Taking the SAFe 4.0 Road to Hyper Speed and Quality; How High Performance Teams Disrupt Their Marketplace and Drive Change

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36th Annual Pacific NW Software Quality Conference | October 8-10, 2018

New Series

DEADLIEST JOB INTERVIEW

Fri Jan 29 10/9c

AIRPLANE REPO

Discovery CHANNEL™

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AIRPLANE REPO

SEASON PREMIERE *SEASON 3*

Show airs at 9pm

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WEDNESDAY, JULY 15TH • **MILLERS ALE HOUSE, WINTER PARK**

1251 Lee Rd, Winter Park, FL 32789
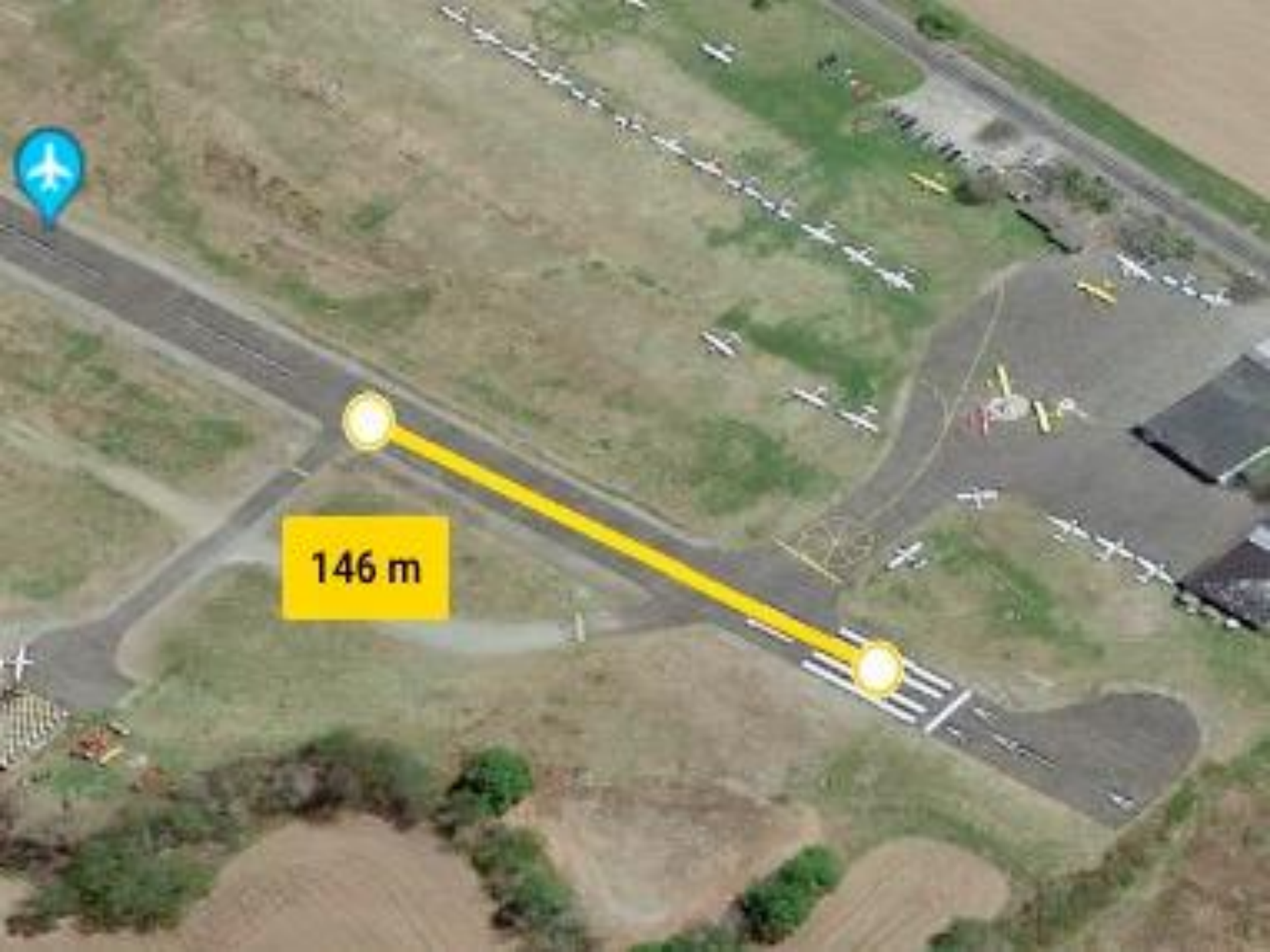
146 m

| Flaps Position and Power Setting. Wings level. *All in mph*		Stall Warning Indicated Airspeed	Actual Stall Indicated Airspeed
0 Flap Power off	0	87/85	80 / 75
10° / 1ˢᵗ notch Flap Power off		80	75
50% Flap Power off		75	72
Full Flap Power off	0	75 70/70	68/70
Full Flap and Full power	2	70/70	65/64
Optimum Take-Off Speed			80 / 70
Minimum Controllable Slow Flight Speed – Full flap and power as required			70
Power Setting during Slow Flight			2250

