We've been to the Moon! How hard could Mars be?

Charles Evans
CTO/EVP Development
Agile 2013 Executive Summit

Interactive Graphic Roots in the Space Industry
Now Serving the Process, Power & Marine Industries

1969

Begins as M&S Computing by engineers working on the Apollo moon orbit

1978

Becomes Intergraph

Offers company's first plant design solution

1980

1984

PDS®

Launches PDS®, now the world's leading plant design solution

1998

Introduces SmartPlant Foundation, the first data management system specifically for the plant industry; now more than 500 customers strong

SmartPlant® Foundation

1999

Acquires SmartPlant® Instrumentation, now the industry's No. 1 instrumentation design solution

2001

Acquires SmartPlant Materials, now the industry's No. 1 materials management solution

2003

Launches Smart 3D technology (SmartPlant 3D and SmartMarine® 3D)

2005

Introduces SmartPlant Enterprise, the leading solutions portfolio

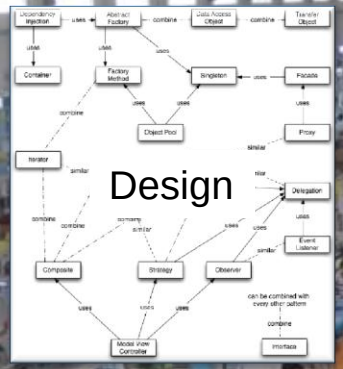
2009

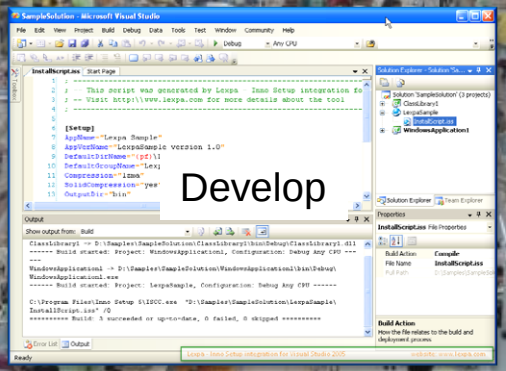
Releases SmartPlant Construction; acquires SIGRAPH.CAE

