Roger Oberg

Vice President of Marketing & Strategy
IBM Rational software

IBM Rational Software
Development Conference 2006

2300 Attendees

Welcome conference alumni

1998

1998
Rational Software
User Conference

1999

RATIONAL

2000

2006

Software.
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IBM Rational
Software
Development
Conference
2006

IBM.

2001

RATIONAL

2002

RATIONAL
USER CONFERENCE

2002

freedom TO
CREATE

2005

IBM
Rational Software
Development
Conference

Better Software.
Better Business.

2005

IBM.

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CE 2004

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RESULTS
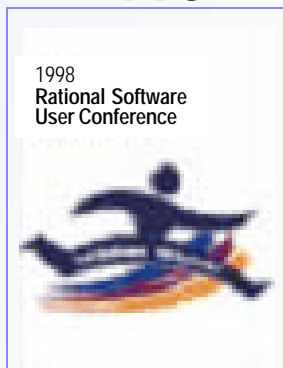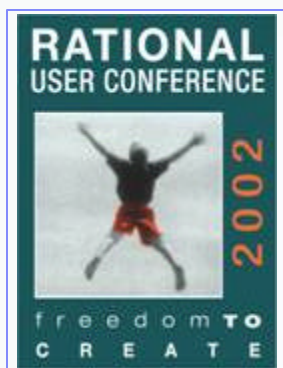
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IBM developerWorks **Live!**

intel

IBM® Rational® Build Forge
formerly **BUILDFORGE**

IBM®

Rational software

WebSphere software

Tivoli software

Lotus software

DB2 Information Management Software

openmake® a product of •catalyst SYSTEMS CORPORATION
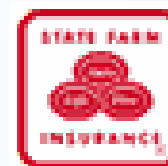
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WIND RIVER

GORILLA LOGIC
draw it. run it.™

RTTS
The Test Automation Experts

black diamond SOFTWARE

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Special welcome

Software Development
A Forward Look

Dr. Daniel Sabbah

General Manager, IBM Rational software
DannyS@us.ibm.com

Agenda

Today's realities

Trends

- Communities
- Modularity
- Empowerment

Convergence and implications

Customer panel discussion

Software.
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Software development evolution must accelerate

Why?

- **Speed of business shifts demand greater innovation, agility**
  Realities today:
  - ▸ **Can be faster to build a new plant than deploy a new ERP system**
  - ▸ **Less time to integrate a parts supplier into a physical supply chain than an IT supply chain**

- **Mass Adoption + Mass Interconnection = New communities**
  - ▸ **Moore's Law + cheap, pervasive connectivity = Mixed blessing**

- **Abstraction + Integration = Forced complexity**

- **Internet + global solutions = Ugly development reality**

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Software development evolution must accelerate

How?

Community

- ▸ **Leverage community effects from Open Source, Metcalf's law, social networking**

Modularity

- ▸ **Rethink modularity and granularity of software**
- ▸ **Focus on "granular decomposition" for re-composition**

Empowerment and innovation through passive governance

- ▸ **Maximize value and flexibility of the knowledge-based workforce**
- ▸ **Minimize chaos while maximizing individual decision rights**

Innovation + global policy shifts are destabilizing the marketplace... and it's accelerating

- *Technology* systematically reduces interaction costs and extends global reach

- *Globalization* increases complexity of business requirements and IT agility

- Constant global policy shifts alter *regulatory* and competitive climates

- Intense pressure on *business models* drives focus on core competencies

Average Lifetime of S&P 500 Companies
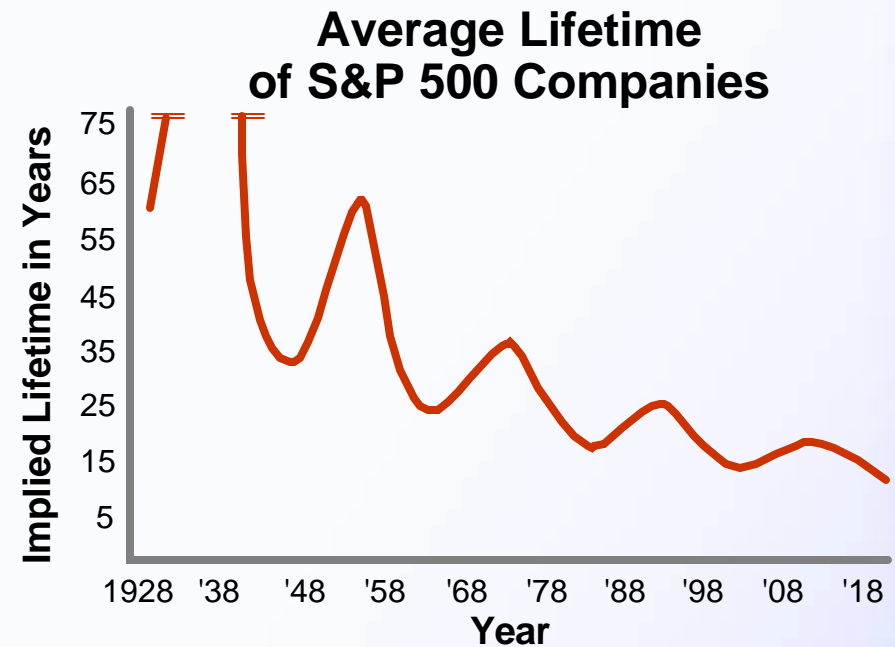
Source: *Creative Destruction*, by Richard Foster

Destabilizing forces converge to significantly intensify global competition

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Business regulations drive new needs

- **New and dynamic *overlays* of business requirements on traditional IT and product requirements**

- **Visibility and accountability + requirement of agility**
  - ▶ **Examples**
    - **Do 3rd party fund manager systems have proper Basel II trading reserve minimums?**
    - **Are business reporting requirements properly translated into custom code for SOX compliance… your responsibilities as a trading partner?**
    - **Are medical payment processing outsourcers HIPAA compliant?**
    - **How do you ensure that all software suppliers are FAA certified when you have multiple contributors?**