BMC Software Austin Texas
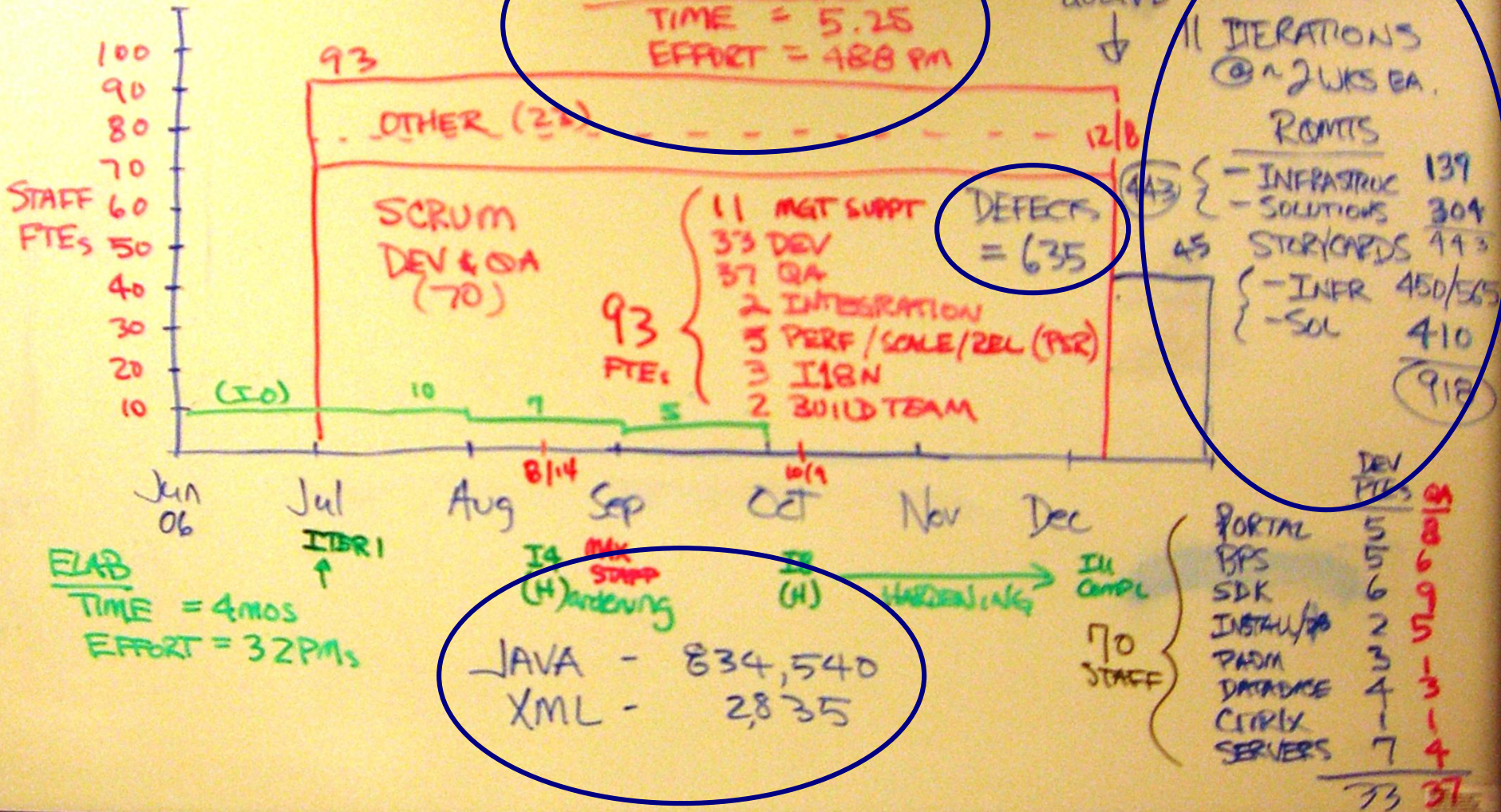
BMC SCRUM

	Industry Average	Current Performance	Delta
Project Cost	**$5.5 Million**	**$5.2 Million**	**-$.3M**
Schedule	**15 months**	**6.3 months**	**-8.7 mos**
Defects During QA	**713**	**635**	**-11%**
Staffing	**40**	**92**	**+52**

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Pair Programmers

	Industry Average	Current Performance	Delta
Project Cost	**$3.5 Million**	**$2.2 Million**	**-$1.3M**
Schedule	**12.6 months**	**7.8 months**	**-4.8 mos**
QA Defects	**242**	**121**	**-50%**
Staffing	**35**	**35**	**n/a**

We Always Look for $1 Million

CUTTER
CONSORTIUM

How Agile Projects Measure Up, and What This Means to You

by Michael Mah, Senior Consultant, Cutter Consortium;

with contribution by Mike Lunt

BMC "Secret Sauce"

BMC "Secret Sauce" (con't)

Buy-In
- VP-Level (or higher) Senior Executive Sponsorship
- Scrum Master Training
- Core Group Energized and Passionate

Staying "Releasable"
- Nightly Builds/Test
- 2-week Iteration Demos
- Frequent, Rigorous Peer Code Review

Dusk-to-Dawn Teamwork
- Communication Techniques for Information Flow
- Wikis, Video-conferencing, Periodic On-Site Meetings
- Co-Located Release Planning
- Scrum of Scrum Meetings (US Time)

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BMC "Secret Sauce" (con't)

Backlogs

- One Master Backlog AND Multiple Backlog Management
- One Setup for User Stories Across Teams
- Added "Requirements Architect" to Interface Product Mgt with R&D

"Holding Back the Waterfall"

- Test Driven Development
- Retrospective Meetings to Not Regress into old Waterfall Habits
- Outside Source to Audit the Process

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Pair Programmers

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9 Years Later...

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Successful Software Projects

2015-2016: Follett vs. Industry Average

	Industry Average	Current Performance	Delta
Project Cost	**$1.8 Million**	**$1.8 Million**	None
Schedule	**9.3 months**	**4.4 months**	**-4.9 mos**
QA Defects	**159**	**40**	**-75%**
Staffing	**15**	**35**	**n/a**

* Average Code Size 163k SLOC

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The Intelligence behind
Successful Software Projects
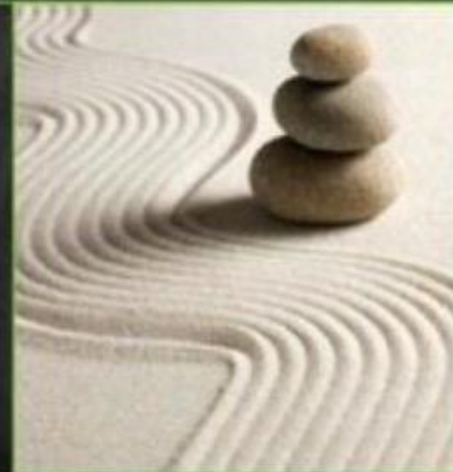
The Columbus Agile Benchmark Study (Columbus vs the World)
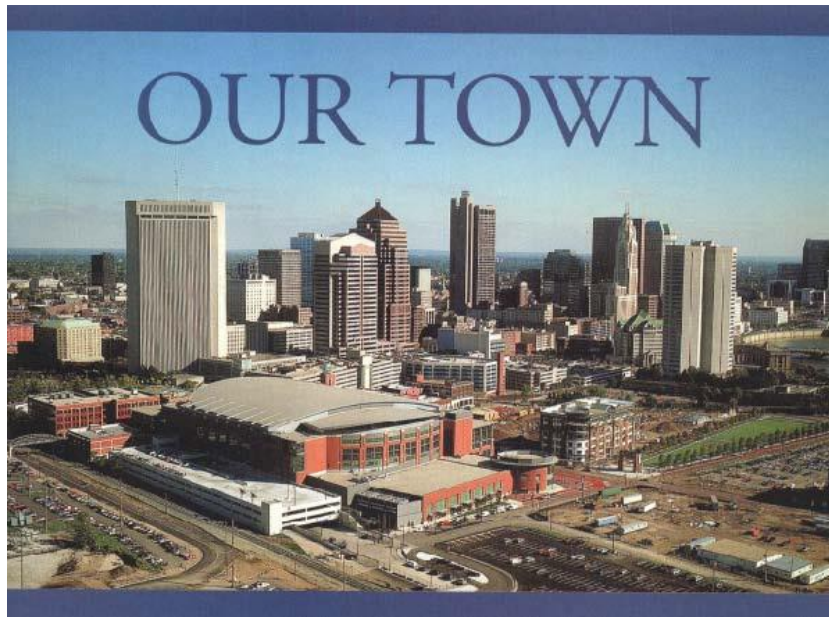
Comparing Columbus AGILE projects vs. Industry Averages*
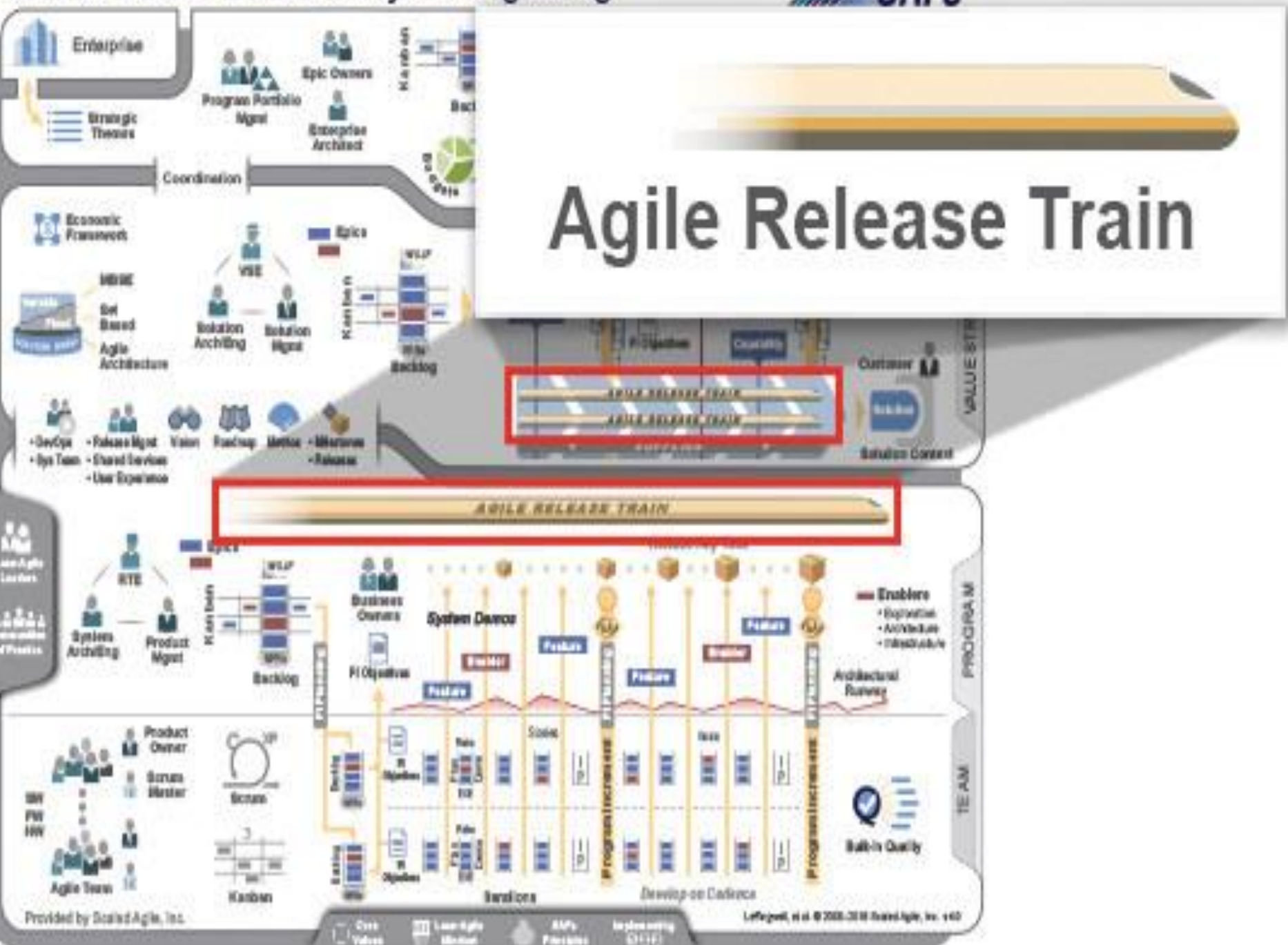## -- 75% Fewer Defects, 30% Quicker Schedules --

