

RI2P: “Einstein's Dilemma Suggests a Proven Commercial Solution”

Rapid Integration and Innovation Process (RI2P)

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May 23, 2012



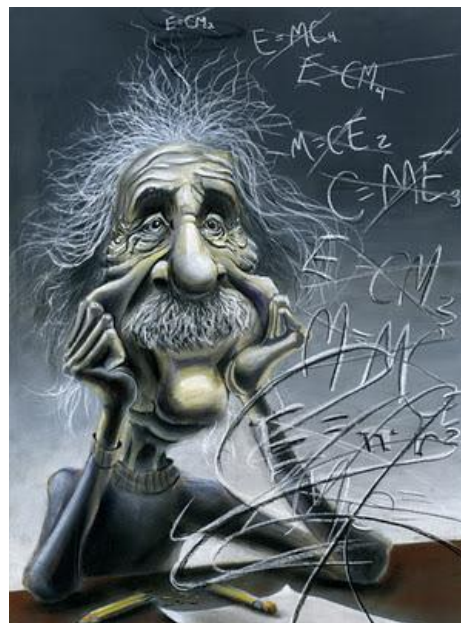
Agenda

- Einstein's Dilemma and Defense Acquisition
- Evolving the Defense Acquisition Process
- Adopting a more Agile Approach
- AFCEA Plugfest – Origins of an Concept...
- Rapid Collaboration
- Integration before Acquisition
- Innovation – Defining the art of the possible
- Establishing a repeatable process
- RI2P as the foundation for a more Agile Acquisition Process
- Closing Comments

Einstein's Dilemma (a.k.a. Acquisition Dilemma)

- Einstein faced more than one dilemma
- Professional
- Philosophical
- Social

$$\text{flight mass} = \frac{\text{rest mass}}{1 - \left(\frac{v}{c}\right)^2} = \frac{\text{rest mass}}{0}$$