BANK FOR INTERNATIONAL SETTLEMENTS

HIPAA.ORG

Sarbanes-Oxley
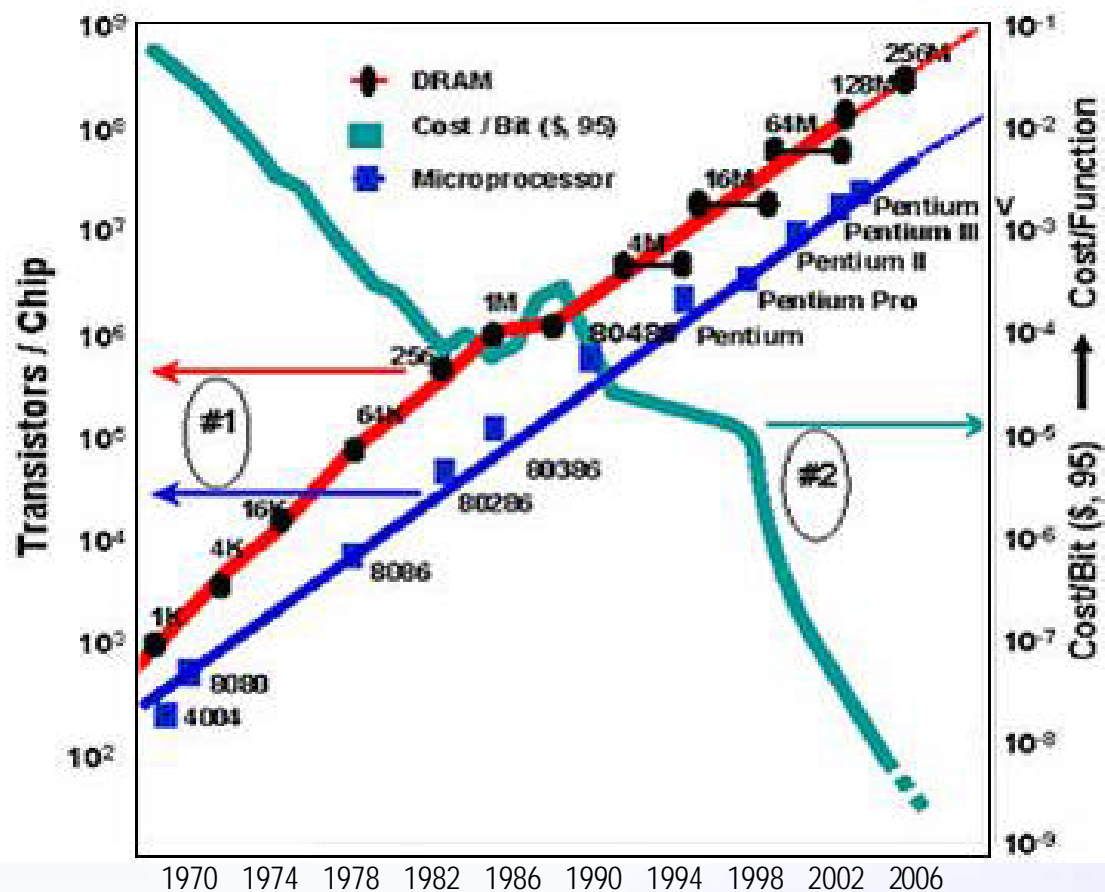Financial and Accounting Disclosure Information

FEDERAL AVIATION ADMINISTRATION
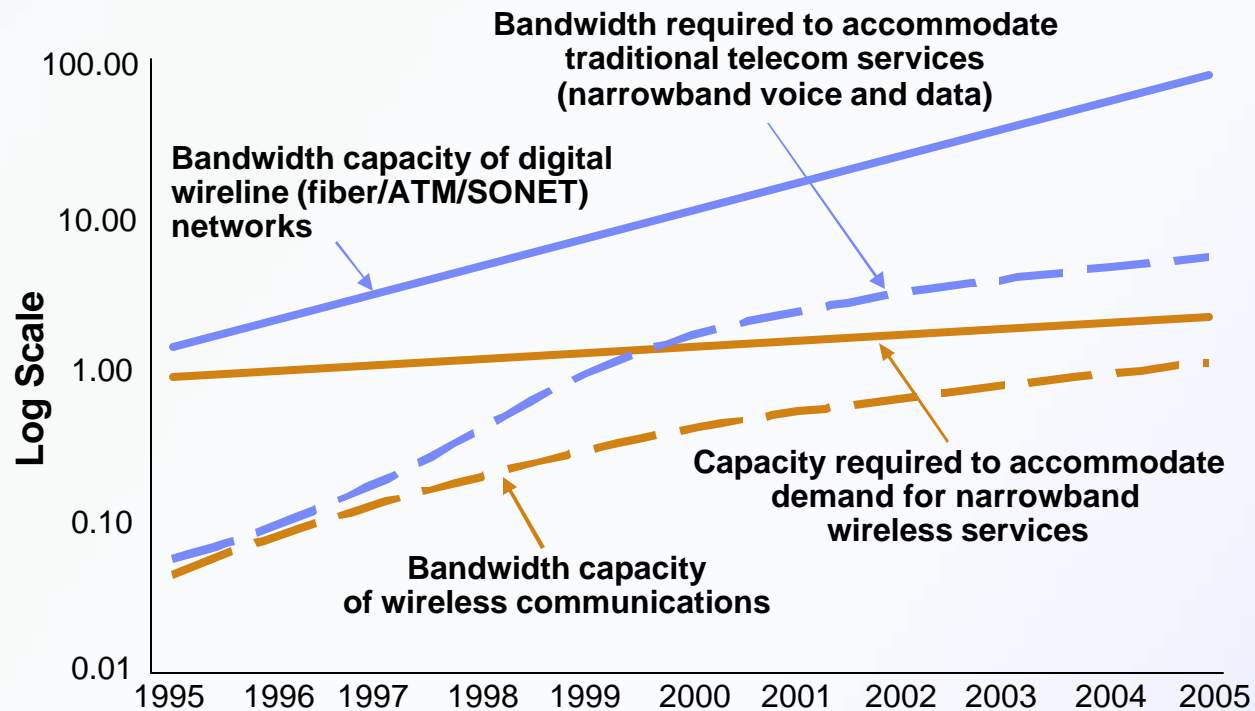
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Moore's Law +...