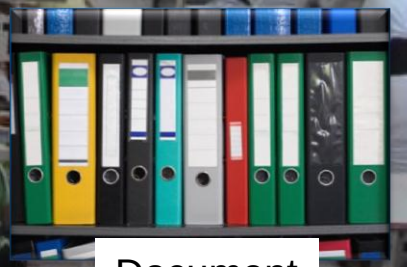
2010

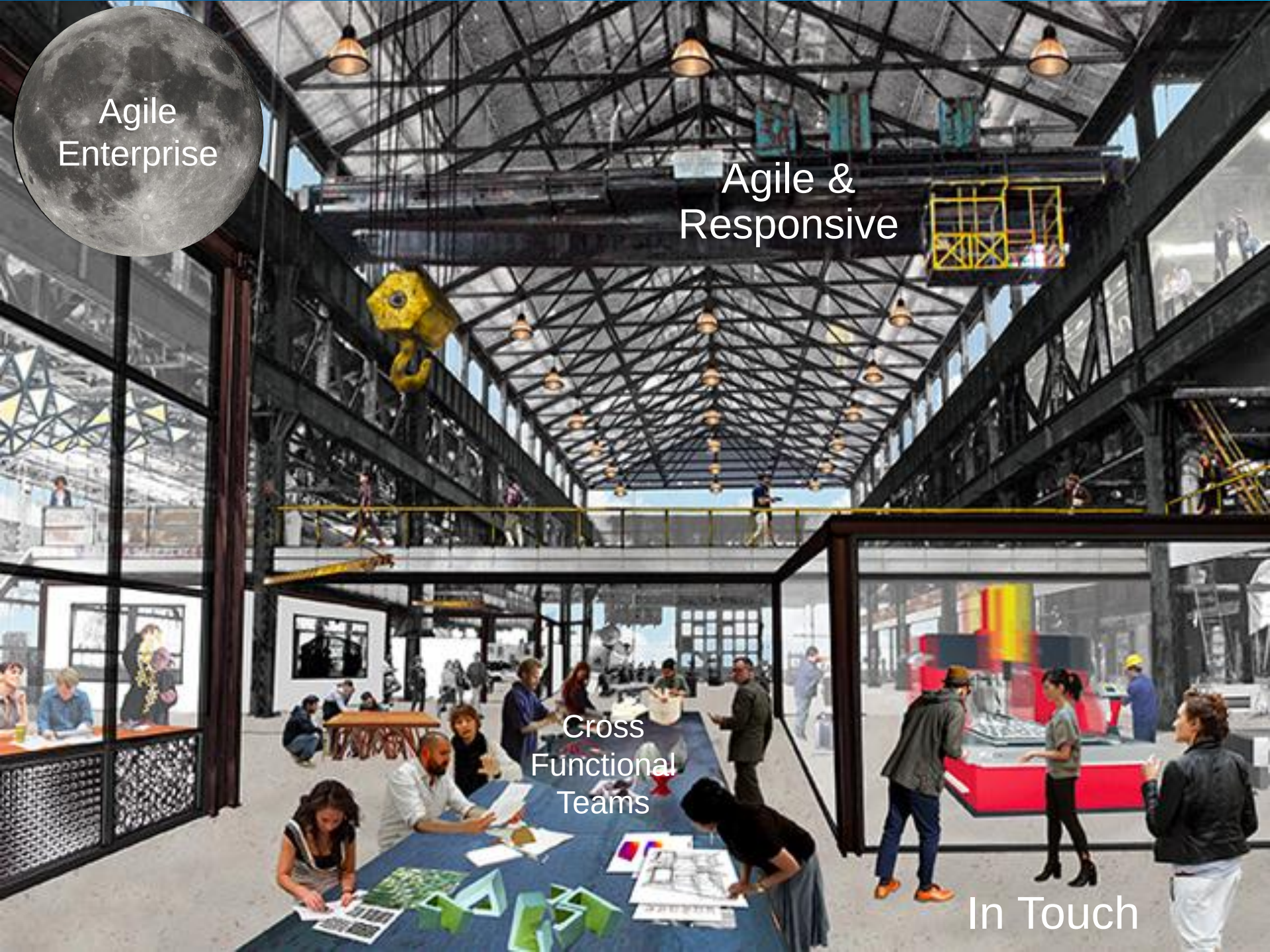
Acquires COADE

The Software Factory

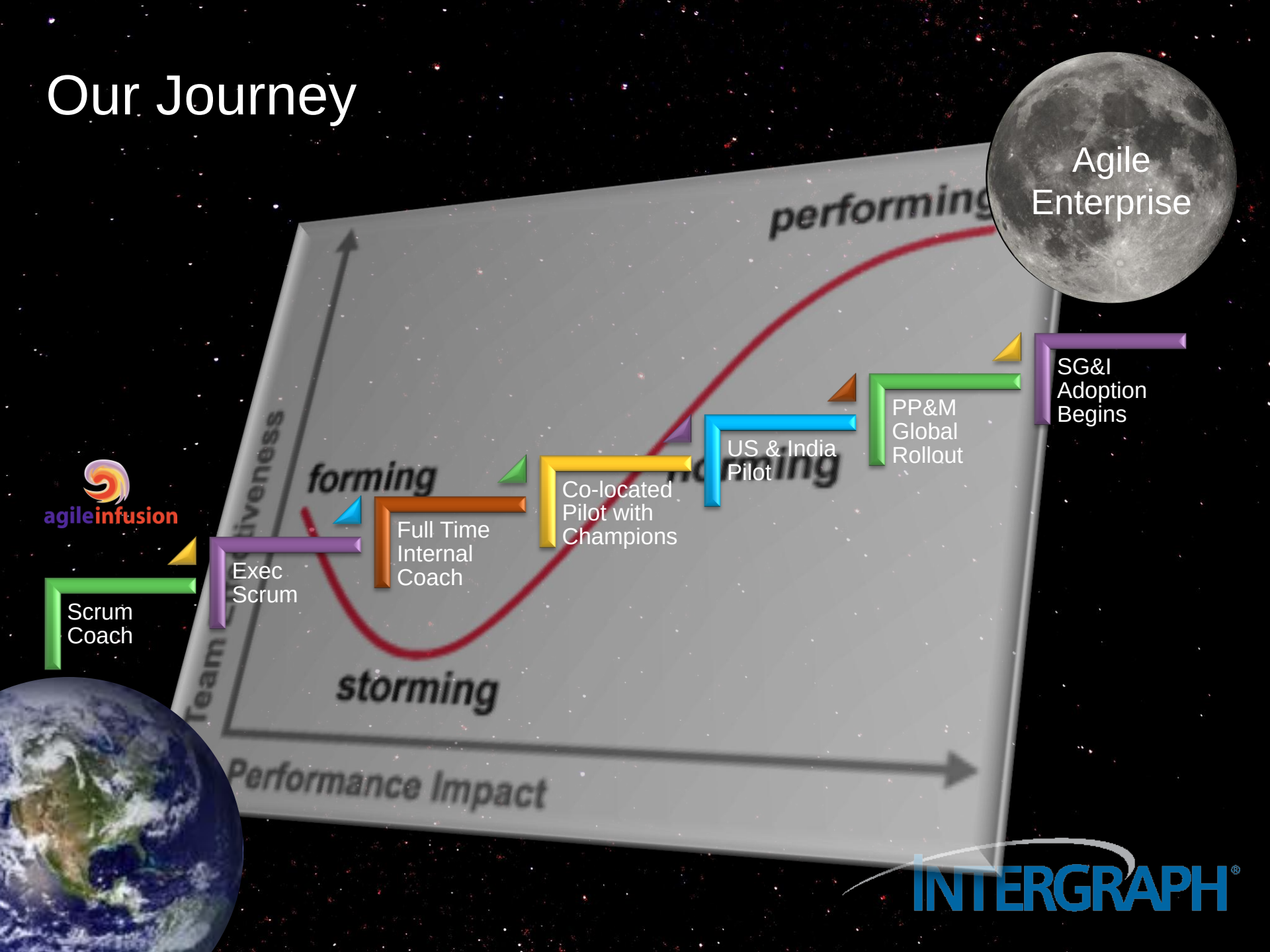






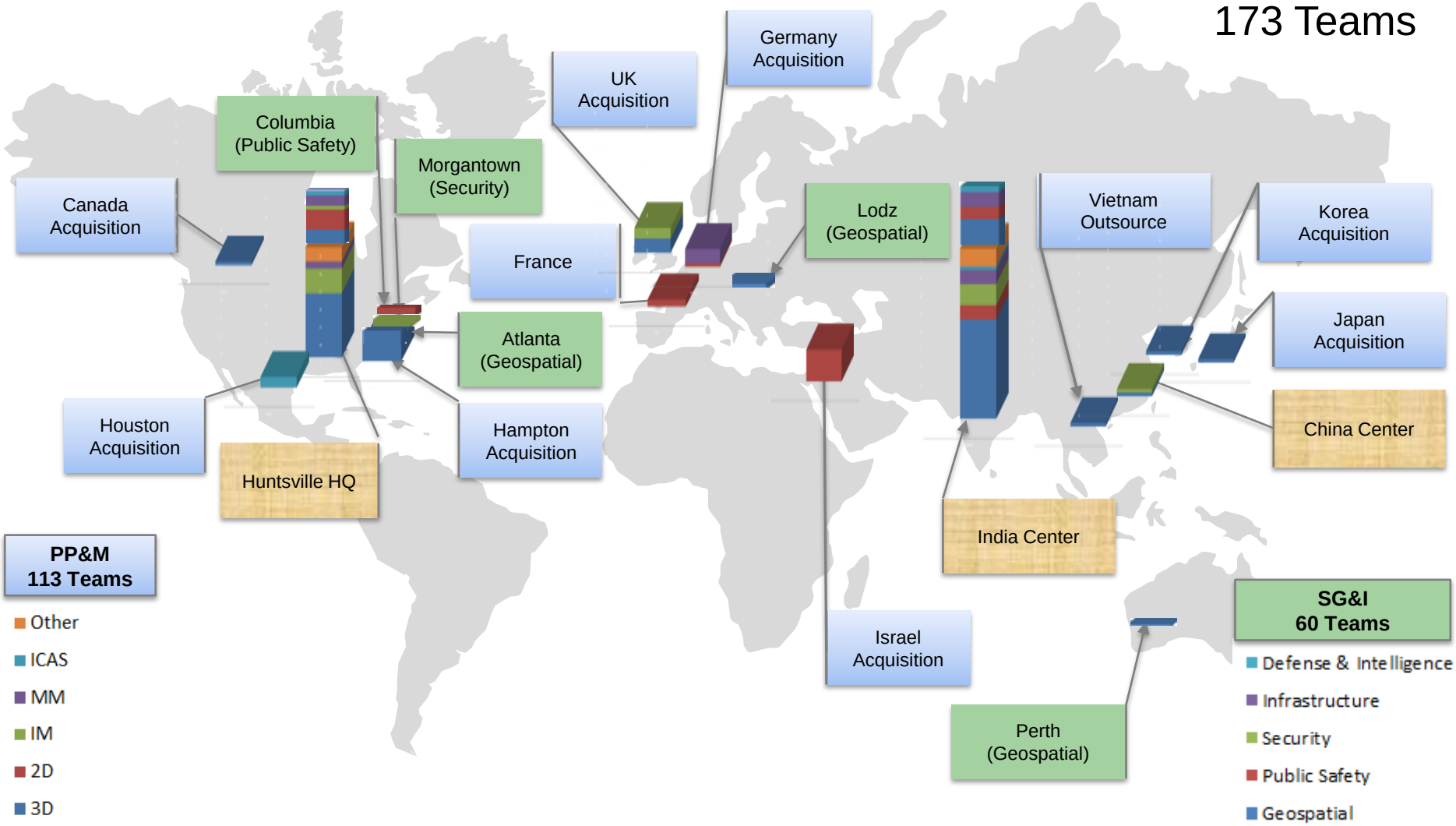

Agile
Enterprise
Agile &
Responsive
Cross
Functional
Teams
In Touch

Our Journey


Agile Enterprise
performing
forming
storming
Performance Impact
agileinfusion
Scrum Coach
Exec Scrum
Full Time Internal Coach
