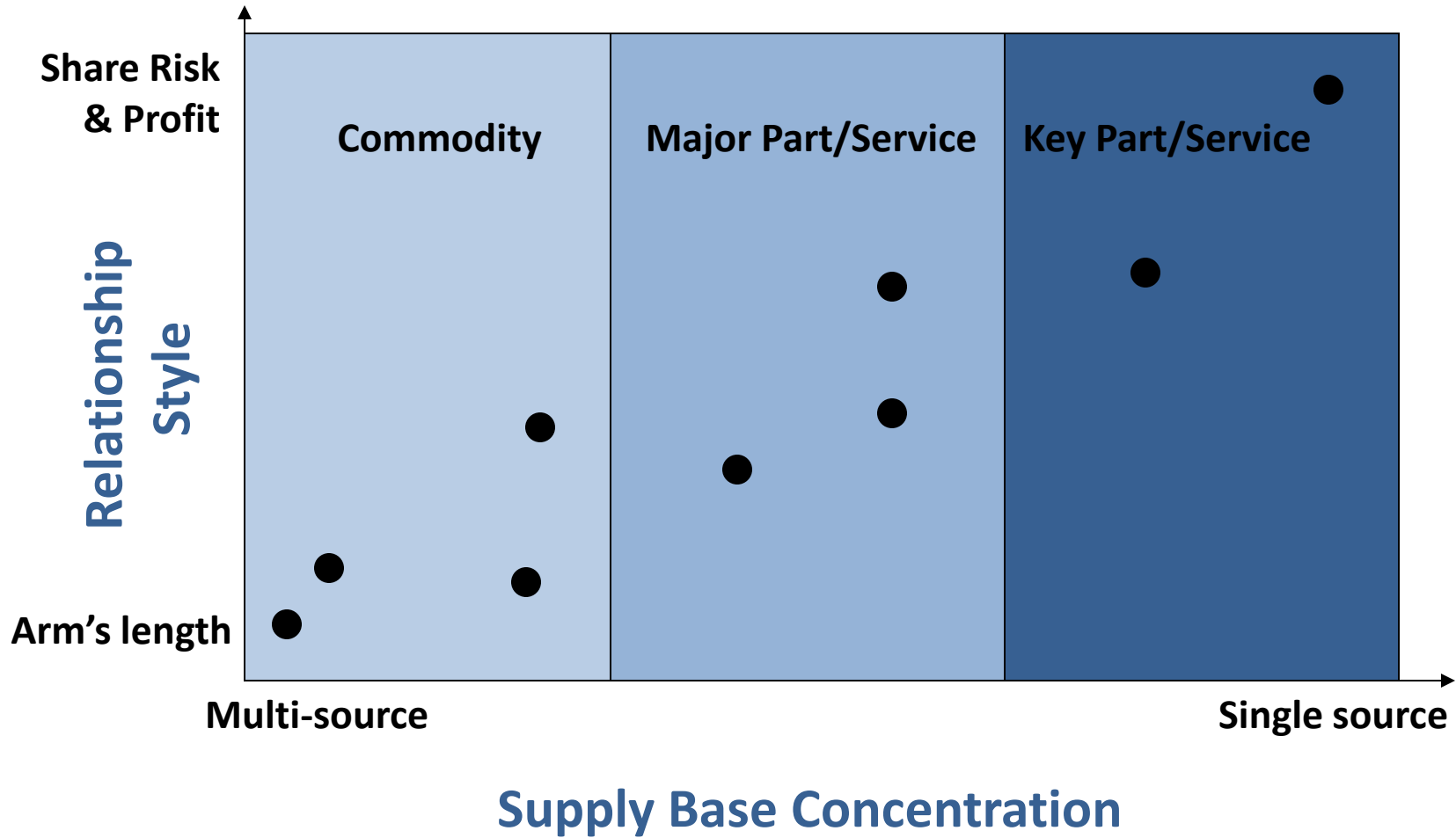
These soft skills apply to
Distributed Teams, Too!

A successful Program Manager
has these critical soft skills

- Trusts the partner – without trust there is little hope for transparency
- Treats the partner as a team member, not an outsider
- Trusts but verifies progress continually
- Develops a personal relationship with the partner & their top management

Smoothness... How do we achieve it? By having the ability to monitor the critical path which has built in short interval feedback elements that actively alert you to delays.