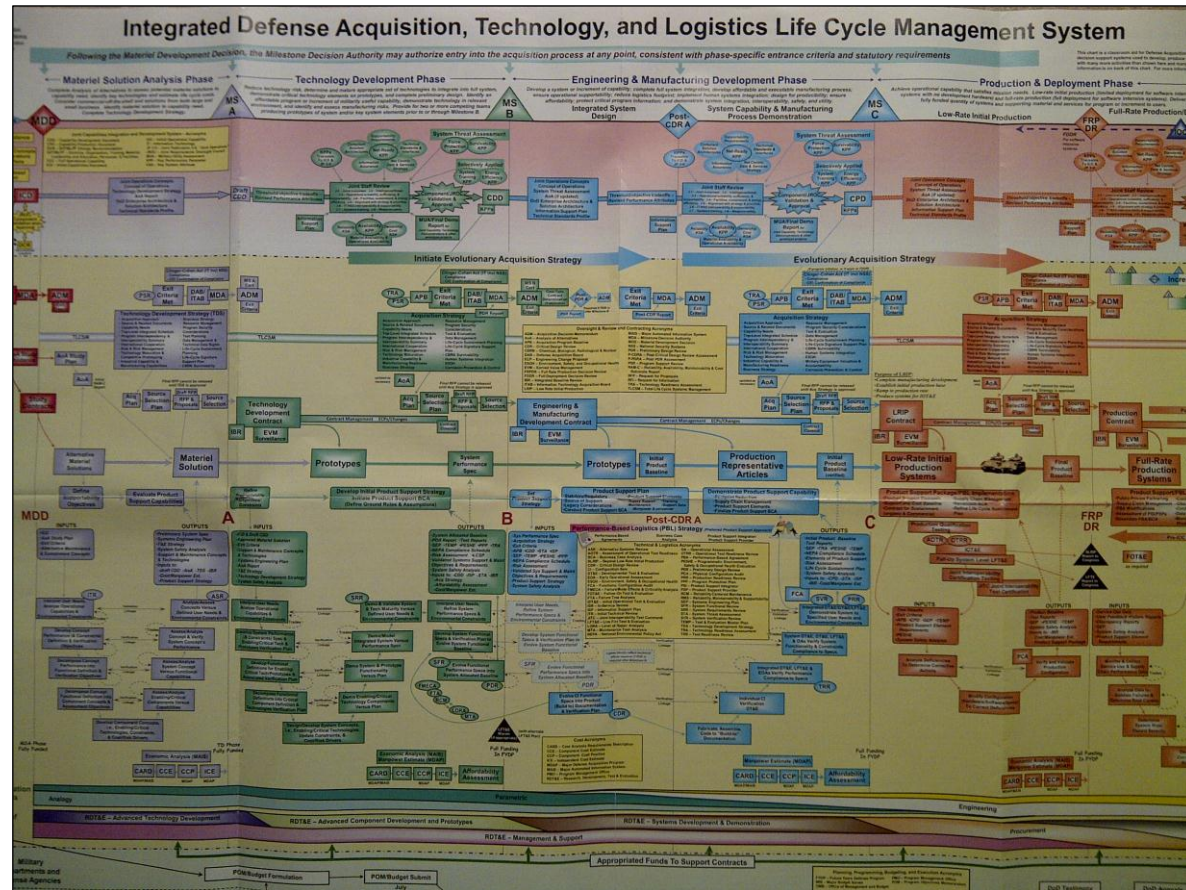


"Einstein's Dilemma." Copyright 1989 John David Thornton

Time to consider a new approach!

The Acquisition Process – Challenges and Pitfalls

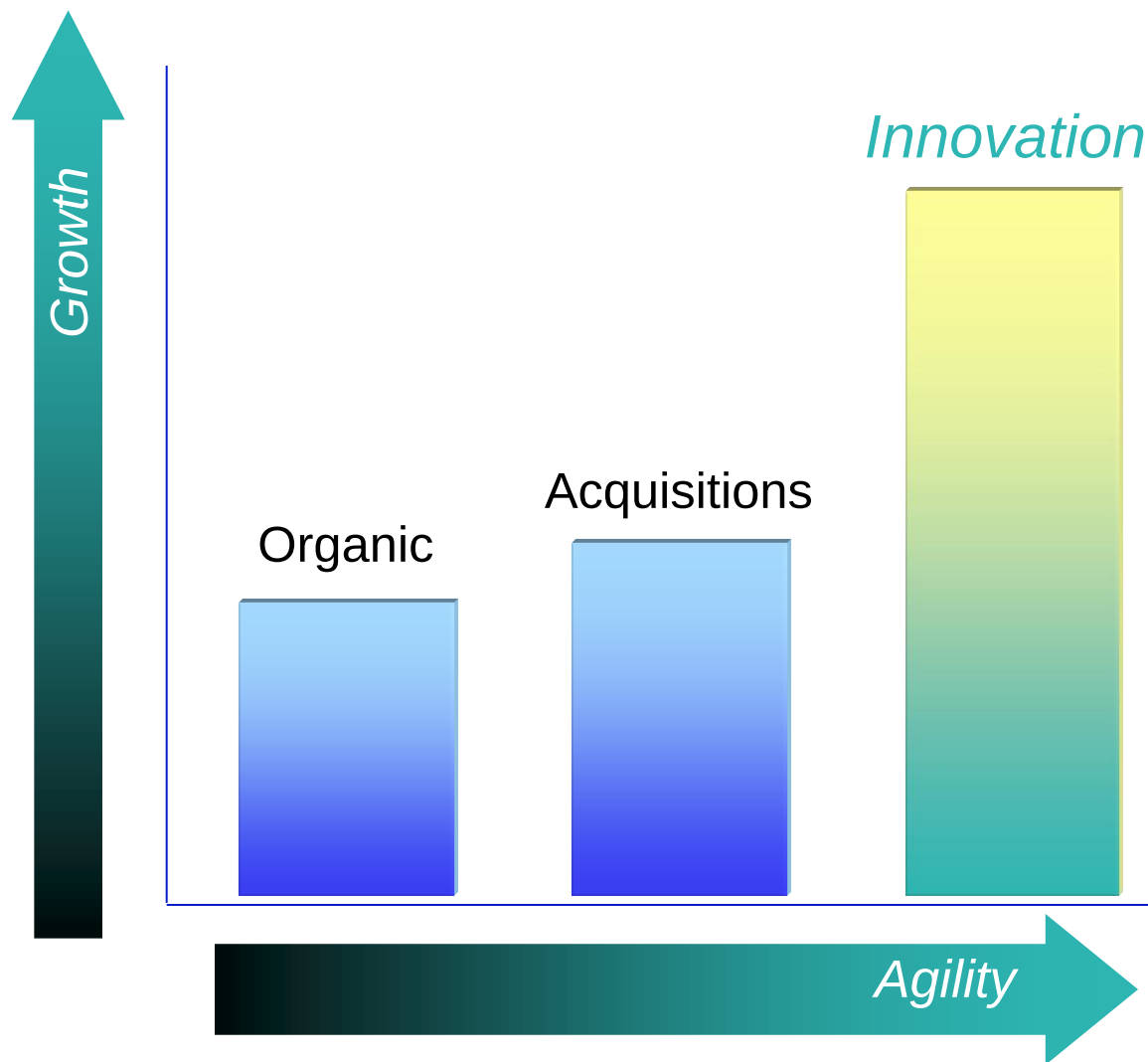
- Better Accountability, Transparency and Requirements
- Decrease Time to Deliver
- Increase Openness and Collaboration
- More Progressive – Facilitate Innovation
- More Agile, Flexible Process



“From the procurement perspective, many organizations are stuck in existing processes from which they can't break free. This makes it impossible to adapt to any new calls for efficiency in terms of time or expense” - Five Challenges For Federal Procurement -- And The Agencies That Meet Them - Chris O'Connell , AOL Government



Agility is Essential to any Growth Strategy...