Co-located Pilot with Champions
US & India Pilot
PP&M Global Rollout
SG&I Adoption Begins
INTERGRAPH

Worldwide Scrum Teams

1,200+ People
173 Teams

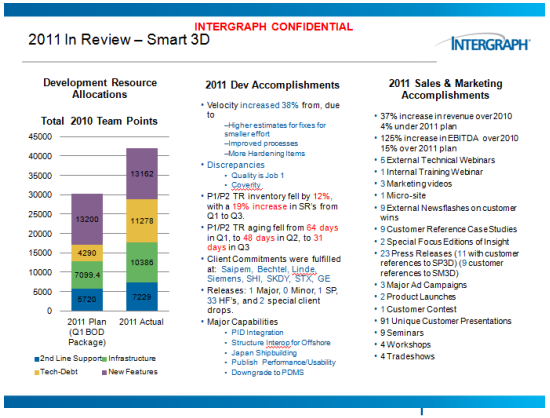


Forming

- Executive Support (“Alpha” Scrum Team)
  - CTO/EVP Driven including PM, Development & QA
  - We learned 1st hand how to time box & manage a backlog
  - Clear Vision & Plan
- Everyone was (and is) involved, not just development
  - QA, Documentation, User Experience
  - Product Management (lack of such involvement would be an impediment to adoption)
- Initial and ongoing investment in training and coaching
  - Started with external consultant guidance
  - Internal coach/trainer role reports directly to CTO/EVP
- Team Building
  - Global Events (many had worked together and never met)
  - Encourage & Fund Team Events