- **Physical computing limits continue growing exponentially**

+ "Free", unlimited bandwidth =

- **Bandwidth capacity almost exponentially greater than demand**


Source: National Academies Press

Moore's Law + cheap, unlimited bandwidth = mixed blessing

- **Enabling conditions driven by macro trends in cheap computing and unlimited bandwidth – media/data convergence**

- **Side Effects: The combination can become a curse to innovation if an organization's information technology isn't allowed to advance at the same rate**
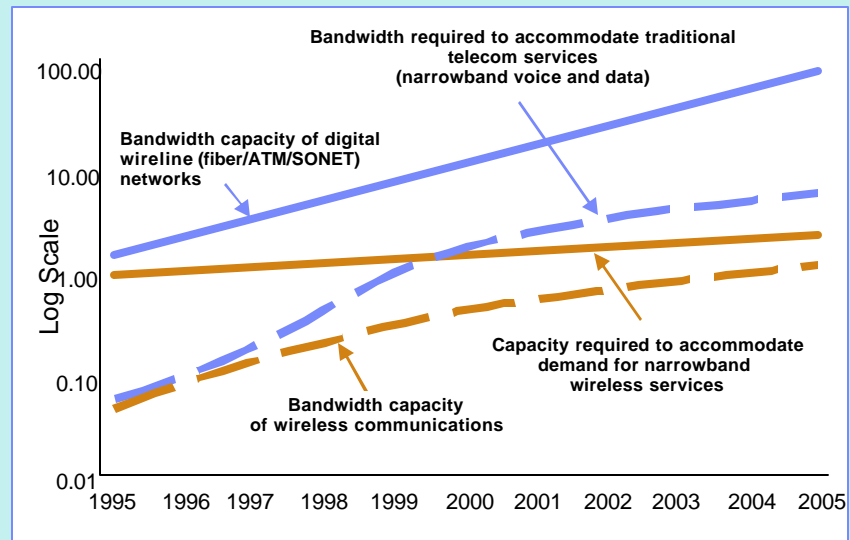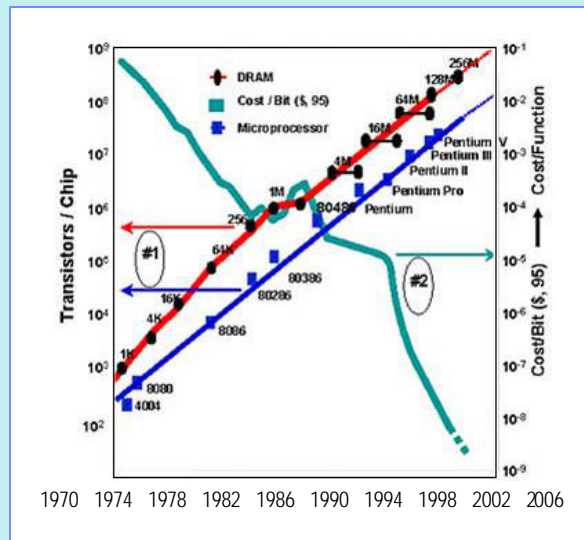
Software architecture or "Sedimentary Layers"*

- **In contrast to physical computing**
  - ▸ Software evolution is constrained by decades of legacy code
  - ▸ Agility is constrained by layers
  - ▸ Value comes in automation of new business abstractions/rules or models

- **Chaos results from**
  - ▸ Multiple generations of 'captured intelligence' in the form of code/business rules
  - ▸ Mixed with new generations of assumptions (mainframe to C/S to peer distributed – and variants)
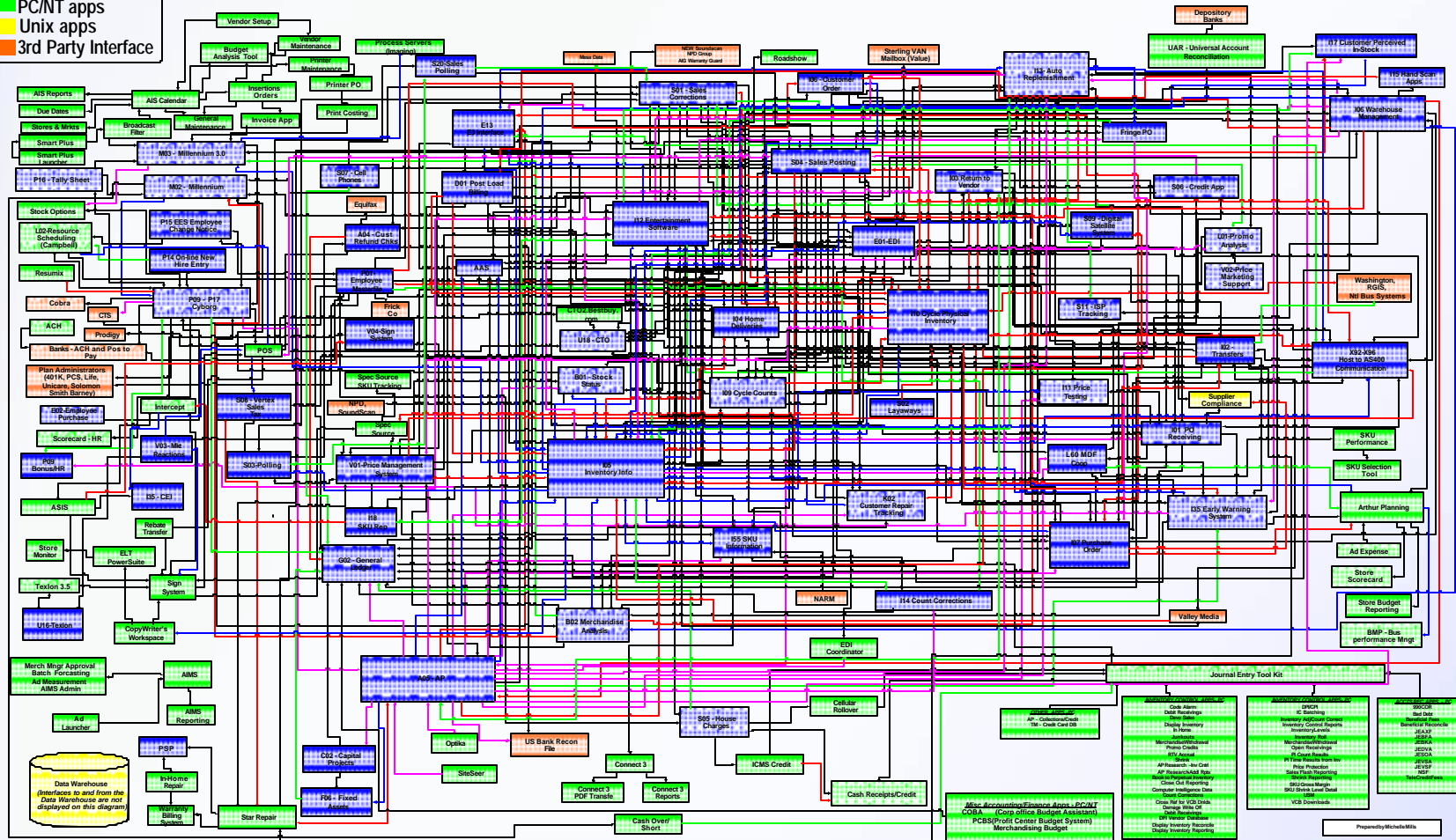
- **Software archeology or software architecture?**