*Industry Averages for Defects & Schedules come from the QSM, database of several thousand Business type applications.

AGILE 75% Fewer Defects

Industry Average Defects*

AGILE 30% Quicker Schedules

Industry Average Schedules*

(#24)

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SAFe® 4.0 for Lean Software and Systems Engineering

Agile Release Train

Provided by Scaled Agile, Inc.

Given knowledge of Epic sizes and ART velocities, applying "what if" capacity allocations informs decisions and forecasting

Proper Planning

3 Checkpoint

C Class D Airspace

D Tallest ob
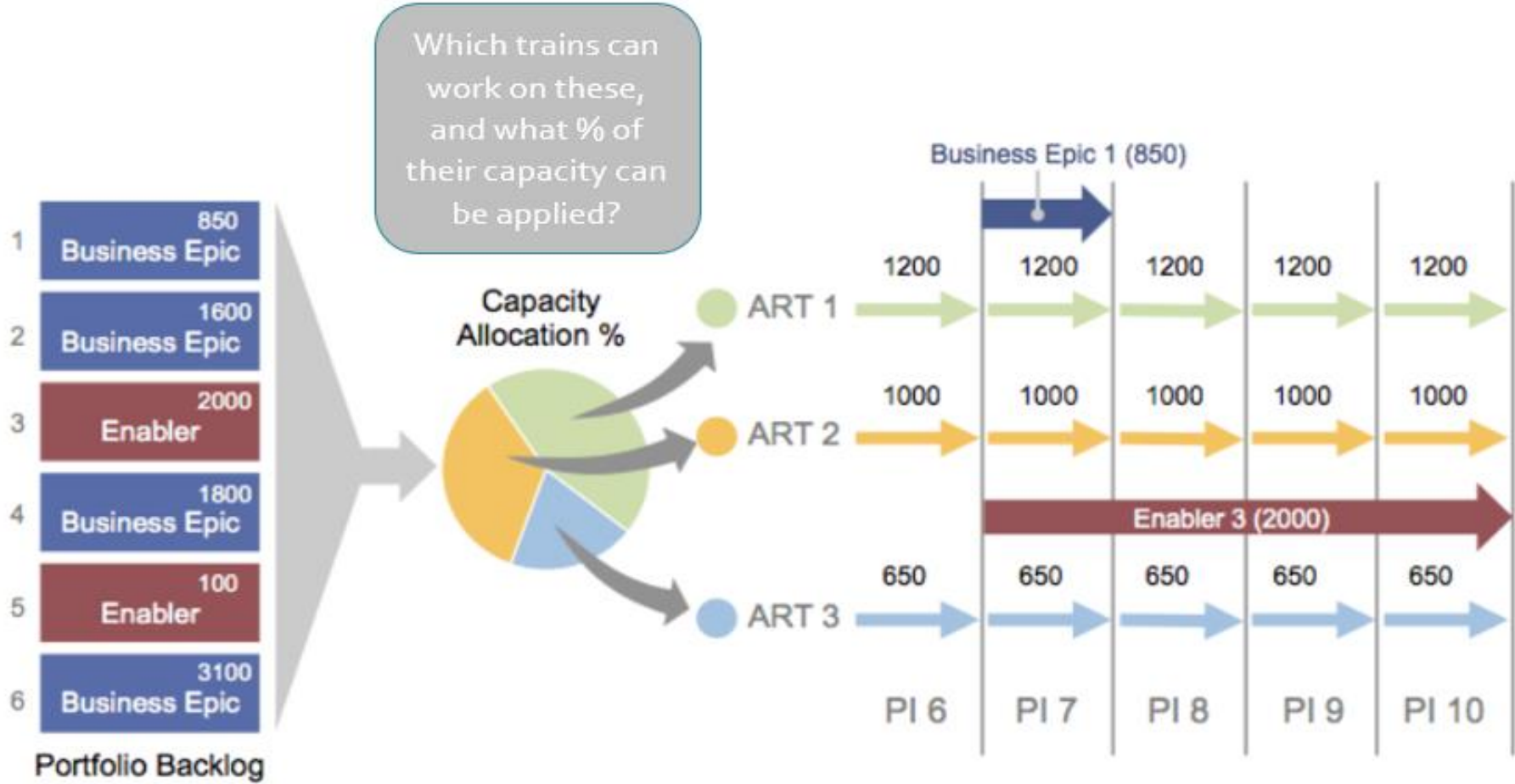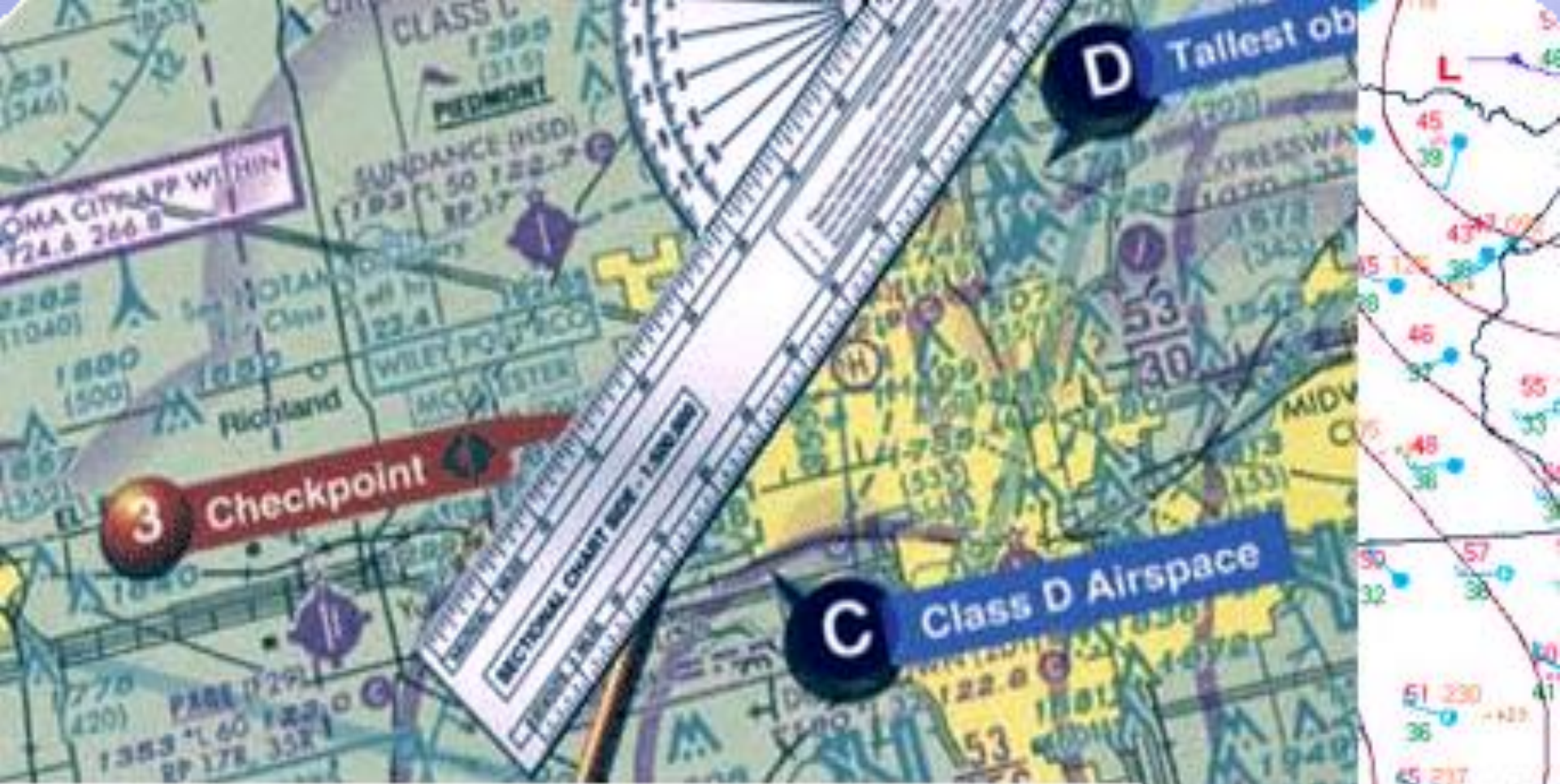
FLIGHT PLAN