PP&M Product Planning

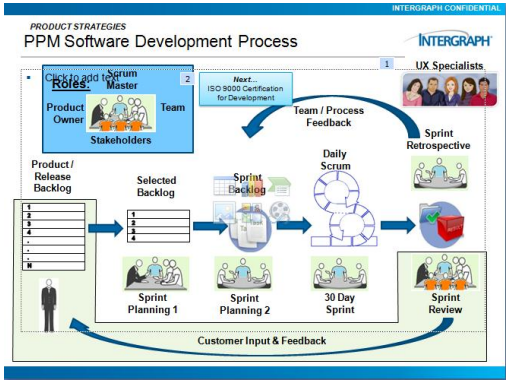
Resource Allocation



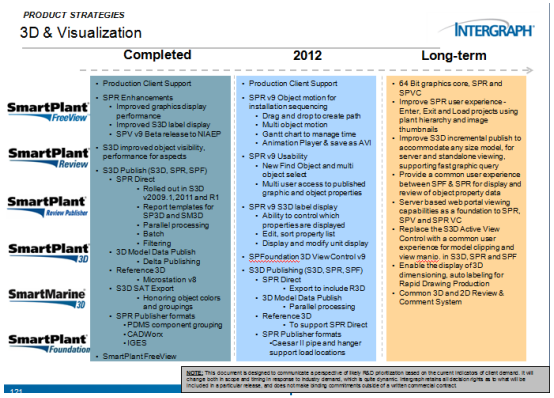
Internal/Finance

Exec Vision / Alignment

Detailed Operations



Client Communications



30days - 0.5yr | **1yr** | **3yr** | **5yr**

Storming

- Distributed Teams are HARD!
- Scaling Scrum is HARD (and were uncharted)
- Open Space
  - Really a status issue (office, desk, etc.)
- Cultural Challenges (country and corporate)
- Power Adjustments for Management
  - PO, Development, QA (Authority vs. Democracy)
- Challenges breaking down complexity
  - Architecture & Design
- A well prepared and timely backlog is crucial
  - ATP “Tax” on Productivity
- "we’ve been doing it this way for years“

norming

Norming

INTERGRAPH

- It's not about “doing Agile/Scrum,” but becoming more effective.
  - Incremental approach important – can’t make all changes in one step.
  - Start with foundational items – Scrum team, velocity, basic Scrum practices
  - Solutions to big issues will emerge through people (e.g., distributed teams)
- Engineering Practices
  - Conscious investment in build and test automation
  - Had a significant impact on quality and productivity
  - Lack of this will be an impediment to team velocity

- Constructive ISO 9000 program focused on Scrum practice
  - Intergraph involved in ISO 9000 for many years
  - Development uses internal audits to impact Scrum practice
  - Management, teams, and internal auditors find this beneficial

performing

Performing

INTERGRAPH

- Handling Priority Shifts
  - Rule #1 – “We will never let a customer down”
  - Unplanned Support “Bucket” and Agility!
- Autonomous Teams
  - Co-located with all critical roles regardless of Location
- Passion for Excellence
  - Automated Testing Frameworks
  - Test Driven Design
  - Pair (“Mob”) Programming & Code Reviews
  - Continuous Improvement through Retrospectives
- Knowledge Sharing
  - Scrum Master Meetings / Lunch & Learns
  - Team Sites / Scrum “Bytes”
- “Consulting” Teams
  - Documentation (DIN’s)
  - User Experience

PP&M Softwar

INTERGRAPH

Roles

• Work tog

Meetings

Sprir

Results in a commit
• **Sprint Planning 1** prioritized Releas items for the next
• **Sprint Planning 2** hours for the com

Inputs

Sprint Bac

• Stories from the Re
• Tasks defined and
• Team commits to c Sprint stories

Other MMPs

Record

Maintain active and
• Team information
• Scope change
• Sprint burndown
• Work allocation

anning

Sprint Retrospective

m reflects on its performance
m determines how to improve

Team Level Metrics

eam compares committed elocity to actual velocity

ns/Exclusions

EVP approval
MS site

LRQA Business Assurance

CERTIFICATE OF APPROVAL

This is to certify that the Quality Management System of:

Intergraph Corporation
19 Interpro Road
Madison, Alabama 35758, USA

has been approved by Lloyd's Register Quality Assurance to the following Quality Management System Standards:

ISO 9001:2008

The Quality Management System is applicable to:

The Design, Development and Support of Products and Services from SG&I: Global Product Center and PP&M: Global Support and Quality Assurance, SmartPlant Construction Development, Information Management Development. Includes the Development of Software in Accordance with TickIT (Issue 5.5).