Layer
Ajax / PHP
Palm / Blackberry
Linux
Java
VB / C++
SAP/ Oracle
UNIX
CICS/IMS
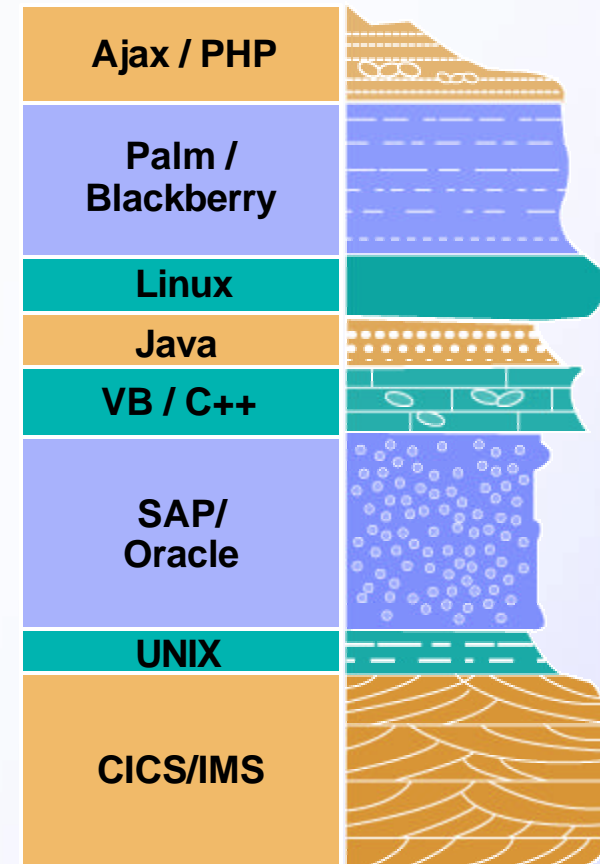
Source: *"The Agile Dance of Architectures",* by John Hagel, III and John Seely Brown

Software engineering realities
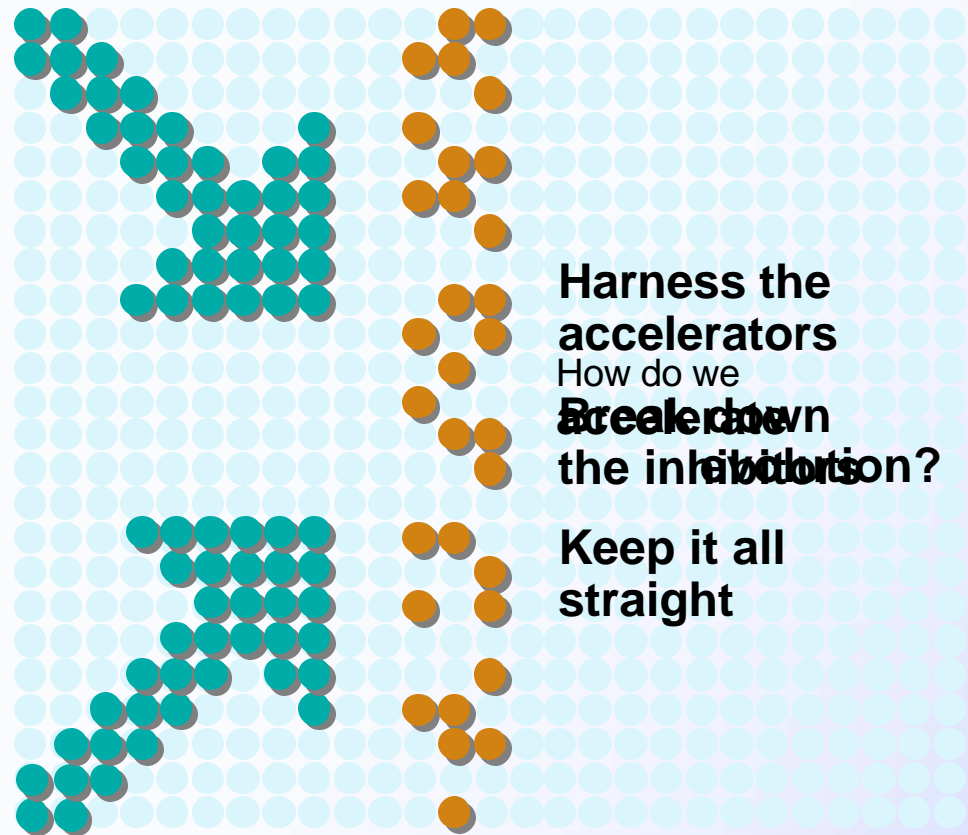
Today's realities

Accelerators
- Intense global competition
- Expanding regulatory requirements

Inhibitors
- "Sedimentary Layers" of software architectures
- Legacy of point-to-point integrations

Enabling Conditions
- Moore's Law drives physical computing limits
- Bandwidth capacity many factors greater than demand

Harness the accelerators

How do we **Break down accelerate the inhibitors adoption?**

Keep it all straight

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- **Communities**
- **Modularity**
- **Empowerment**

Convergence and implications

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Accelerate software evolution

Community

- Leverage community effects from Open Source, Metcalf's law, social networking

Accelerate software evolution

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- Rethink modularity and granularity of software
- Focus on "granular decomposition" for re-composition