...and organizations that demonstrate the highest levels of Agility and Innovation realize the greatest growth

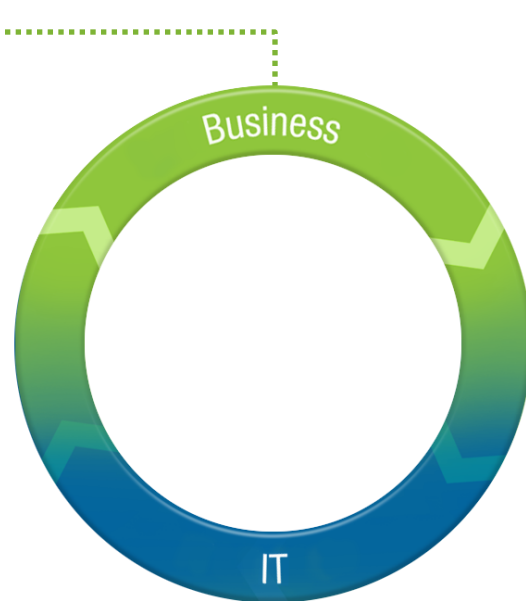
You experience the barriers of time, cost and risk today

Aligning IT and business goals

Business Goals

Grow top and bottom line by:

- Driving business innovation
- Make new markets
- Respond to competitive threats
- Enhance the customer experience



IT Reality

Getting Up and Running

- 2-3 months to specify and procure
- 2-3 months to integrate, configure and deploy

Development Operations

- 3-6 months to go from development to production

Ongoing Effort

- 1-3 months to troubleshoot and tune
- Ongoing effort and downtime to maintain, scale and upgrade

Typical Results:

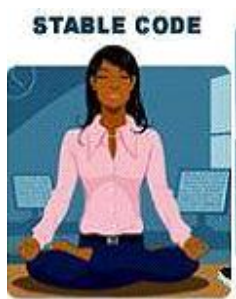
- 34% of new IT projects (US) deploy late
- 55% experience application downtime for major infrastructure upgrades once deployed



What Does an Agile Organization Look Like?

Characteristics	Behaviors
Deep, continuous alignment between business and IT	Active LOB participation in IT strategy formation
Interdisciplinary skills	IT is part of business strategy, not an afterthought
Heavy internal and external use of business technology	IT is key to productivity, collaboration, channel, and decision-making
Governance that makes it easy to make the right decision	Reuse is incentivized; clear decision rights management; clear, enforced policies
IT's strategic importance reflected in org chart	CxO is part of executive council / decision making process





IBM Adoption of Agile Product Development

To IBM Agile is:

- The use of continuous stakeholder feedback
- To deliver *High Quality* Products
- Realized through use-cases / user stories and a series of short time-boxed Sprints



Four major features:

1. Deliver Stable Releases at the end of every cycle
That means it actually works, no severity 1 or 2 defects, few severity 3s - *It's done, Done, DONE!*
2. Meaningful stakeholder interaction w/Feedback
3. Teams are self directed / self organizing – trusted to do the work they need to do...
4. The team works at a sustainable pace

It's just that simple!

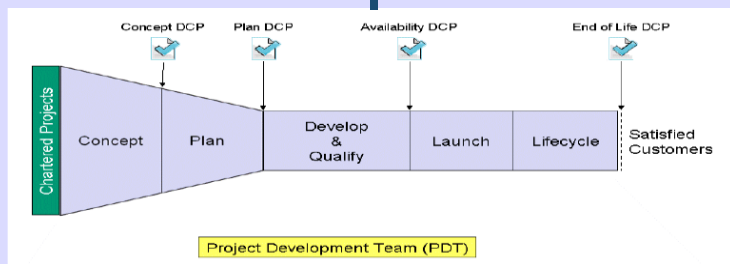


IBM Agile & Lean Product Development Principles

1. **Leverages the inevitability of change and generates new occasions for learning throughout the project.**
2. **Provides leadership to create an atmosphere in which the team determines its capacity and commits to shared goals.**
3. **Uses frequent interaction to move the whole product team toward its goals.**
4. **Engages with customers and other stakeholders throughout the project to generate continuous feedback.**
5. **Measures success in terms of delivering a flow of functional, proven stakeholder-valued capabilities.**
6. **Employs test-driven development and Agile Model Driven Development and is intolerant of defects.**
7. **Strives for relentless improvement of the product and the process.**