Approval
Certificate No: UQA 0110219

Original Approval: February 28, 1997
Current Certificate: December 10, 2012
Certificate Expiry: February 28, 2015

Sara Austin

Issued by: Lloyd's Register Quality Assurance, Inc. for and on behalf of Lloyd's Register Quality Assurance Limited

UKAS 001 TIT

This document is subject to the provision on the reverse
1330 Enclave Parkway, Suite 200, Houston, Texas 77077
For and on behalf of 71 Fenchurch Street, London EC3M 4BS, United Kingdom

What's Next?

INTERGRAPH®

Cloud Virtualization

Lifecycle Traceability

High Performance Teams

User Experience Driven Design

User Centered Design

Interaction Design

- Researching, analyzing a[illegible]r-centric workflows and wireframes based on per[illegible]ration across products.

JOBTITLE	PRODUCTNAME
Staff Consultant-Technical	Shared/Overhead
Senior Manager-Technical	Shared/Overhead
Senior Software Analyst	Shared/Overhead
Senior Software Analyst	Shared/Overhead
Graphic Designer	Shared/Overhead
Software Consultant	Shared/Overhead
SC	SPM
Software Consultant	SPF
Developer	UX
Senior Software Analyst	Shared/Overhead
Graphic Designer	S3D
Software Consultant	Shared/Overhead
SSA	SPM
SC	SPM
UX Information Architect	SPF
SA	SPM
SA	SPM
Senior Engineer UX	SPF
Developer (UX Info Arch)	UX
Senior Software Analyst	Shared/Overhead
Toolkit Developer	SPF
Interaction Designer	SPF
Interaction Designer	SPO
Interaction Designer	Shared/Overhead
Interaction Designer	SPO
SPM Web Portal - Interaction Designer	SPM
Interaction Designer (SPR)	SPF
Visual Designer (Graphic Artist)	SPI
3D Visual Designer (Graphic Artist)	3D
Interaction Designer	SPI
Visual Designer (Graphic Artist)	SPF
Interaction Designer	PDS
Software Analyst	SPM
UX Researcher	SPF
UX Manager	Shared/Overhead
Interaction Designer	SPM
3D ICAX - Interaction Designer	SPF
UX Manager	SM3D
UX Intern (Graphic Design)	Shared/Overhead
UX Intern (Graphic Design)	Shared/Overhead
UX Intern (Graphic Design)	Shared/Overhead
UX Tech Architect	SPECP

Selections

interaction designer

Narrow Your Search

Posting Date

Today (20)
Yesterday (36)
Last 3 days (38)
Last 7 Days (114)
Last 14 Days (176)
Last 30 days (286)
Last 60 days (312)

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few perks. Apple's Online Support User Experience (UX)
and information architect to deliver world-class solutions
alifi...

unnyvale, CA, 94089 (7 days ago)
6+ months Location: Sunnyvale, CA 94089 Job
action Designer with a passion for creating compelling,
n team. The Interaction Designer will lead design efforts
s in a collaborative,...