Accelerate software evolution

Empowerment

- Maximize value and flexibility of a knowledge-based workforce
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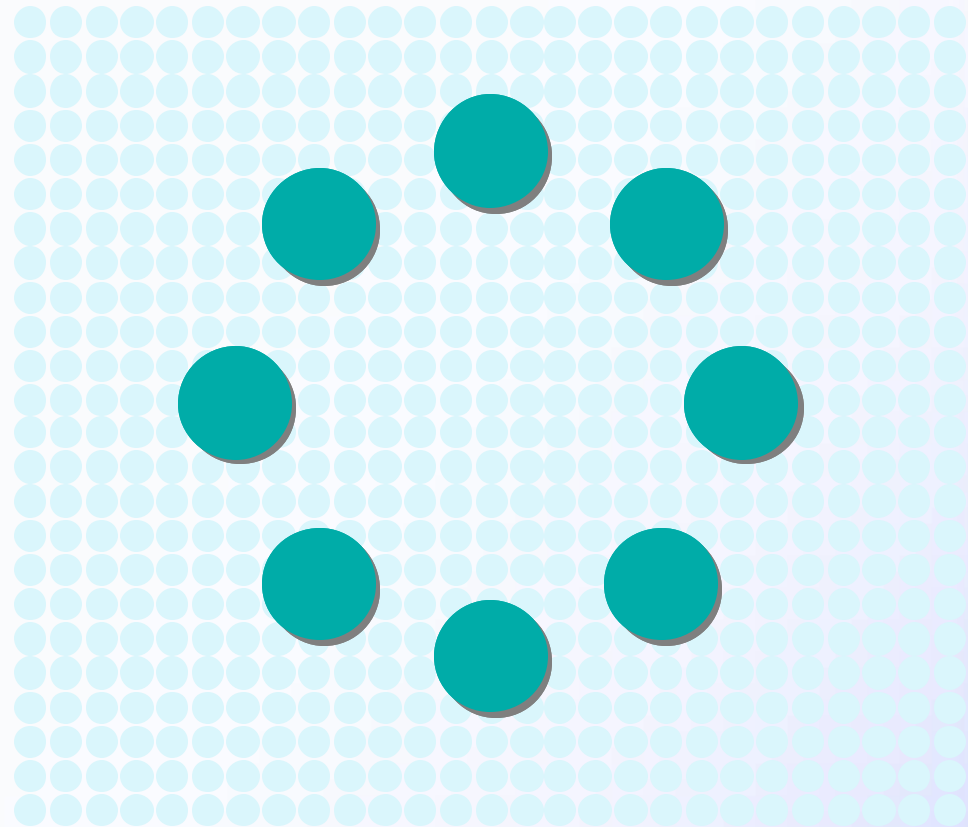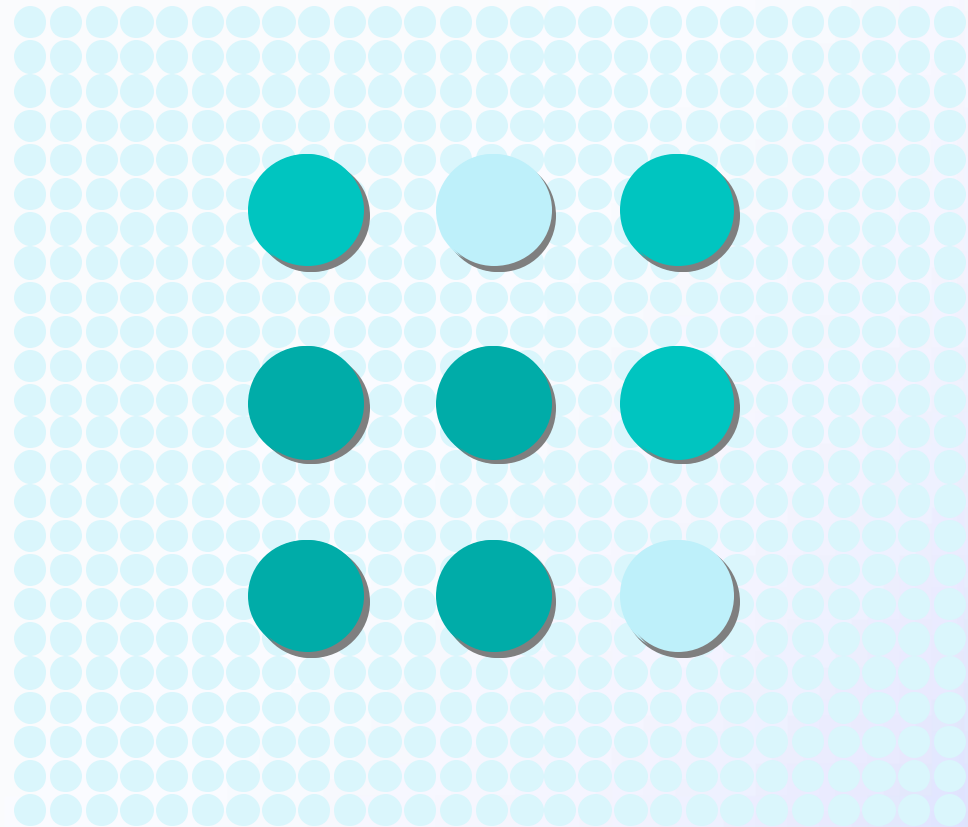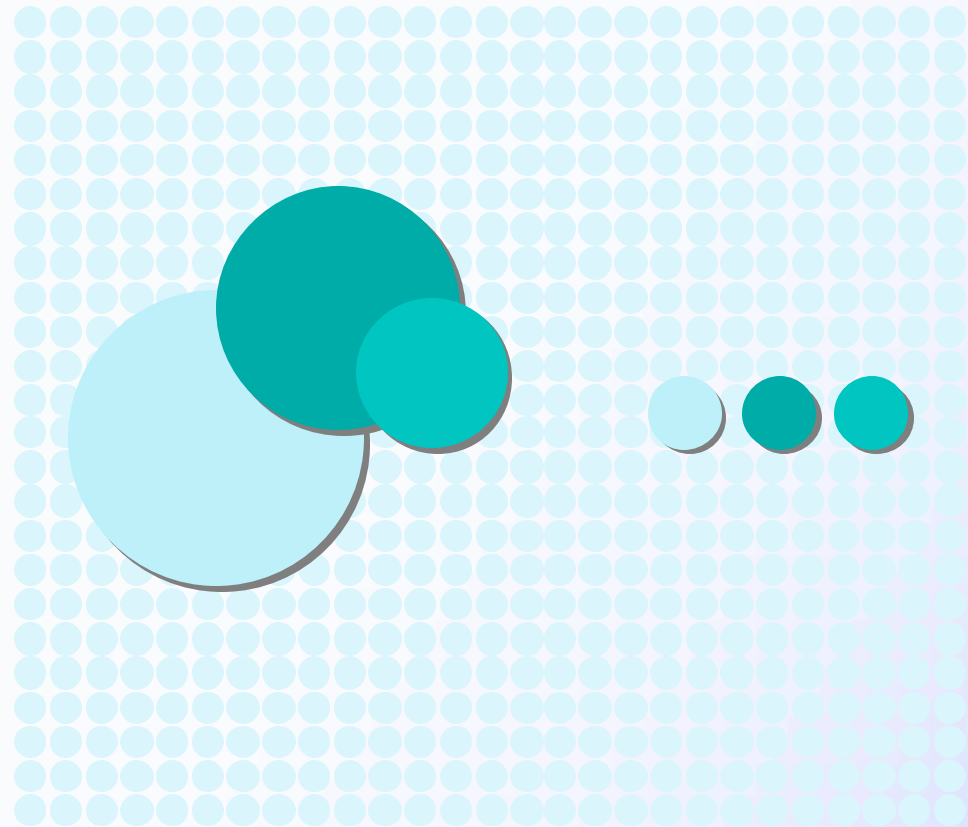
Convergence and implications