Development Organization and Process at IBM

Quality Software Engineering Program



Project Management Process (IPD)

Global Services

- Custom applications, Custom infrastructure, Cloud Computing, Outsourced operations

Software Group

- Application Middleware, Business Analytics, Collaboration, Industry Solutions, Information Management, Integrated Development Environment, Systems and Service Mgmt

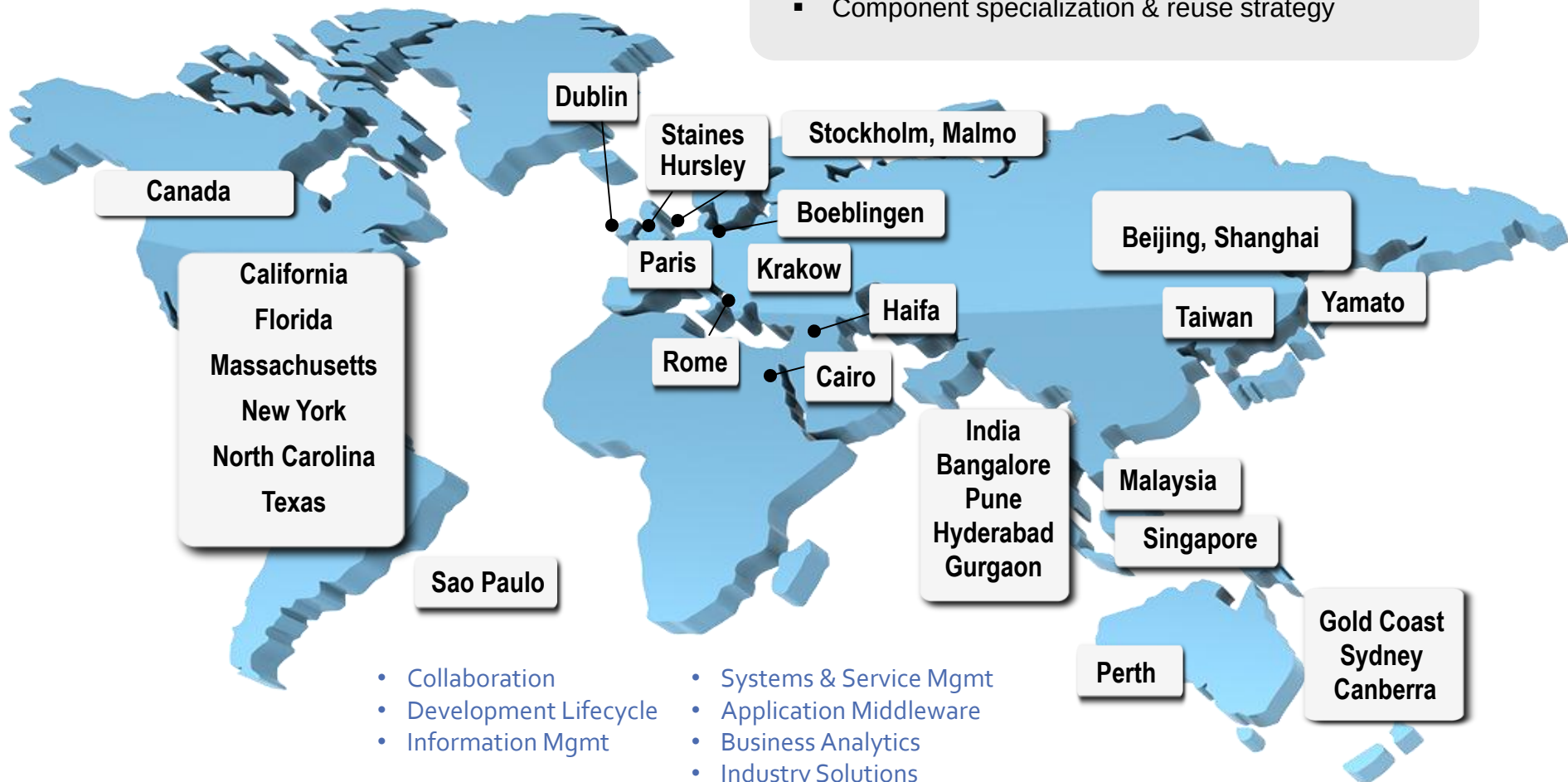
Systems & Technology Group

- Microelectronics, Computer System Hardware, Operating Systems, Storage Systems, Point of Sale Systems