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

(FAA USE ONLY)

1. TYPE	2. AIRCRAFT IDENTIFICATION	3. AIRCRAFT TYPE/ SPECIAL EQUIPMENT	4. TRUE AIRSPEED
X VFR			

Portfolio/Release Estimation Process

Inputs

Software Size:

SLOC
Function Points
Objects
Etc...

Uncertainty

Process Productivity:

Methods/Tools
Tech. Complexity
Personnel Profile

Management Constraints:

Max People
Max Budget
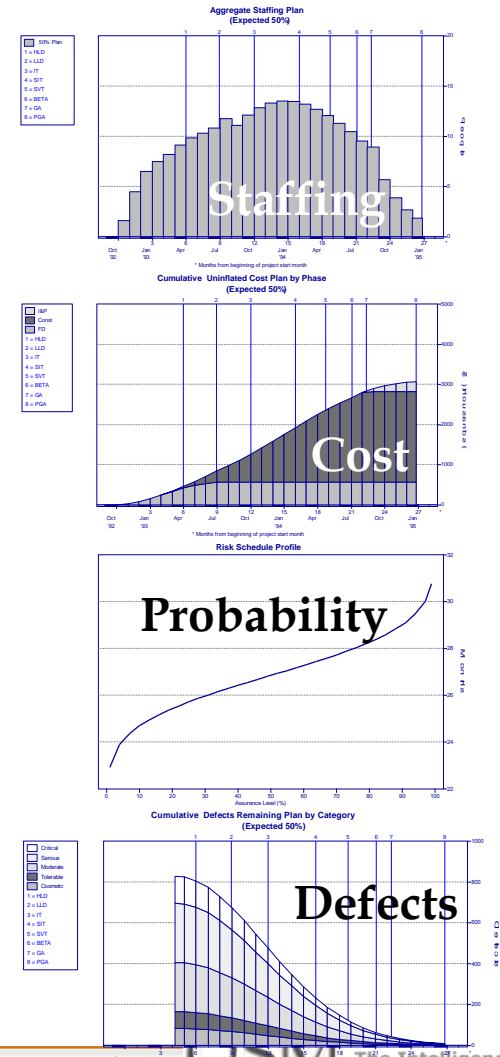Max Schedule
Req. Reliability

How much total WORK to be done (features, stories, points)

What productivity/velocity are we capable of achieving?

When do we have to release?
How many people do we have?

Optimum Estimate (Maximum Probability of Meeting Constraints)

Evaluate Practical Alternatives

Generate Plans

Staffing

Cost

Probability

Defects

Outputs

Releasing Includes Other Activities

Release: Additional activities, including system validation, documentation, etc. ...as required by the business

Solution Increment: ARTs assets integrated, tested, demonstrated at Solution Demo ...at least every PI

System Increment: Teams' backlog items completed, integrated, demonstrated at System Demo ...at least every Iteration

Team Increment: Team finished iteration backlog stories, demonstrated at Team Demo ...at least every Iteration

Releasable Solution
Solution Increment
System Increment
Team Increment

Figure 2. Building a releasable solution

Kanban System for Epics

FUNNEL	REVIEW	ANALYSIS	PORTFOLIO BACKLOG	IMPLEMENTATION	DONE
All big ideas are welcome here! • New business opportunities • Cost savings • Marketplace changes • Mergers and acquisitions • Problems with existing solutions	• Epic Value Statement • Refine understanding • Calculate WSJF • WIP limited	• Solution alternatives • Refine WSJF • Cost estimate • Lightweight business case • WIP limited • Go / no-go decision	• Epics approved by PPM team • Continuous prioritization of approved Epics using WSJF	• Epics Owners and Product and Solution Management decompose Epics into Value Stream/Program Epics, Capabilities, and Features • Ownership transitions to Value Streams and ARTs • WIP limited by downstream capacity • Teams begin implementing at PI Planning boundaries • Epic tracking continues	• Success criteria has been met