Customer panel discussion

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Open computing
The route to collaboration and innovation

Open standards

- **Promote interoperability by using open, published specifications**

Open architecture

- **Increases flexibility by building loosely coupled and reconfigurable solutions**

Open source software

- **Promotes standards and leverages community development and collaborative innovation**
- **Optimizes network effects and 'minimalism' in design**

Open computing
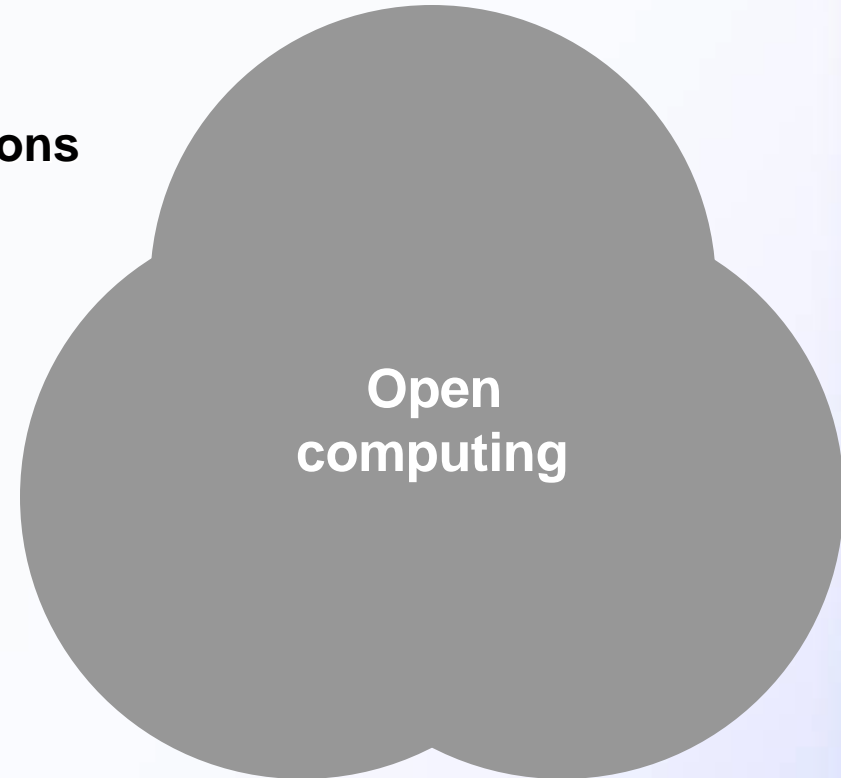
Communities
Considerations for software development

- **Manage chaos of development communities to gain leverage across multiple disciplines**

- **Finding the balance between shared code, code reuse and open source**

- **Balance interest and needs to be community founder, contributor, participant or observer**

Tipping Point

Effectiveness

Connections
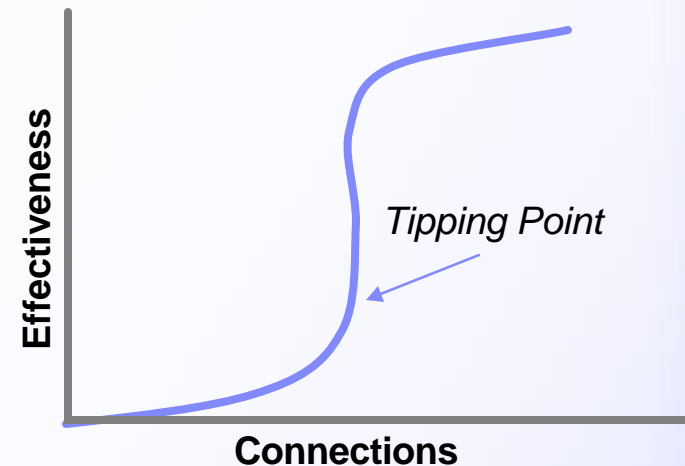
Source: Victor MacGill, *Exploring the New Science of Chaos and Complexity*

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Modularity
Considerations for software development

- **Reuse of existing highly *stable* legacy code**

- **Allows new service "suppliers" to be brought online quickly and efficiently**

- **Once secured, allows for transparency of software service supplier(s) and *predictability* of services**

- **Enables development of Communities of Interest which leads to great *agility* and *quality* in software delivery**

Customer

Division

Shared Svc

Supplier

Outsourced

Software.
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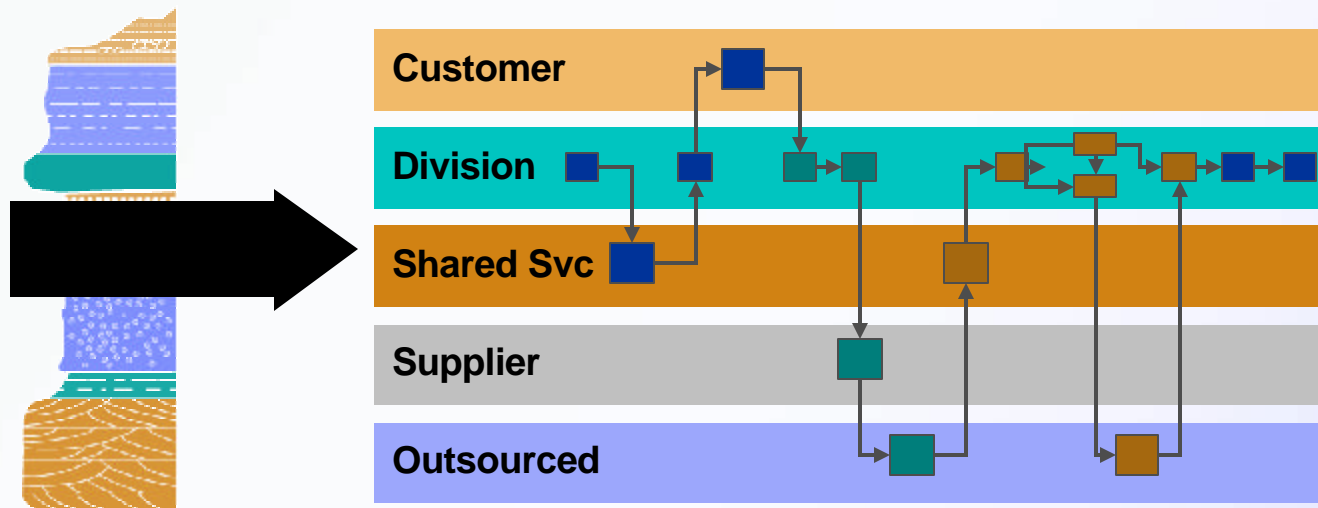
Governance
Considerations for software development