SUCCESSFUL COLLABORATION MODELS



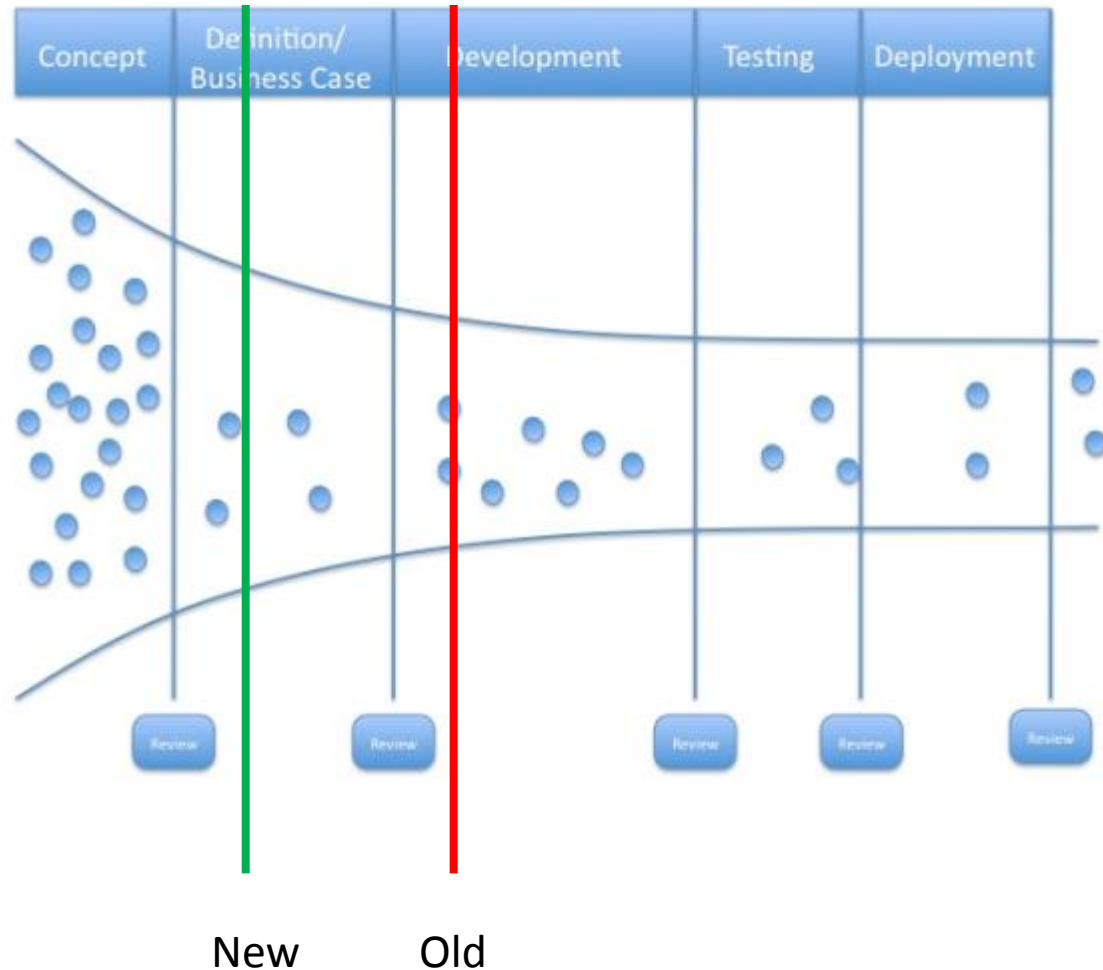
TRUSTED SUPPLIER DEVELOPMENT PROCESS

Typical Award Process

- Create Product Spec
- Set out to bid
- Supplier responds
- Select Supplier

Best Practices for Trusted Suppliers

- Master Service Agreements
- Partners Part of Team (JIT-2)
- Award precedes Business Case Decision!



Saves 6-9 weeks in Time to Market

IPF: OUTSOURCING SELECTION MATRIX

Highest Technology	Local Resources (Silicon Valley) Ex Employees Academic Partnerships Craigs List	Partner Specialist Joint Venture	Develop Inhouse
Medium Technology	oDesk Top Coder eLance	Traditional Domestic Outsourcing Temporary Agency Partner Specialist Joint Venture	Develop Inhouse Remote Development Partner Specialist Joint Venture
Low Technology	Virtual Personal Assistant Business Process Outsourcing My Man in India	Traditional Domestic Outsourcing Temporary Agency Partner Joint Venture	Remote Development
	Low Strategic Importance	Medium Strategic Importance	High Strategic Importance

IPF: OUTSOURCING SELECTION MATRIX

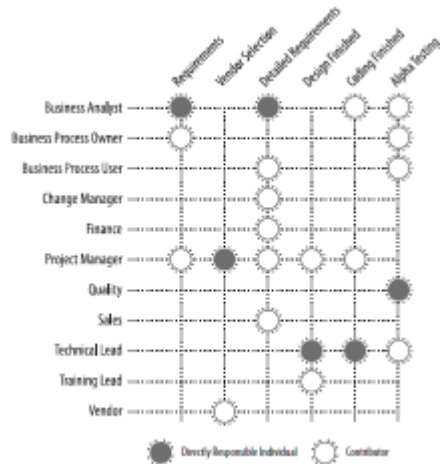
Strategy	
• Peripheral to the strategy or core?	1
• Not used again or will be used again and again?	3
• Part of differentiation?	1
Average	1.7
Technology	
• How technically sophisticated?	1
• How much relies on internal patents/know how?	1
• Technical impact if knowledge not captured?	2
Average	1.3
"Other Factors" - refine choices after doing the overall mapping	
• Small vs large effort?	2
• Long vs. short term?	2
• Is cost critical?	2
• Is problem well specified?	3
• Reason to have regional presence?	1
• How much is English a requirement?	3
• Strength of internal project management?	3
• How quickly is it required?	3
Importance from 1 (low) to 3 (high)	Example