COLLABORATION

Business Owners

Product and Solution Management

Epic Owners

Team

Solution-System Arch/Eng

Figure 1. Portfolio Kanban system and typical collaborators

Portfolio Backlog

Portfolio Backlog holds epics approved for implementation

- These epics have made it through the portfolio Kanban with go approval
- Low-cost holding pattern for upcoming implementation work
- Sizing estimates are in story points
- Avoid excess WIP, await implementation capacity
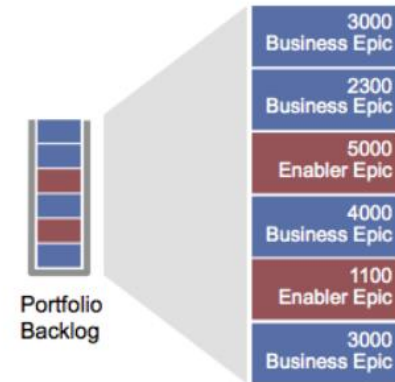
"Program Portfolio Management requires an understanding of the productive capacity of each ART, the velocity of each, and the availability of each for new developments and business-as-usual support activities." – Portfolio Kanban Abstract
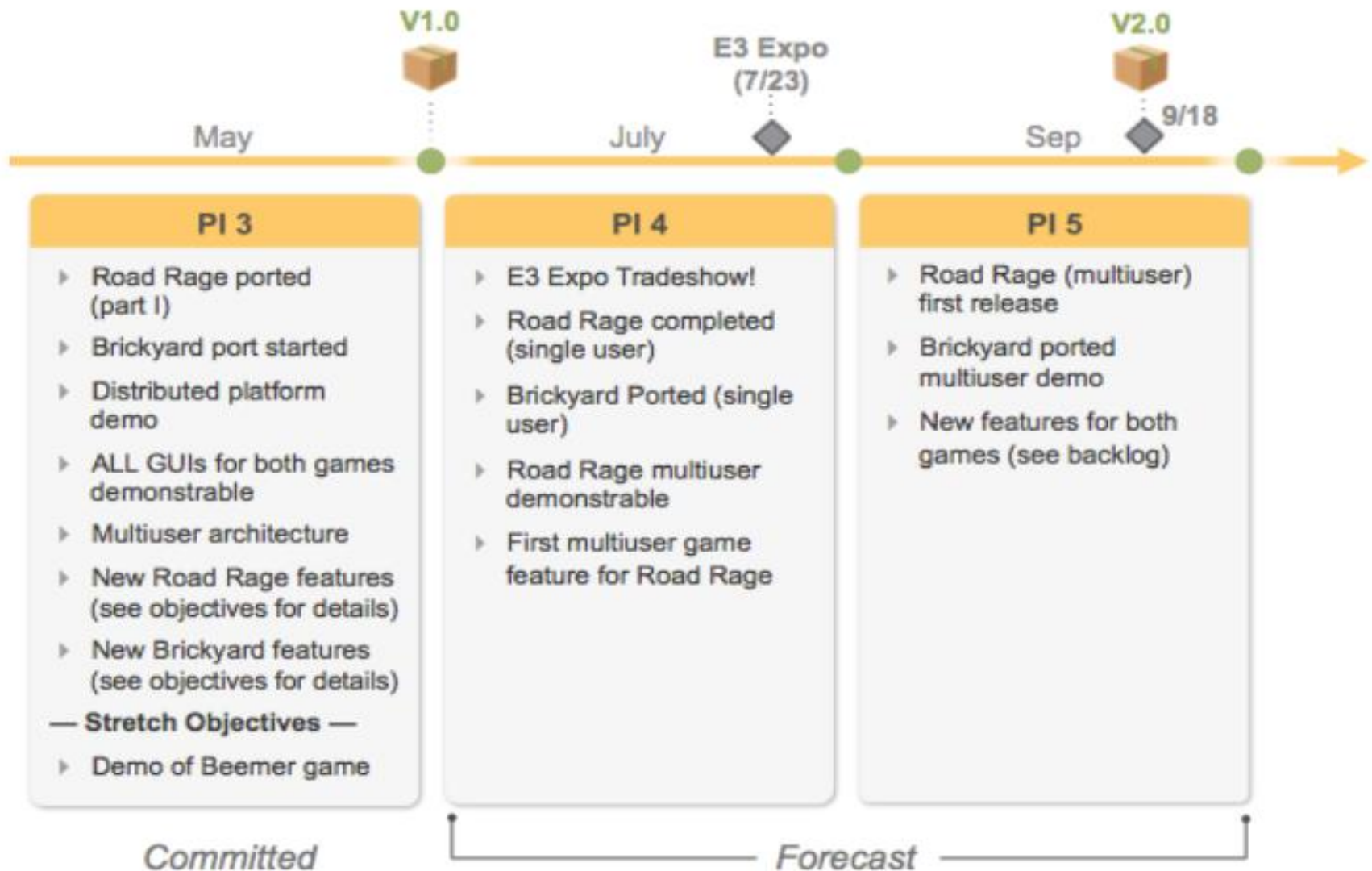
Figure 1. An example PI Roadmap for a gaming company

A Top-Down Estimate Example

Visualize the Portfolio

- Perform early high level estimates of Portfolio Backlog Items to support Kanban process
- Assess risk areas

Visualize Velocity and Value Creation

- Model alternative scenarios for release of epics into the Value Stream
- Account for the reality of the rate at which work becomes available
- Use historical productivity measures that incorporate the non-linear behavior of software development

FAA Radar Flight Following

Radar Flight Following (Foreflight)

Core Metric Variance Analysis - Web Gateway

Gantt Chart
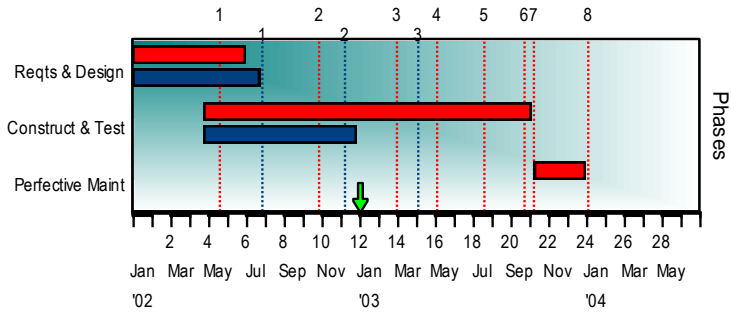
Cum Eff SLOC
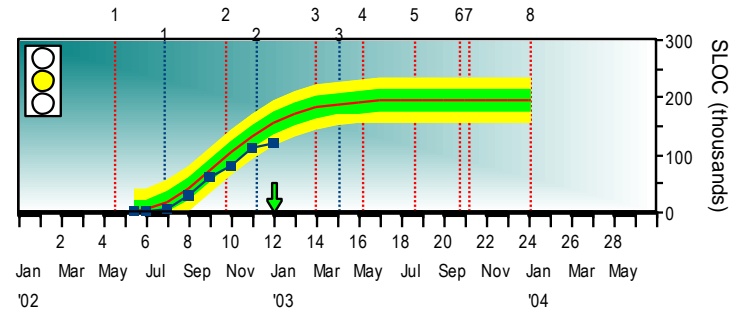
Avg Staff Life Cycle
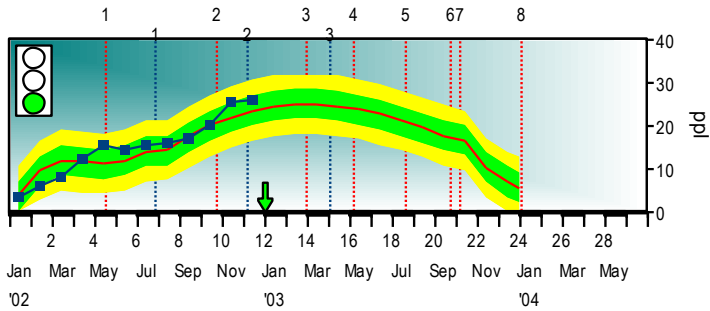
Defects Found Category Total
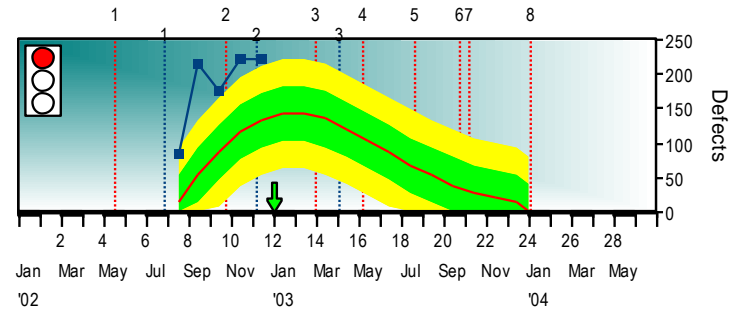
Cum Cost Life Cycle
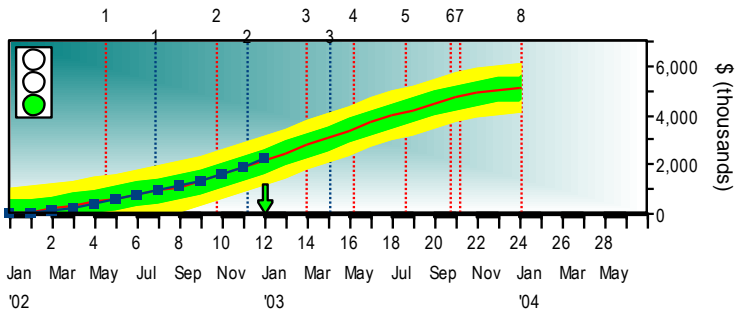
Date 12/31/2002 (12.00 months)