Development Organization and Process at IBM (cont'd)

IBM SWG Development

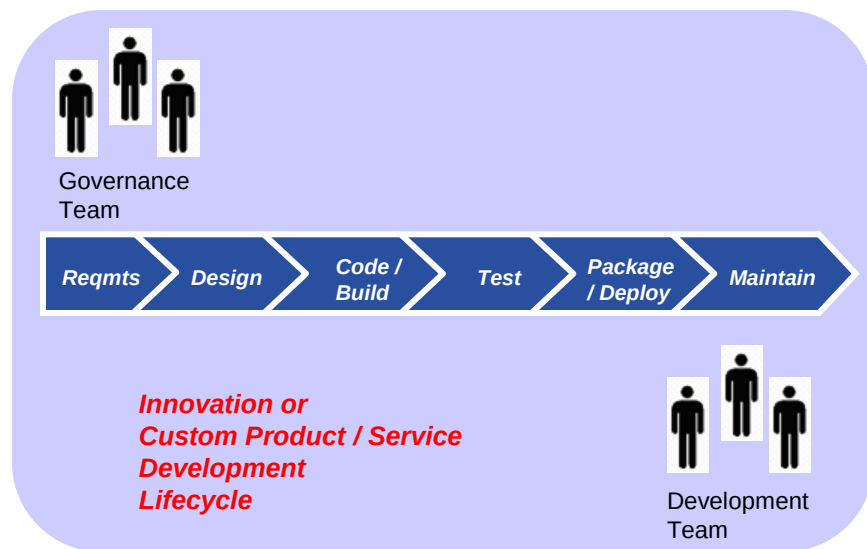
- 7 Autonomous but interdependent SW Brands
- More than 20,000 Developers
 - 35 Labs with 100+ developers
 - 50 Smaller labs with 20+ developers
- A common project governance method with some variability in technical development practices
- Open Source Software Strategy
- Component specialization & reuse strategy



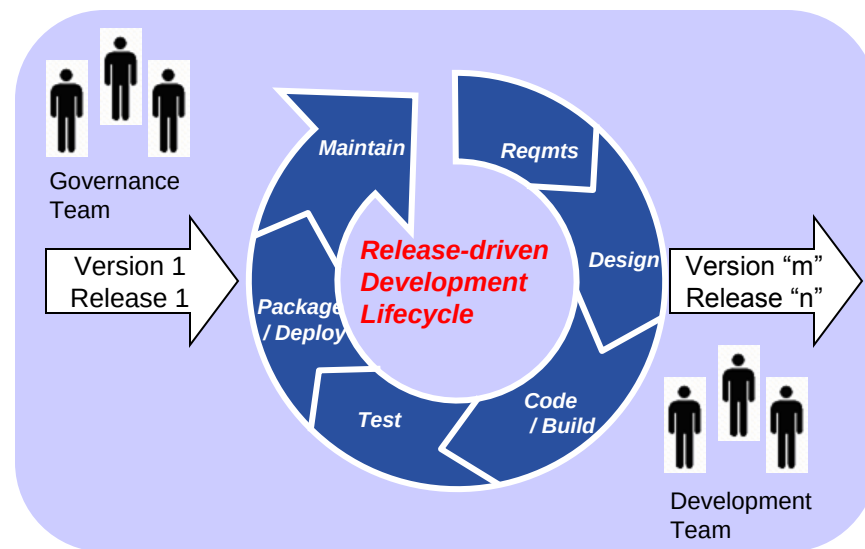
Development Organization and Process at IBM (cont'd)

Development projects may have unique structure and practices.

- New projects - Green field development
- Composed software, systems and services
- Incremental or Iterative development
- Maintenance projects - Brown field development



- Dynamic Teams
- Innovation: new technology
- Custom: follow reference architecture
- Get it right the first time