- **Teams are *empowered to execute* and be risk takers through clear governance (not an oxymoron)**

- ***Greater efficiencies* through reuse**

- ***Clearly defined goals* and measurements drive clear ROI**

- ***Greater line of sight* drives management efficiencies from project level to CxO levels**

- ***Increased efficiencies* of globally distributed development environments**

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1927 Ford Motor Company Rouge River Plant
World's first fully vertical manufacturing plant

- **15,767,708 square feet of factory floor**

- **120 miles of conveyors**

- **100 miles of railroad track**

- **16 locomotives**

- **Ore docks, steel furnaces,
  coke ovens, rolling mills,
  glass furnaces, tire-making plant,
  stamping plant, engine casting plant,
  frame and assembly plant,
  transmission plant, radiator plant,
  tool and die plant, and even
  a paper mill**

- **A power plant produced enough
  electricity to light a city the size of nearby Detroit**

1 single model car
No options
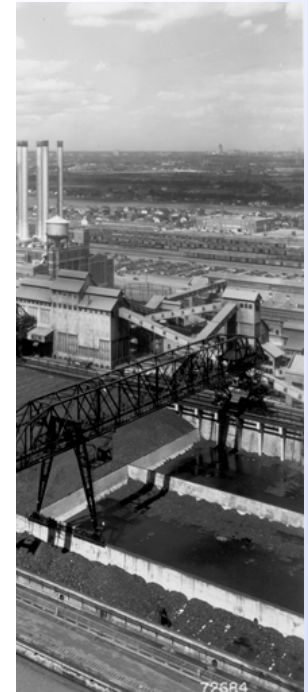
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2005 Ford Motor Company

- **2,500 suppliers worldwide**

- **$70 Billion expenditure on parts**

- **8 brands**

78% total vehicle content from suppliers

61 models cars and trucks
Thousands of variations with options

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Agenda

Today's realities

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- Communities

- Modularity

- Empowerment
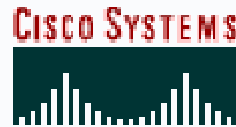
Convergence and implications

Customer panel discussion

Introducing…

Joe Bugajski
VP Global Standards

Jan Roberts
Senior Director
Central Engineering Tools & Services (CETS)
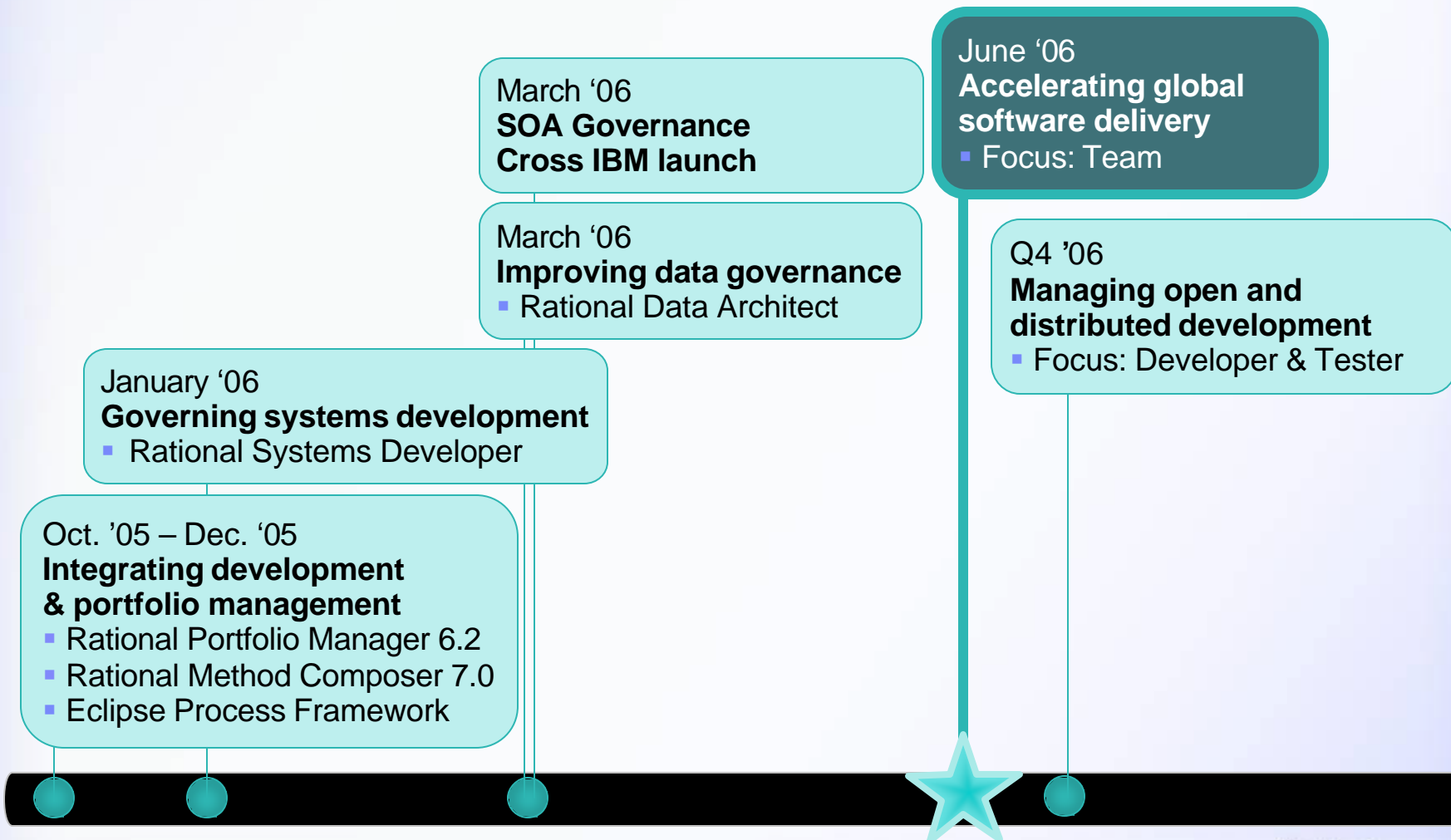*Network Software & Systems Technology Group (NSSTG)*