	Plan	Actual	Diff
Cum Eff SLOC (SLOC)	152,658.2	118,245.0	-34,413.2
Avg Staff Life Cycle (ppl)	23.4	26.0	2.6
Defects Found Category Tot…	132.7	219.0	86.3
Cum Cost Life Cycle ($)	2,097,435.6	2,202,171.2	104,735.6
PI	16.1	14.5	-1.5
MBI	2.5	2.1	-0.4

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CREATE VALUE AND PROFIT WILL FOLLOW

Defining your Desired Business Outcomes

Desired Business Outcomes
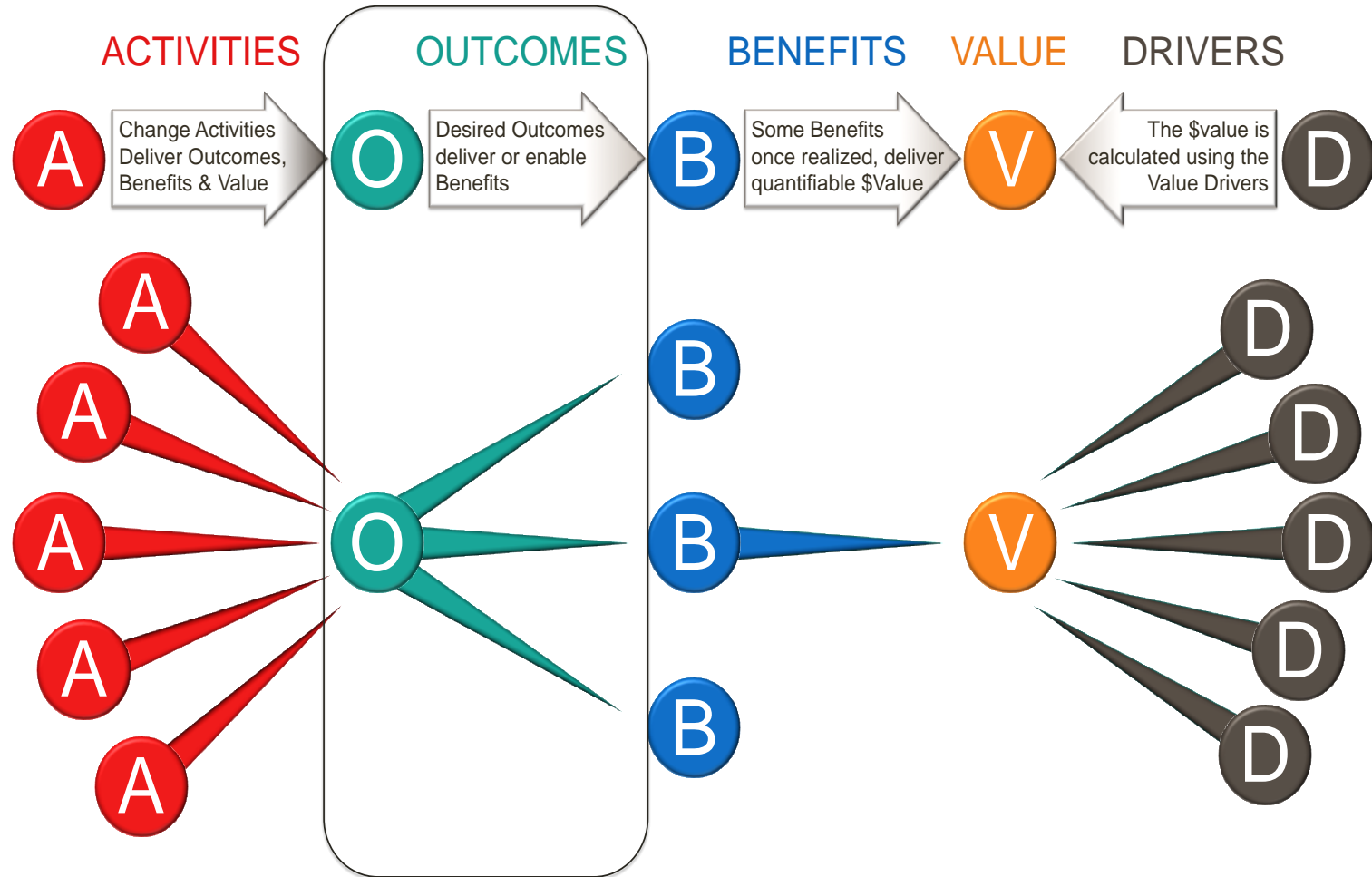
Your outcome statements are the basis for your benefits identification and change planning

Input   Input

Input   Input

Input

Associated benefits

Input

Desired business outcomes   **Outcomes roadmap**   **Finalized outcome statements**