- Stable teams & roles
- Maturing Technology
- Continuous Improvement



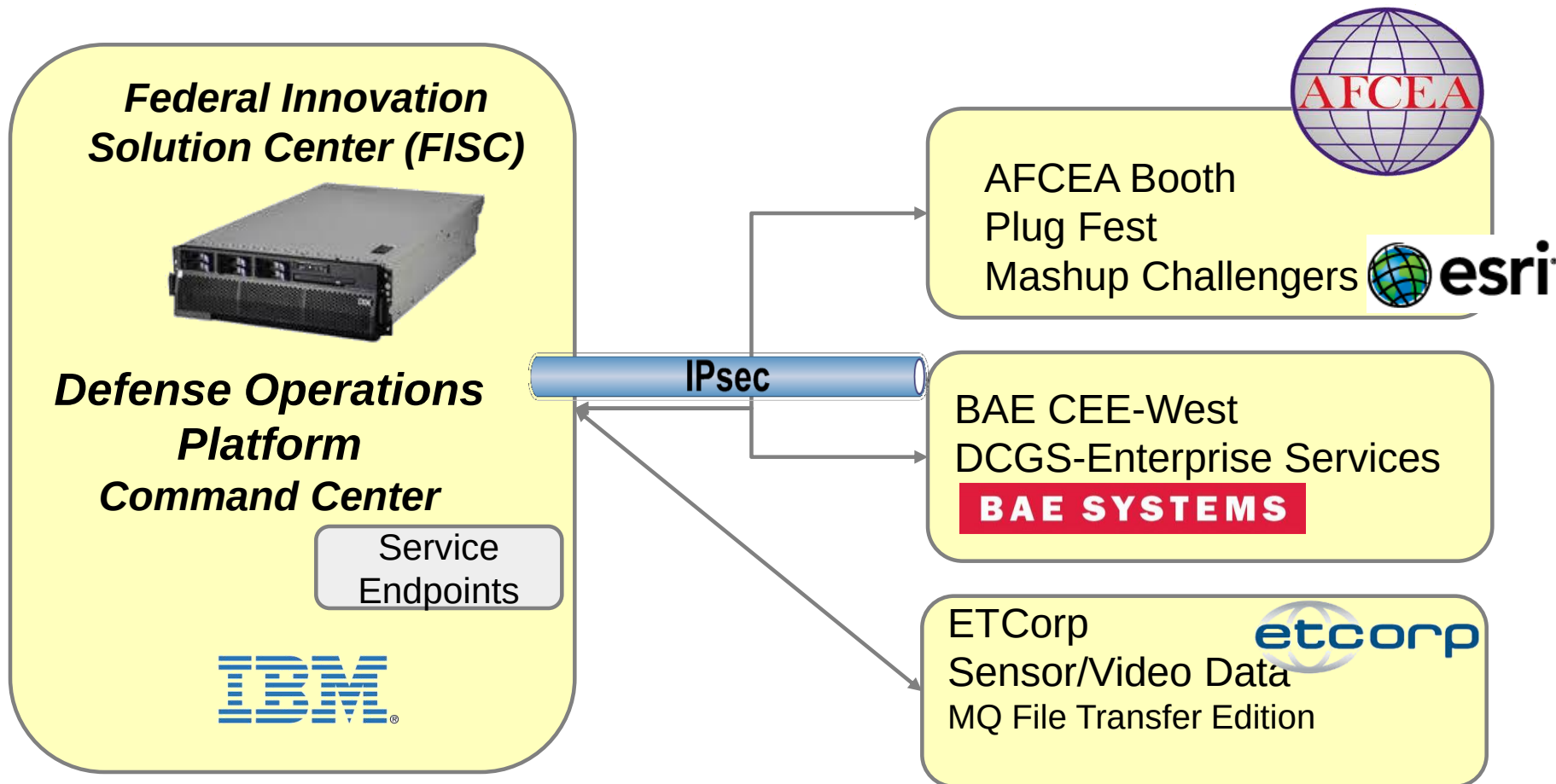
AFCEA Plugfest – Origins of a Concept

What is AFCEA Plug Fest?

- PlugFest demonstrates Agile Development by applying a government provided use case against a commercial technology stack.
 - loosely coupled web services (plugs) provided by vendors
 - adherence to open commercial and government standards
 - turn ingredients into mobile and/or web application as defined by the use-case.
- PlugFest was sponsored by USMC Intelligence, DCGS Program and AFCEA
- IBM Provided the Defense Operations Platform Command Center as a hosting platform for “open standards” services that could be consumed by participants of a “Mash-up” challenge. This showed ability to have distributed shared-service platform.
- Collaboration with ESRI, BAE and ETCorp to demonstrate Interoperability providing services for Mash-up challengers.
- Concept proven at AFCEA Plug Fest activities for Land Forces Southwest and C4ISR conferences in April/May. Article on Plugfest - <http://bit.ly/KP34HG>