IPF: OUTSOURCING SELECTION MATRIX

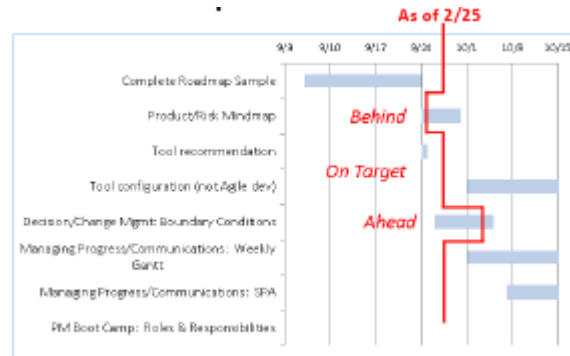
<p>3</p> <p>↑</p> <p>1</p>	<p>Highest Technology</p>	<p>Local Resources (Silicon Valley) Ex Employees Academic Partnerships Craigs List</p>	<p>Partner Specialist Joint Venture</p>	<p>Develop Inhouse</p>
	<p>Medium Technology</p>	<p>oDesk Top Coder eLance</p>	<p>Traditional Domestic Outsourcing Temporary Agency Partner Specialist Joint Venture</p>	<p>Develop Inhouse Remote Development Partner Specialist Joint Venture</p>
	<p>Low Technology</p>	<p>Virtual Personal Assistant Business Process Outsourcing My Man in India</p>	<p>Traditional Domestic Outsourcing Temporary Agency Partner Joint Venture</p>	<p>Remote Development</p>
		<p>Low Strategic Importance</p>	<p>Medium Strategic Importance</p>	<p>High Strategic Importance</p>
		<p>1</p>	<p>3</p>	<p>→</p>

LEVERAGING TOOLBOX

Circle Dot



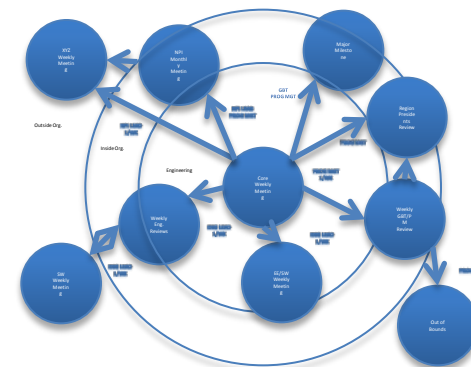
Tracking Gantt



Team Wheel



- Specific Objectives of THIS Meeting (9-9:15)
 - Make decision on Audio Output Limits
 - Make decision on HDMI 1.5 Standard
- Key actions between now and next milestone (focus on critical path) MSS ENGINEERING RELEASE (9:15-9:30)
 - RFI Certification test results (4/2)
 - SW Quality Assurance test (4/7)
 - HW Proto sample due (4/15)
- Follow up from last Core Team Meeting (9:30-9:45)
 - UI report submitted and approved
 - CSBU President approved cosmetics for button
 - NPI approved LTO sub for SW development
- Quality (Following discussion points as needed 9:45-10:00)
 - Supplier EMI qualification (4/15)
 - Dolby Digital certification completed (5/15)
- Procurement
 - NPI approved PCB subcontractor (3/5)
 - BOM price finalized with LTO (4/2)
- Engineering
 - Replaced lead mechanical engineer (3/1)