Jay Cappy
Managing Director

Rational release plans in 2006
Platform support for Business Driven Development

June '06
Accelerating global software delivery
- Focus: Team

March '06
SOA Governance
Cross IBM launch

March '06
Improving data governance
- Rational Data Architect

Q4 '06
Managing open and distributed development
- Focus: Developer & Tester

January '06
Governing systems development
- Rational Systems Developer

Oct. '05 – Dec. '05
Integrating development & portfolio management
- Rational Portfolio Manager 6.2
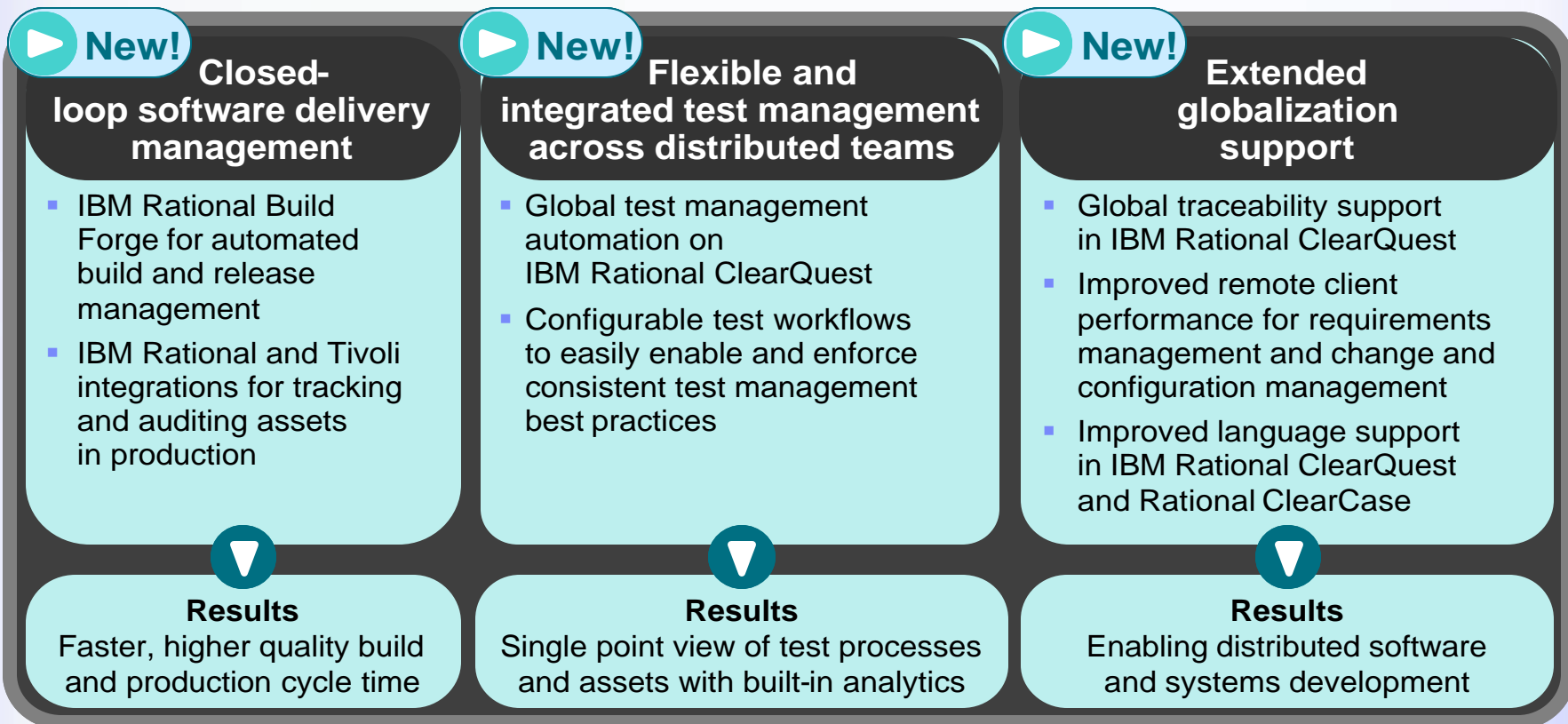- Rational Method Composer 7.0
- Eclipse Process Framework

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Accelerating global software delivery

New Business Driven Development Capabilities in the Rational Software Development Platform

New! **Closed-loop software delivery management**

- IBM Rational Build Forge for automated build and release management
- IBM Rational and Tivoli integrations for tracking and auditing assets in production

Results
Faster, higher quality build and production cycle time

New! **Flexible and integrated test management across distributed teams**

- Global test management automation on IBM Rational ClearQuest
- Configurable test workflows to easily enable and enforce consistent test management best practices

Results
Single point view of test processes and assets with built-in analytics

New! **Extended globalization support**

- Global traceability support in IBM Rational ClearQuest
- Improved remote client performance for requirements management and change and configuration management
- Improved language support in IBM Rational ClearQuest and Rational ClearCase

Results
Enabling distributed software and systems development

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Thank You

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Today

Lunch (Seating by Geography)
12:00 p.m. – 1:30 p.m.

Exhibit Hall & Solution Center
Opening & Reception
5:00 p.m. – 8:00 p.m.

Sponsored by:

- **Spotlight Theater Presentations**
- **Ready for Rational Pavilion**
- **Tech Preview Lounge**
- **Exhibit Hall Game**

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Software.

Tomorrow

Software. Jam Session.
8:00 a.m. – 9:30 a.m.

Erich Gamma
IBM Distinguished Engineer,
IBM Rational software

John Wiegand
IBM Distinguished Engineer,
IBM Rational software

Lee Nackman
VP Product Development
& Customer Support,
IBM Rational software

Martin Nally
IBM Distinguished Engineer
& Chief Technical Officer,
IBM Rational software

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