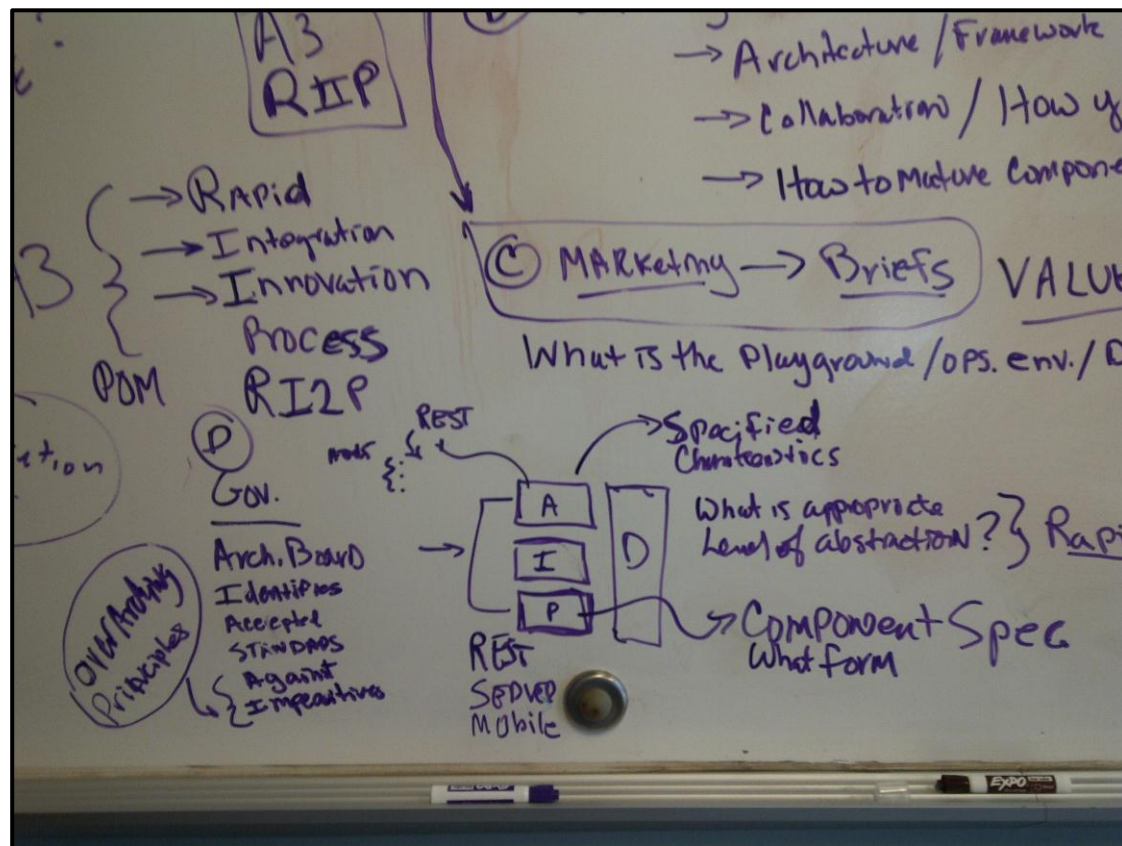
Plugfest – Collaborative Development

"Plug Fest provides precisely the kind of hands-on industry collaboration we need in order to seize technological opportunity and operate our Marine Corps ISR Enterprise with maximum effectiveness; it promises to challenge the status quo, conserve precious resources, and shorten capability delivery timelines." - **USMC Brigadier General Vince Stewart**



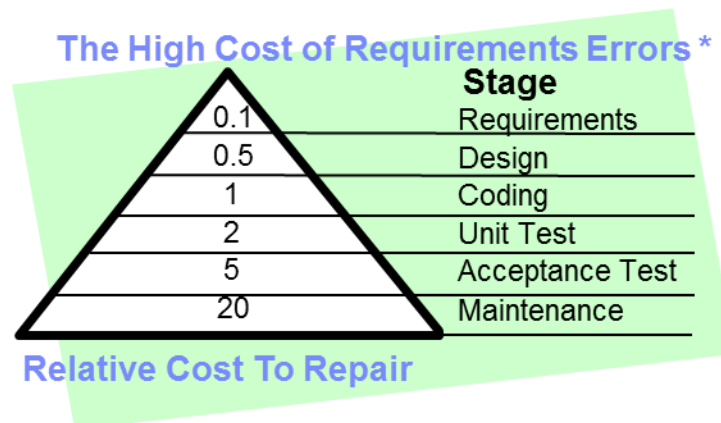
Evolution of a Concept

- Better Accountability, Transparency and Requirements
- Decrease Time to Deliver
- Increase Openness and Collaboration
- More Progressive – Facilitate Innovation
- More Agile, Flexible Process
- Promotes Innovation