Input

Master change plans

Input

Input   Input

Input   Input

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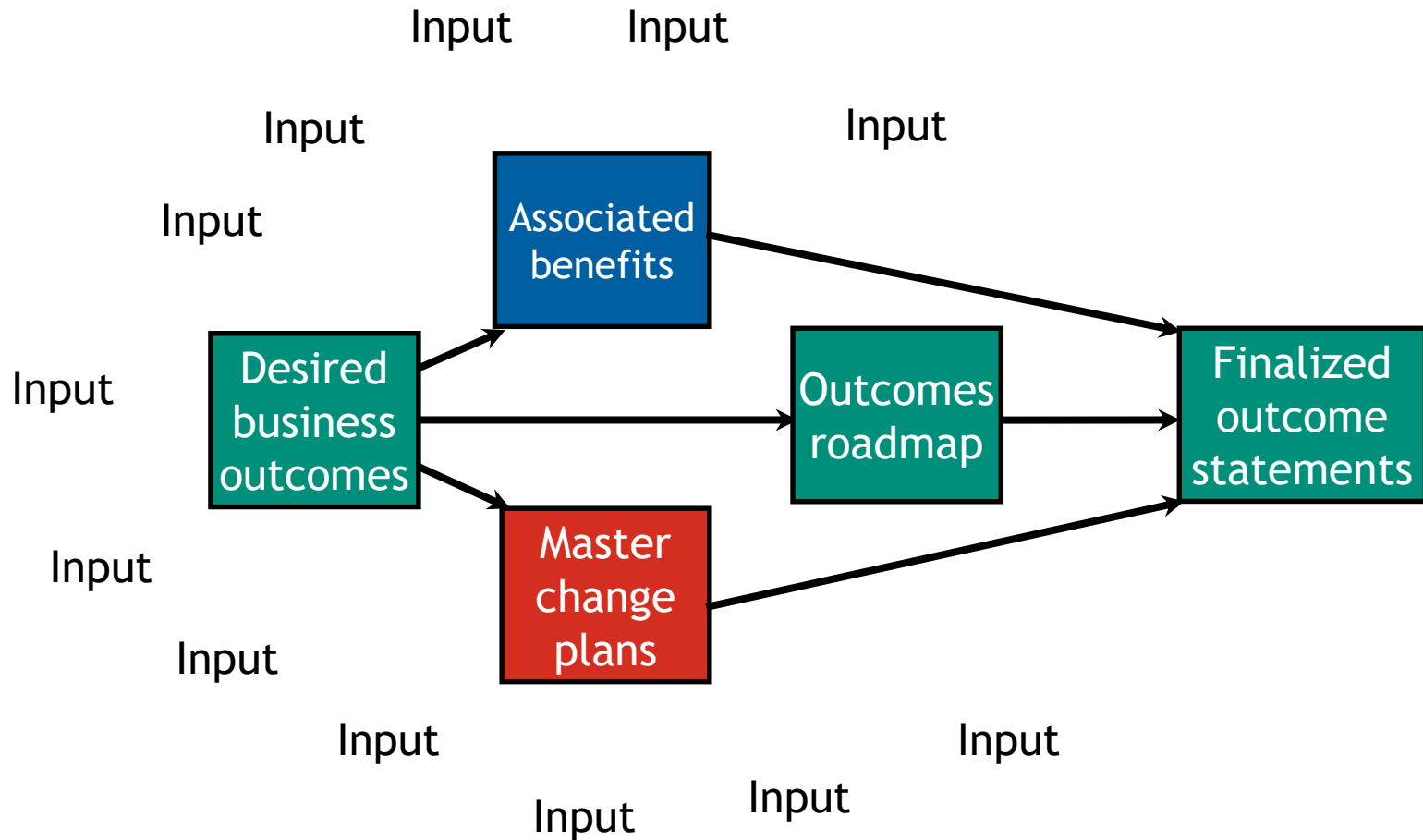
Your desired business outcomes define your overall scope

your project outcomes define your project's scope and measures of success

Associated benefits

Finalized business outcomes

Outcomes roadmap

Master change plans

Subset project outcomes

Project delivery schedule

Project change plans
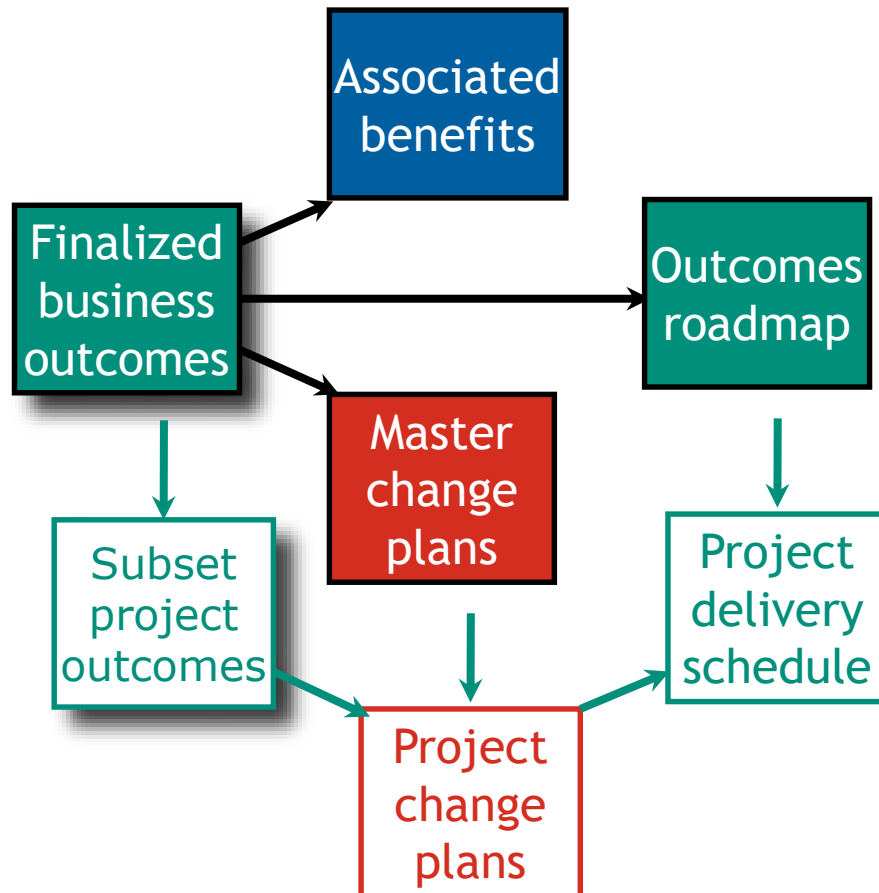
Advantages

Every component is linked to the business outcomes

Gap between business and project outcomes is known

Non-project change activities known and can be actioned by the business

Delivery of the project outcomes clearly and directly enables and supports subsequent delivery of the business outcomes

Indexing Everything

Event Table

Row ID	Column Fam	Column Qual	Visibility	Time	value

Index Table

index	Column Fam	Column Qual:Row ID	Visibility	Time	-
to	Column Fam	Column Qual:Row ID	Visibility	Time	-
values	Column Fam	Column Qual:Row ID	Visibility	Time	-
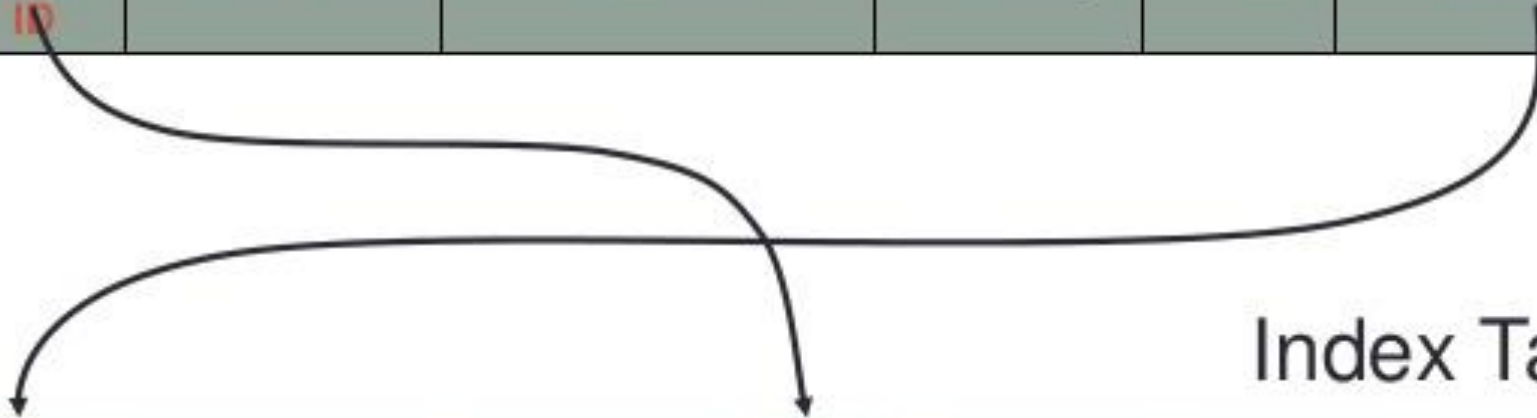
Value Driven Feature Development

"IRACIS" Index

IR – Increase or Improve Revenue
AC – Avoid Costs
IS – Improve Service

Scale of 1-5
Weighting Schema

… Market Share? Others?