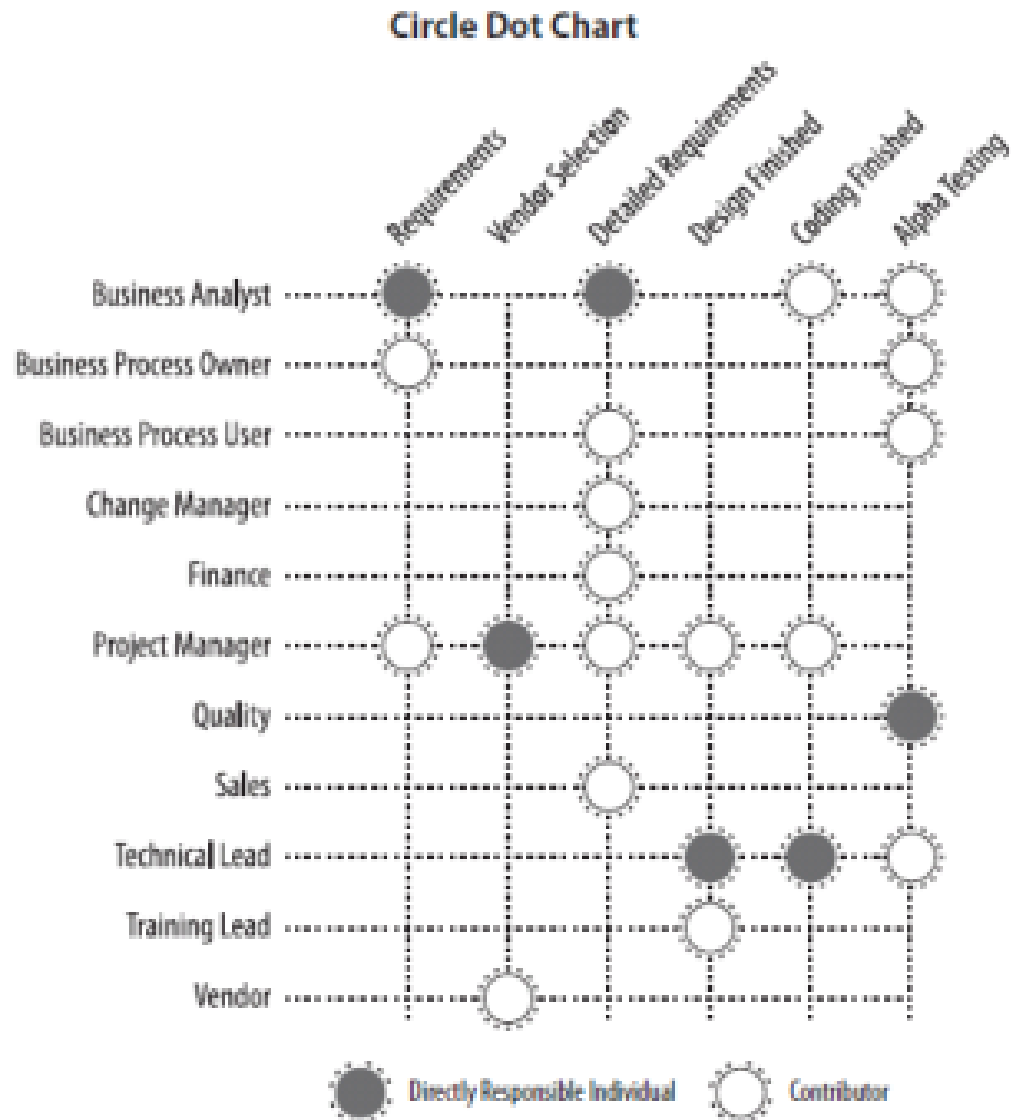
Team Agendas For Weekly Meetings

Communication Paths

CLARIFYING RESPONSIBILITIES

How to apply the tool

- The vertical axis identifies the key functional team members
- The horizontal axis identifies the key project deliverables.
- Open circle means contributes
- Closed circle means directly responsible (DRI)
- Done as a Distributed Team

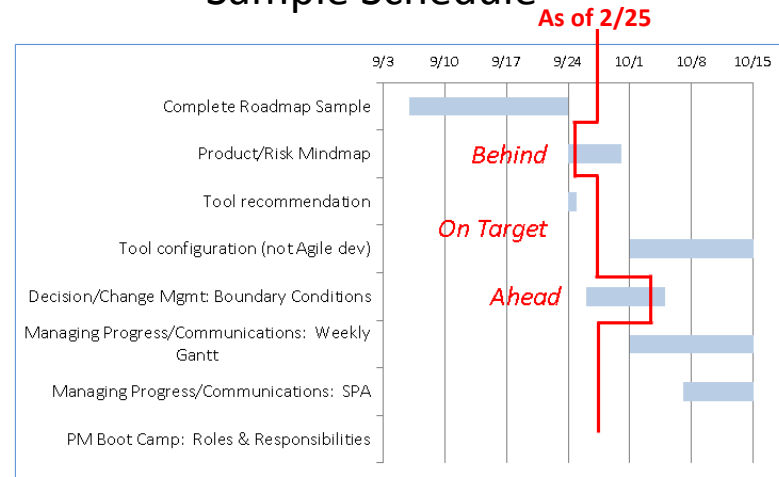


AGENDA EXAMPLE: MR. FROG PROGRAM (2/25/2013)

Sample Discussion Points

- Specific Objectives of THIS Meeting
 - Make decision on Audio Output Limits
 - Make decision on HDMI 1.5 Standard
- Key actions between now and next milestone (focus on critical path) MS5 ENGINEERING RELEASE
 - RFI Certification test results (4/2)
 - SW Quality Assurance test (4/7)
 - HW Proto sample due (4/15)
- Follow up from last Core Team Meeting
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 - Replaced lead mechanical engineer (3/1)

Sample Schedule



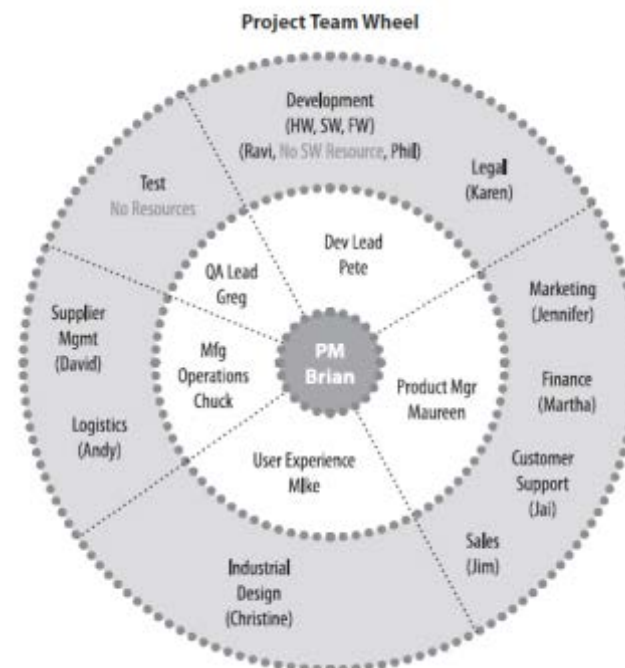
- Issues
 - Main SOC not available until May
 - Violating design rules – yield at 89%
- Risks
 - Airplay certification
 - SW Quality Approval
 - Field testing of SW upgrade

*Example Agenda: One page only, always has schedule, always focus on critical path
Keeps issues and risks captured, contains big picture (overall schedule) and minute details*