Rapid

- Acquisition velocity
 - Does not keep pace with changes in technology
 - Need better way to externalize and iterate requirements
- Employ goal based requirements definition
 - Express requirements / needs to the community before the creation of a formal program
 - Define use case or technology scenario
- Provide better insight into requirements before formal RFP or POM.
- Informs the “art of the possible”



* Source: Rational Software Corporation White Paper 1996



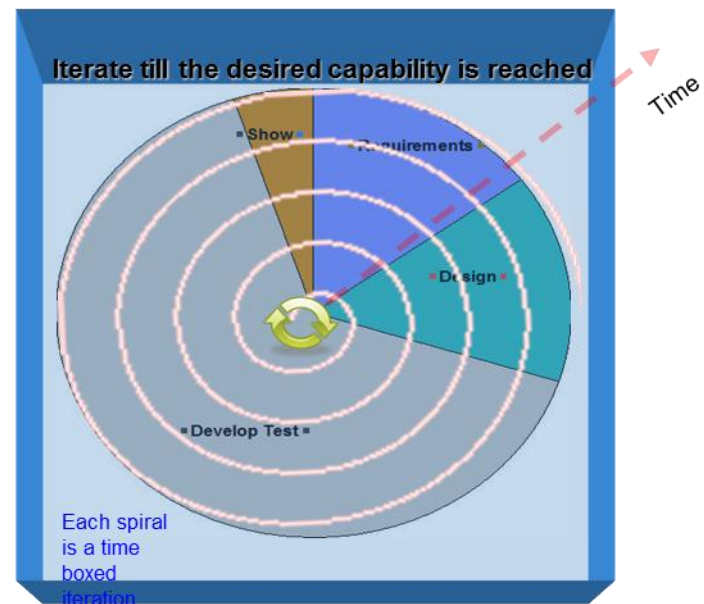


Integration

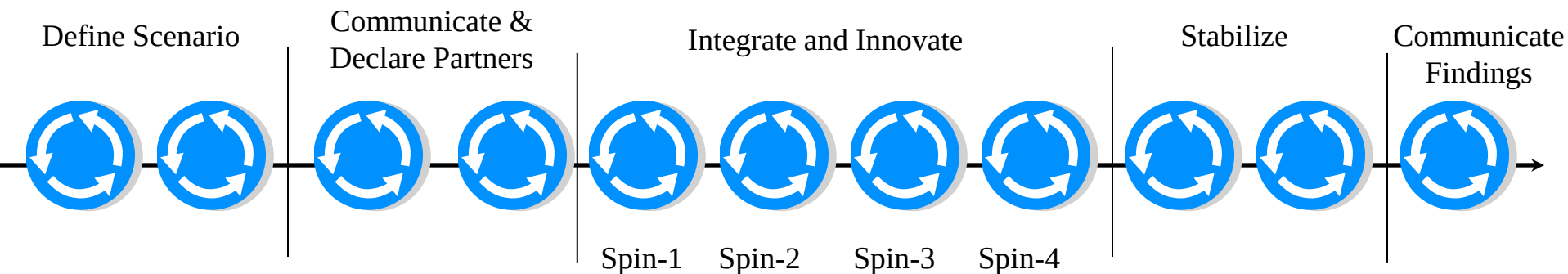
- Need to identify technology integration options and requirements prior to formal program definition
- **Status Quo:** Formal programs include a technology evaluation and study phase
 - Postpones or elongates the construction phase
 - Drains PMO budgets
- Integrators are not necessarily incented to select the best COTS technology partner
- **Future:** Create an environment where cots vendors collaborate and work with potential DE contractors to craft POCs and provide input into reqs which allow for comparative analysis

Process – Flexible Governance

- Not a framework rather more governance and guidance
- Use Agile and iterative approach to development / integration
- Time bound each spin
- Review and evaluate after each spin
- Formal assessment and evaluation



Architecture Board - Flexible Governance Process



Environment, Engagement Processes and Policies & Problem Definition



RI2P – Rapid Integration and Innovation Process

- **Rapid**
 - Accelerate accurate requirements definition
- **Integration**
 - Decrease Integration Time, Cost & Effort
- **Innovation**
 - Prove the “Art of the Possible”
- **Process**
 - Lightweight governance processes that facilitates collaboration and guides contributions

Einstein's Dilemma Suggests a Proven Commercial Solution – RI2P!



ધન્યવાદ

Hindi

Спасибо

Russian

多謝

Traditional Chinese

ขอขอบคุณ

Thai

⑨ 38

Spanish

شکراً

Arabic

Thank You

Brazilian Portuguese

Grazie

Italian

Danke

German

Merci

French

நன்றி

Tamil

多谢

Simplified Chinese

감사합니다

Korean

ありがとうございました

Japanese