eating great user experiences? Our Monster Government
Designer to work on our Saas-based Hiring
ement and Business Analyst teams, the Sr. Interaction
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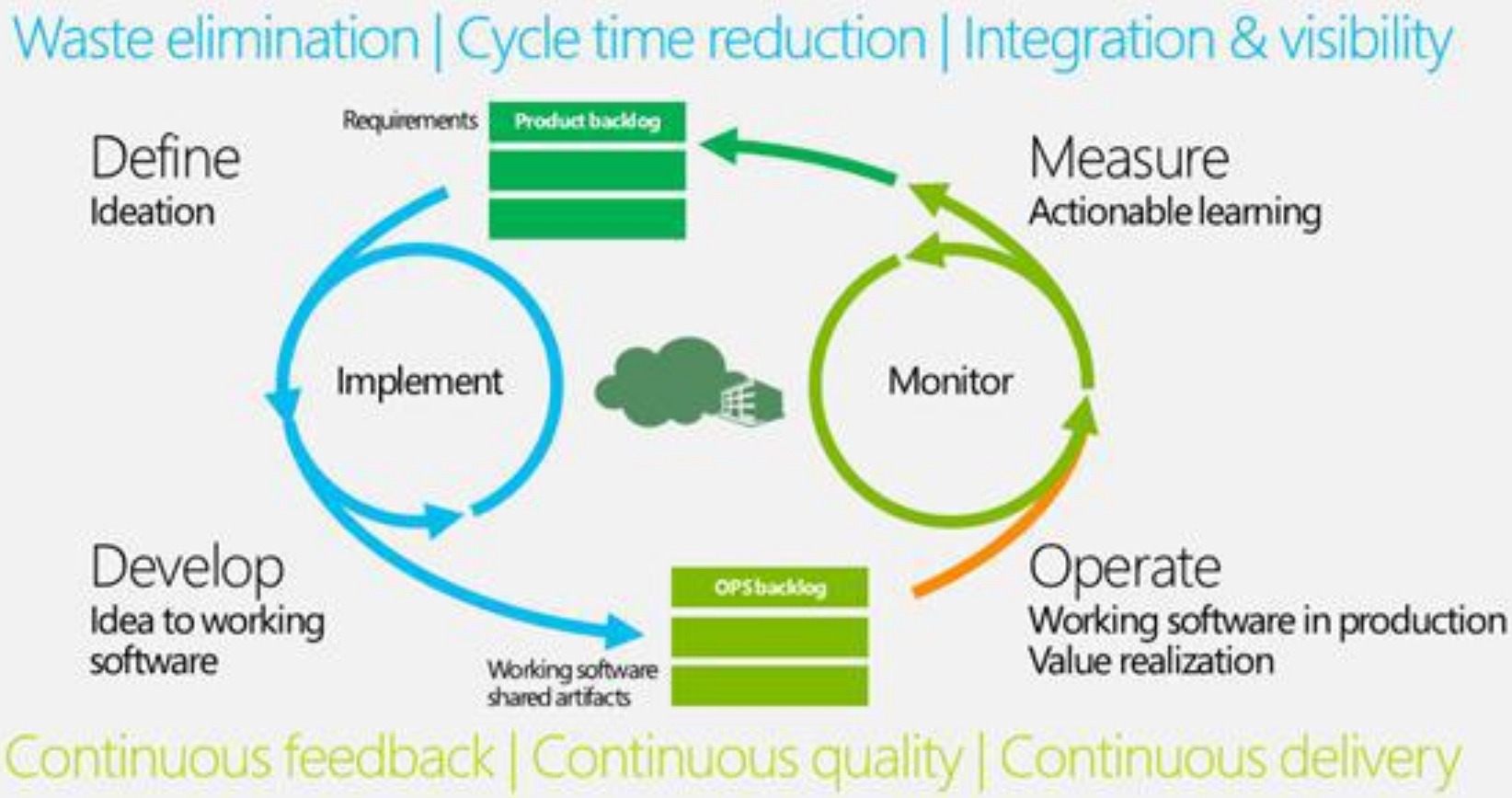
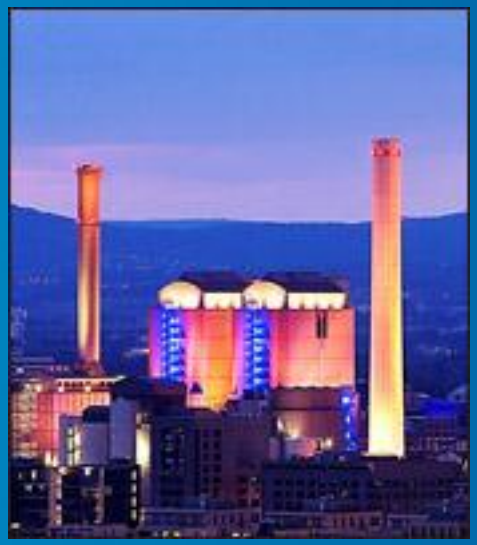
The Modern App Lifecycle



It is no longer acceptable to "*test quality In" as this is far too expensive and we need to move to a model of iteratively "building quality in" so that each and every iteration outputs working software that is of releasable quality. The only way to do this is to be able to test, measure and learn with very tight feedback loops…*



Process, Power & Marine

Safety, Quality, Interoperability, Productivity

The Future of Engineering – Today!

INTERGRAPH®