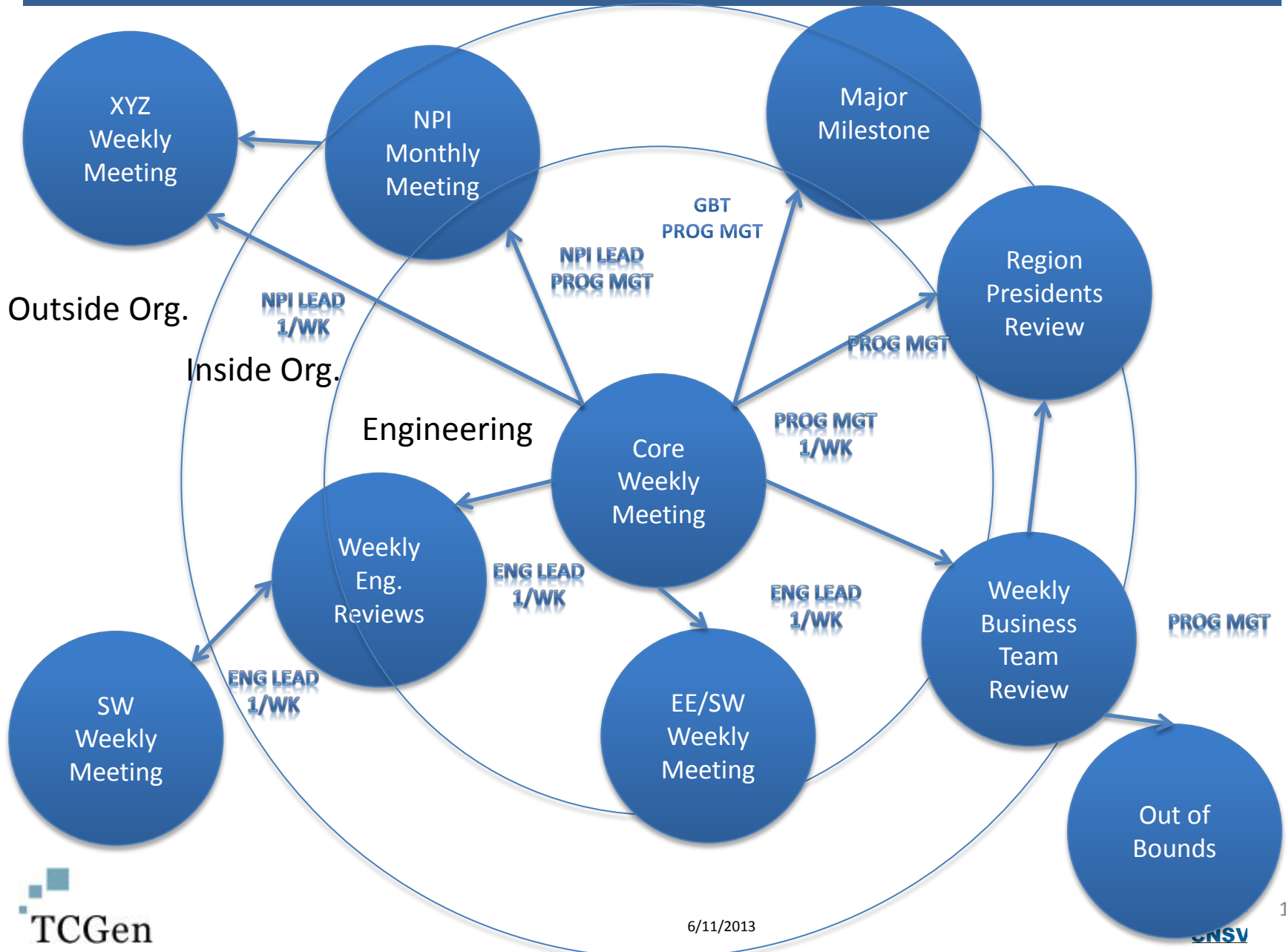
EXAMPLE: PROJECT TEAM WHEEL

Objective: Construct a Project Team Wheel for your project

- Create a Project Team Wheel with your team
 - Identify core team members: typically, in addition to the program manager, a product manager, development lead, and QA lead, but can also include a design/UI lead and/or operations lead.
 - Identify both internal and external team members required to support the delivery of the product to market
 - Populate the wheel with the name of each team member and their function.
 - Present the wheel to the core team for quick review
 - Have the CEO, CMO, and CTO review the wheel



EXAMPLE - COMMUNICATION PATH TOOL



COLLABORATION TECHNOLOGY

Atlassian's Confluence (\$200 a month for 50 Users)

The screenshot shows the Atlassian Confluence interface for a page titled "IRKD 1.0 Marketing Launch". The page includes an overview section, a launch summary for Tuesday, February 26th, 2013, and a table of launch milestones. A notifications panel is open on the right side of the page.

PRE-LAUNCH			
ACTIVITY	DATE AND TIME	Owner	STATUS
Atlassian Expert Communication	Tuesday February 26th, 2013 - 9 AM AEDT	Jerry	IN PROGRESS
Pre-launch Blog Posts	TBD	Ryan	COMPLETE
IRKD 5 Trailer Teaser	Wednesday February 20th, 2013	Ryan	COMPLETE
OnDemand Upgrades	Sunday February 24th, 2013 - See maintenance windows for timing	Matt	NOT STARTED
Internal Logistics	Monday February 25th, 2013		NOT STARTED

Define and track requirements in one place

Secure your content with permissions

Stay connected with mobile

Assign team and personal tasks

Create rich mockups and wireframes

Schedule team leave, travel, and rosters

Publish product documentation to the world

HOW TO TAP INTO EXTERNAL TALENT POOLS

- Not all development tasks need to be done in house
- Not all work needs to be done by your established system level partners
- How do you find sources to help with finite tasks? Suggest the following:

1. oDesk

2. Elance

3. Vworker

4. Freelancer.com

5. Guru

6. Scriptlance

7. TaskRabbit

8. VMG BPO

Red indicates sources I've used successfully

<http://blog.timedoctor.com/2011/02/22/the-top-6-outsourcing-sites-and-how-to-use-them>

VIRTUAL PERSONAL ASSISTANTS

Flag as inappropriate



Garry Dimapilis

\$16.67 / hr

10+ Years Experienced Graphic Designer ★★★★★ (4.96)

graphic-design

print-design

magazine-layout

web-design

adobe-indesign

adobe-photoshop

adobe-illustrator

corel-draw

photo-editing

book-cover-design

ebooks

poster-design

newsletters

brochure-design

flyer-design

business-card-design

logo-design

banner

music-engraving

microsoft-powerpoint

microsoft-word

Overview

I am a freelance graphic designer working with several groups and individuals. I am well adept in using certain graphic software such as Adobe Illustrator, Adobe Photoshop, Adobe InDesign, Corel Draw, and AutoCAD as well as MS Office software. Through my years of experience in the field of graphics, I have worked on various projects in publishing and advertising. My aim is to provide high quality work to satisfy clients and further sharpen my skills in design and other fields.