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Follett's "GRIN" Index

G – Grow Revenue
R – Reduce Cost
I – Improve Service
N – Nurture Customers

Scale of 1-5
Weighting Schema

... Closure related to "Outcomes"

Did You Ever Wonder What Your Purpose in Life is?

Self-
Actualization
You are living to
your highest potential

Esteem
You've acquired the skills
that lead to honor and recognition

Love & Belonging
Achieving deeper, more meaningful relationships

SAFETY
Home, sweet home

Physiological Needs
Food, water, sleep

hind
re Projects

"The thought of the human species being wiped out, it's all consuming" " - Elon Musk

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What's Your Outcome?

Backlog

Enhance content & Copy on Appliance page

Help Noah complete website Home page by Fri.
Hu + D₅

List products on all e-commerce channels & connect to Big Comm.

Interconnect blog & Site more

Create loyalty Program

Enhance Meta descriptions

Create custom tabs on product pages

G♥
Button

In-Prog

Coordinate w/ Judge on J102 & receive completed copy by Friday
D₃

Update Inv. Wall
D₁

Mike Landing page for ad Campaign
D.A.N

Finished

Roll PL with inlake
D₁

Put appropriate Framework image on seed page combinations
N + D₁

Weekly Inv. Check-in
D₁

Follow up on Apothecary sales
D.A.N₁

Write Up order for Margaret @ Book Corp 9/23
D₁

Hacking—Not Phishing—for Fish: Coders Worldwide Tackle Global Ocean Crisis

Laptops, coffee, and sleeping bags in tow, programmers gathered over the weekend to develop apps for sustainable fishing.
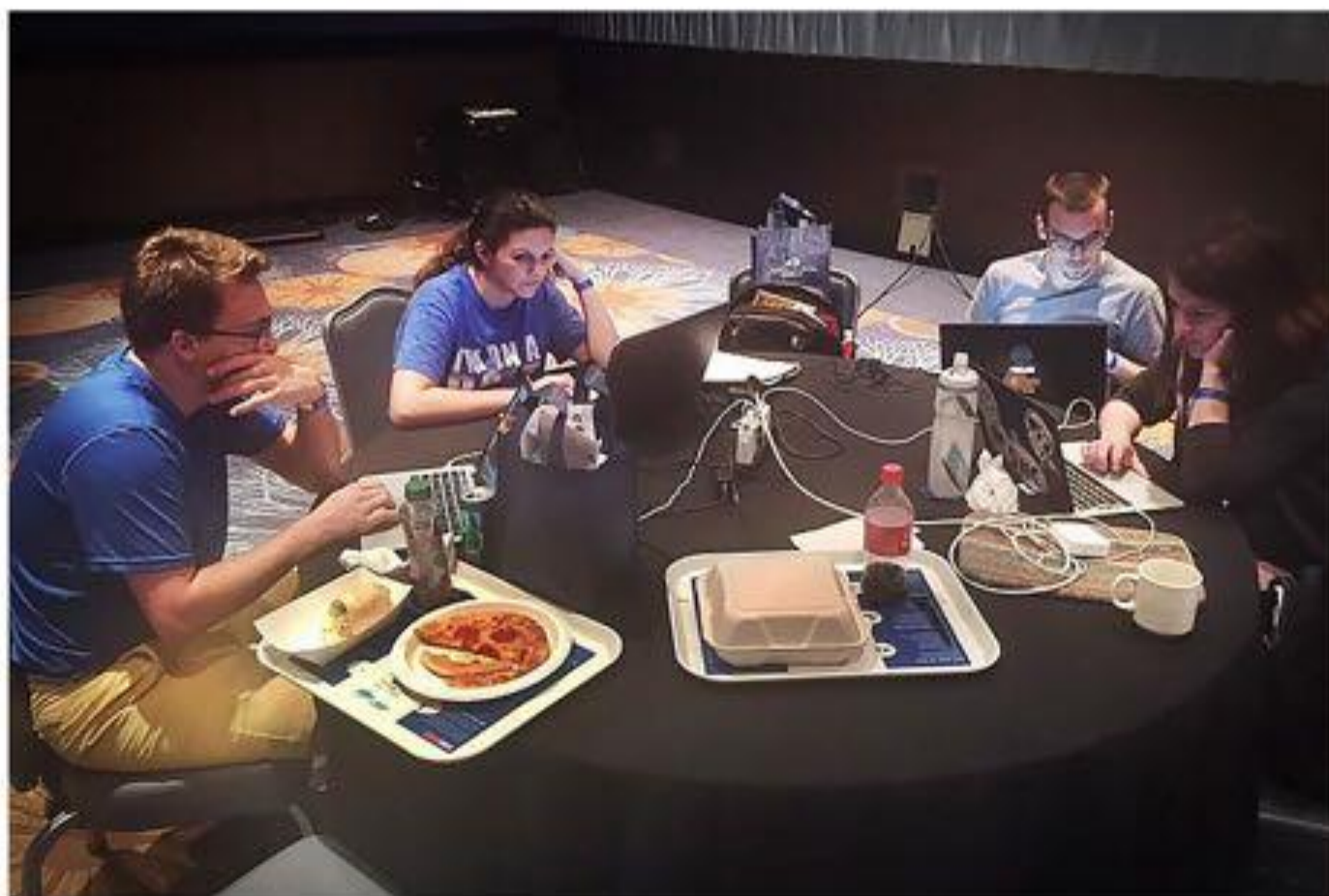
Georgia Tech coder team at Fishackathon. (Photo: Fishackathon/Twitter)

Sierra Leone

How software developers helped end the Ebola epidemic in Sierra Leone

A team of open source software developers solved the problem that most urgently needed solving: distributing wages to healthcare workers

Bethany Horne

Wednesday 30 December 2015
14.26 EST

🅕 🅣 ✉ 🅟 in G+

⊙ This article is 4 months old

Shares **5,061**   Comments **23**

🔖 Save for later

📷 Freetown, Sierra Leone on 11 December 2015, less than a month after the country was declared free of Ebola. Photograph: Björn Kietzmann/Demotix/Corbis

Little known to the rest of the world, a team of open source software developers played a small but integral part in helping to stop the spread of Ebola in Sierra Leone, solving a payroll crisis that was hindering the fight against the disease.

Emerson Tan from NetHope, a consortium of NGOs working in IT and development, told the tale at the Chaos Communications Congress in Hamburg, Germany.

Self-Actualization
You are living to your highest potential

Esteem
You've acquired the skills that lead to honor and recognition

Love & Belonging
Achieving deeper, more meaningful relationships

SAFETY
Home, sweet home

Physiological Needs
Food, water, sleep

Questions: Contact Us

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