VIRTUAL PERSONAL ASSISTANTS

How can you get a secretary when your company will not pay you for one?

- VIRTUAL PERSONAL ASSISTANTS (and pay for it yourself!)
- They help you on small to medium sized tasks
- Great for writing, web research, competitive analysis, documentation, graphics
- Example Tasks
 - Turning white board photos into PowerPoint slides
 - Researching Conferences to attend on Product Development
 - Copy editing chapters of a book
 - Performing graphic design of a book
 - Improving presentations such as this one!



Alexandria
Egypt



Arad
Romania



Pomona
United States

Getting Started Tips:

1. Search based on number of hours and ratings
2. Ask candidates to answer a very simple question (this weeds out a lot!)
3. Understand their workload
4. Hire two in parallel
5. Give small initial task (2 hours)
6. Have simple short deliverables
7. Pick the best, or restart

VOICE OF THE CUSTOMER THROUGH USER GENERATED CONTENT



Practice: In designing a new cosmetic line, the company asked their target market (busy moms) to photograph and share their empty purses to help design the ideal “mobile” cosmetic solution

- Specifically, this rich input depicts various cosmetics carried by moms, and the size and space where those items need to fit, and other items (non-cosmetic) that might be also be included in the product.
- **Photographic input is much richer than a survey**, and is much more accurate because it does not rely on memory.
- By sharing the photographs the moms can share experiences and provide a more meaningful context for probing and further exploration.

Goal: Increase number of products simultaneously delivered and significantly accelerate time-to-market

- This technique was also able to **reduce the cost of product definition** since customer visitation was done via the internet, not in person.

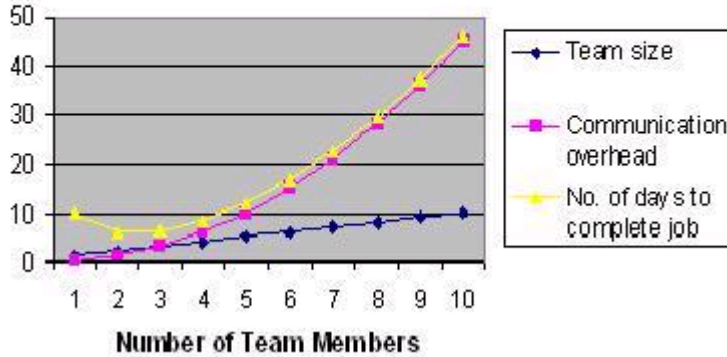
Results: Set new standard for production delivery

- **Twelve new products in six months**, and with lower development costs.
- Inclusion of the photographs from the focused target market enhanced contextual product definition and allowed the company to realize that many cosmetic product could be included in one package.

Capturing specific environments of use allows your customers to make the highest value contributions

Mythical Man Month

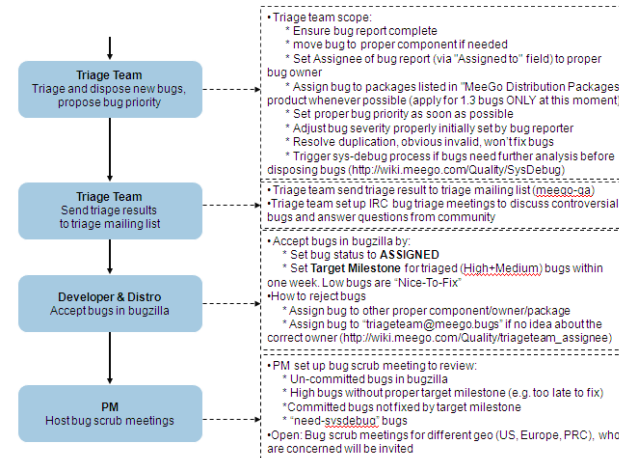
A job that one person can complete in 10 days



Requirements	Specifications
Weight and size of structure minimized	Entire structure must weigh less than 30 pounds.
Bottle sparged with nitrogen to prevent oxidation	Nitrogen sparge must be on an adjustable timer for 2-5 seconds
Wine bottle is filled to a given level with wine	One 750 mL bottle must be filled with wine within 25 seconds
Heat shrink applicator is applied to the bottle and sealed on	Top of the bottle is exposed to heat for 2 seconds

Requirements vs. Specifications

Waterfall vs. Agile



Bug Scrubbing Process

MANAGING SOFTWARE: WATERFALL VS. AGILE

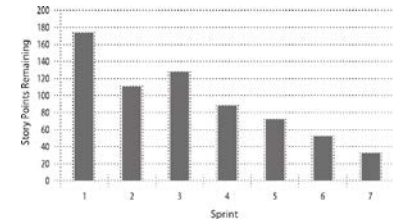
- *Waterfall* attempts to prevent scope changes (“freeze the spec ”); **Agile** expects changes to occur and manages them.
- *Waterfall* defines features first and this activity drives schedule and cost estimates; **Agile determines cost and schedule constraints, and then focuses on the highest value features for the customer.**
- *Waterfall* is useful when features are known and reasonably stable; **Agile works best in rapidly changing markets or where the features are less certain.**



Key components of Agile Software Development:

1. **Sprints** – 2/3 week build cycles, basic unit of the Scrum
2. **Scrums** – Flexible, holistic product development strategy (team goes the distance, passing the ball)
3. **User Stories** – Description of what a user needs to do in plain language (quick requirements)
4. **Story Points** – Amount of work required to satisfy the requirement
5. **Burn Down Charts** – Chart showing remaining Story Points
6. **Kanban** – A visual inventory of User Stories to address

TASK BURN DOWN CHART



What Is the Tool?

- The burn down chart is an application of the **agile development methodology**.
- The tool shows the team and management **how much progress** they are making on a project.
- Stories are use cases, **Story Points** are an estimate of how difficult it is to satisfy that use case (how many days to write the software).

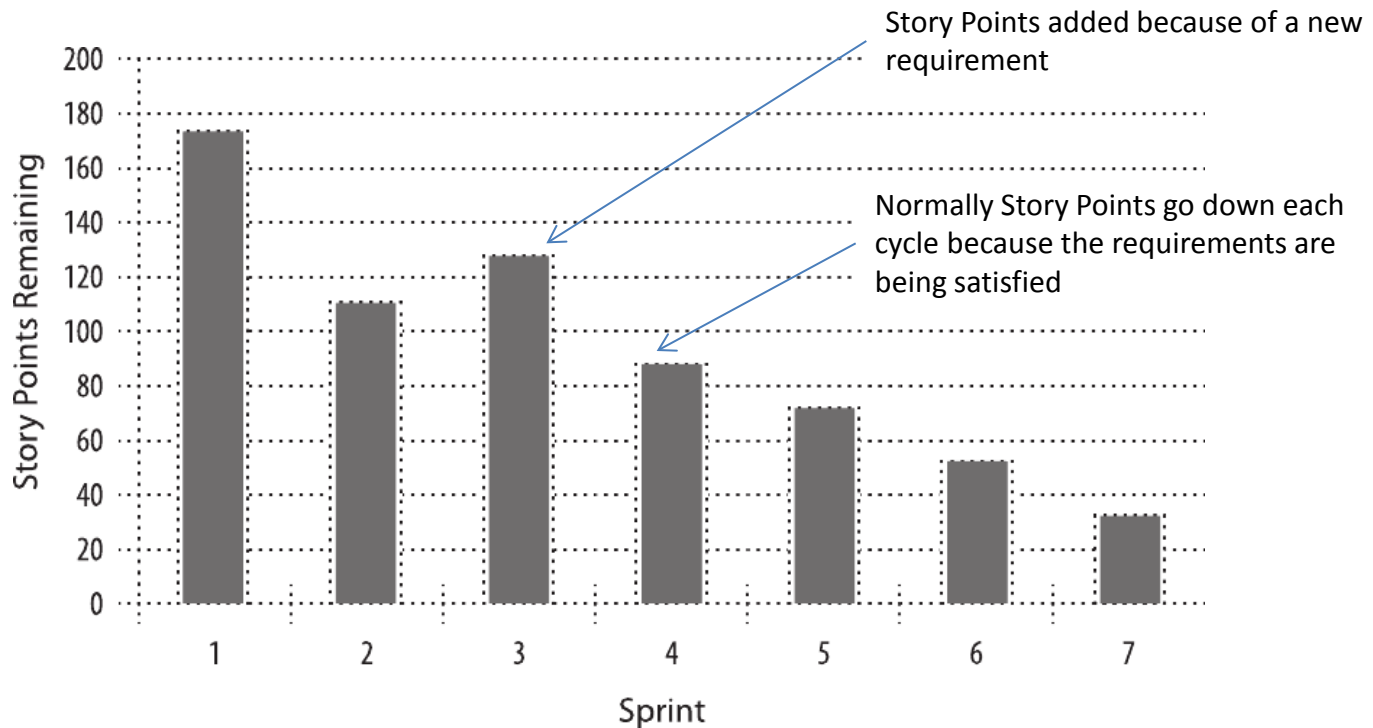
Which Business Problems Does the Tool Solve?

- Keeps your project and management teams **focused on delivering features** that are most important to customers in the fastest and most innovative way possible.
- **Supports innovation** by allowing for the addition of new features during development.

Benefits

- Focuses on the customer, as the primary vertical axis indicates the number of user stories and the team **makes tradeoffs in the context of customer impact**
- Shows the actual work that the team delivers, so it is a **true measure of progress**

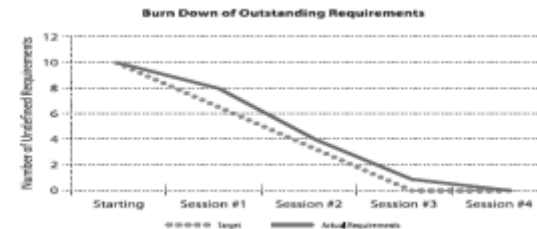
TASK BURN DOWN CHART



How to apply the tool

- Vertical axis indicates the number of story points (user stories) within a sprint.
- Horizontal axis indicates the number of sprints, which can be equivalent to a time scale.

REQUIREMENTS BURN DOWN CHART



What Is the tool?

- The tool **applies task burn down chart** to the requirements process.
- **Tracks unfinished/unclear requirements**, rather than tracking requirements that have been coded

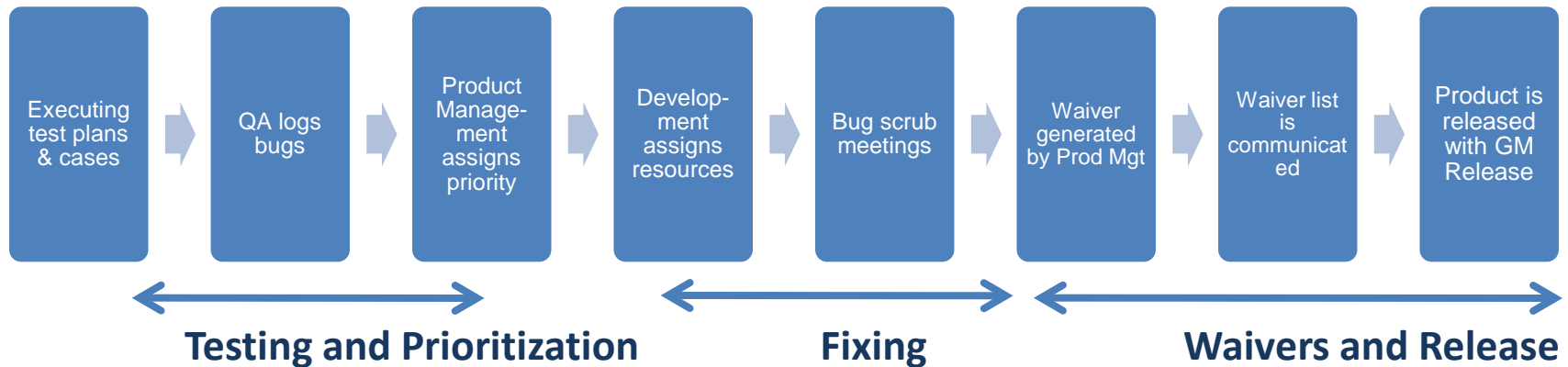
Which Business Problems Does the Tool Solve?

- **Facilitates innovative requirements** and tracks them.
- Helps organizations develop difficult platform programs quickly and **creates a common vision** for the product.

Benefits

- This methodology can help you create **compelling product definitions**
- It **increases definition speed** due to the tight loop of iteration between development and management

MANAGING SOFTWARE: BUG SCRUBBING PROCESS



1. Testing according to test plan & test cases
2. QA logs a bug and assigns severity and priority (default P5)
3. Product Management assigns priority
4. Development assigns defect to resources
5. Bug scrub meetings (weekly/daily)
6. Waiver list is generated by Product Management
7. Waiver list is communicated up to Engineering Leadership
8. Product is released with GM Release form

MANAGING SOFTWARE: BUG PRIORITIES

Label	Value	Description
P0	Blocker	Blocks development and/or testing work, production could not run.
P1	Critical	Crashes, loss of data, severe memory leak.
P2	Major	Major loss of function.
P3	Minor	Minor loss of function, or other problem where easy workaround is present.
P4	Trivial	Cosmetic problem like misspelled words or misaligned text.
	Untriaged	Default field value for issues that have not been triaged

- Best practice is not to have two criteria (Severity and Priority) but just Priority
- Priority should be assigned by Product Management with input from Quality and Engineering

HOW WE WROTE THIS BOOK

- Identified the topic based on market research
- Created unique title, registered domain
- Selected Publisher (CreateSpace)
- Created a structure that could easily be divided with multiple authors
- Enrolled contributors in addition to mail authors
- Used oDesk to find the following skills:
 - Editor
 - Graphic Designer & Cover Designer
 - Book Designer
 - Indexer
 - Book Marketing Coach (Laura Lowell)
- Cranked out the book
- Created Book page and Author page on Amazon



Alexandria
Egypt



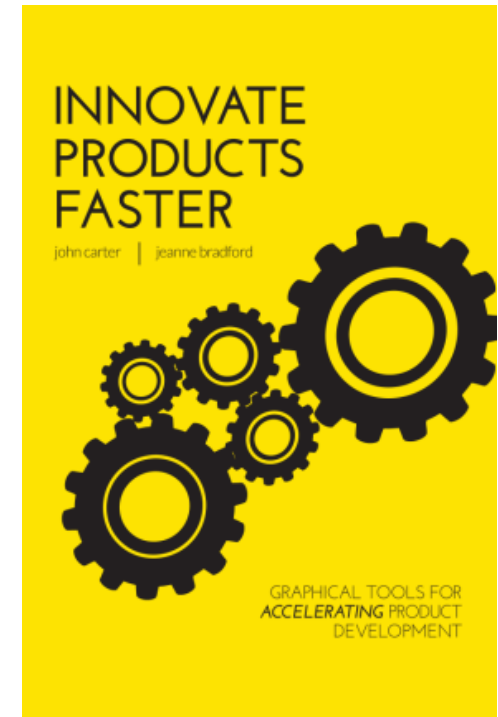
Gary
Philippines



Pomona
United States



Laura
United States



TIME AND COST TO WRITE

- From start to finish was 13 months
- Used event – SXSW as a launch platform
- Marketing Consulting \$15K
- Editing \$12K
- Graphics Design \$ 5K
- Other Costs \$ 5K

- Total \$38K

Was it worth it?

We budget 20% for marketing and sales, and our average project is \$100K. This has already lead to one larger than average project... and helped us close many other projects... so

YES!



Innovate Products Faster: Graphical Tools for Accelerating Product Development (Volume 1) [Paperback]

Mr. John C. Carter (Author), Ms. Jeanne Bradford (Author)
 ★★★★★ (11 customer reviews)

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Save up to 50% on Select Books
Save on Popular Books This Summer
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Book Description

Publication Date: **April 4, 2012**

The prevailing view of innovation is wrong. The traditional view of product development is that there is a fundamental dilemma between innovation and time to market. You can have one or the other, but not both. However, this is not a physical law like Newton's law or the second law of thermodynamics, but rather a short-sighted view of management that likes to use the excuse "one or the other, but NOT BOTH".