Bimodal IT: Models for delivering scalable innovation in traditional enterprises

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To solve any problem that has never been solved before, you have to leave the door to the unknown ajar.

Richard Feynman
Key Issues

1. What is bimodal IT and why should you care?
2. How should you get started in bimodal IT?
3. How do you progress to enterprise bimodal and what traps should you avoid?
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Bimodal IT

"You Must Be Part Solid and Part Fluid to Thrive in Digital Business"
Being Rock Solid Is the Core of the Business
Traditional Approaches Were Designed for Stability, Not Fluidity
Being Fluid Means Taking Some Risks
Bimodal IT Means —

Having two modes of IT, each designed to develop and deliver information- and technology-intensive services in its own way.

Mode 1 is traditional, emphasizing predictability, accuracy, stability.

Mode 2 is exploratory, emphasizing agility and speed.
Bimodal IT

Mode 1

Mode 2
Paths for IT

Economic Development
Citizen Engagement

Operational Efficiency
Cost Reduction
Perceptual Inertia

"This is what our IT shop does. And they need to keep doing it."

Operational Efficiency
Cost Reduction
Perceptual Inertia

Economic Development
Citizen Engagement

"We don't really think of our IT shop this way. They're not very good at this."

"This is the heart of our digital government strategy."
Both Paths Support Business Outcomes

Economic Development
Citizen Engagement

Operational Efficiency
Cost Reduction
Digital Business Outcomes

Economic Development
Citizen Engagement

Digital business is the creation of new business designs reached by blurring the digital and physical worlds … via an unprecedented convergence of people, business and things.

A business moment is a transient opportunity that is exploited dynamically. They represent moments of untapped opportunity and competition that can rapidly change the dynamics across industries.
Digital Business Outcomes

Economic Development
Citizen Engagement

- Digital
- Physical
- People
- Business
- Things
- Transient
- Dynamic
- Competition
Let's do this *Digital* thing!

No way! Too risky!
The benefit outweighs the risk!

Just do it. Go around IT if necessary!

Let's do this Digital thing!
Bimodal IT

Mode 2

Mode 1
Bimodal Is Not —

- Just dividing something in two
- Agile development
- Pace layering
- An IT capability
- An operating model or organization chart change
- Shadow IT
The Third Era of Enterprise IT

<table>
<thead>
<tr>
<th>Focus</th>
<th>IT Craftsmanship</th>
<th>IT Industrialization</th>
<th>Digitalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capabilities</td>
<td>Technology</td>
<td>Processes</td>
<td>Business models</td>
</tr>
<tr>
<td></td>
<td>Programming, system management</td>
<td>IT management, service management</td>
<td>Digital leadership</td>
</tr>
<tr>
<td>Engagement</td>
<td>Isolated, disengaged internally and externally</td>
<td>Treat colleagues as customers, unengaged with external customers</td>
<td>Treat colleagues as partners, engage external customers</td>
</tr>
<tr>
<td>Outputs and Outcomes</td>
<td>Sporadic automation and innovation, frequent issues</td>
<td>Services and solutions, efficiency and effectiveness</td>
<td>Digital business innovation, new types of value</td>
</tr>
</tbody>
</table>
The Industrialization Era Created Marathon Runners

<table>
<thead>
<tr>
<th>IT Industrialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear processes</td>
</tr>
<tr>
<td>IT management,</td>
</tr>
<tr>
<td>service management</td>
</tr>
<tr>
<td>Treat colleagues as</td>
</tr>
<tr>
<td>customers, unengaged</td>
</tr>
<tr>
<td>with external</td>
</tr>
<tr>
<td>customers</td>
</tr>
<tr>
<td>Services and solutions, efficiency and effectiveness</td>
</tr>
</tbody>
</table>

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The Digital Era Requires Sprinters

Digitalization

Business models

Digital leadership

Treat colleagues as partners, engaged external customers

Digital business innovation, new types of value

Gartner
Bimodal IT = Marathon Runners + Sprinters, Deeply Different, Both Essential

<table>
<thead>
<tr>
<th>Mode 1</th>
<th>Mode 2</th>
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</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>Goal</td>
</tr>
<tr>
<td>Price for performance</td>
<td>Agility</td>
</tr>
<tr>
<td>Waterfall, ITIL</td>
<td>Value</td>
</tr>
<tr>
<td>Plan-driven, approval-based</td>
<td>Approach</td>
</tr>
<tr>
<td>Enterprise suppliers, long-term deals</td>
<td>Governance</td>
</tr>
<tr>
<td>Good at conventional process, projects</td>
<td>Sourcing</td>
</tr>
<tr>
<td>IT-centric, removed from customer</td>
<td>Talent</td>
</tr>
<tr>
<td>Long (months)</td>
<td>Cycle Times</td>
</tr>
<tr>
<td></td>
<td>Short (days, weeks)</td>
</tr>
</tbody>
</table>

Think Marathon Runner

Think Sprinter
Pace Layering and Bimodal IT Are Complementary

Mode 1
- Governance

Mode 2
+ Change

- Systems of Innovation
+ Systems of Differentiation
- Systems of Record

Are Complementary
IT leaders should care about becoming bimodal because they cannot confront the range of needs presented by digital business with a single, conventional mode of IT.

Don't be the bottleneck!
Key Issues

1. What is bimodal IT and why should you care?
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3. How do you progress to enterprise bimodal and what traps should you avoid?
# Civic Moment Scenario: Precision Emergency Response

**Singular Objective**

Accurately assess all real or possible threats to human life and property to take precise, appropriate actions.

1. Public safety aerial surveillance platforms detect hazmat incident and dispatch emergency responders.
3. Civilian vehicle navigation devices route traffic away from incident.
4. Shipping manifest transmits hazard classifications of cargo to emergency personnel.
5. Individual hazmat containers transmit status of contents and physical environment.
6. Remote sensors continuously monitor air quality, weather conditions and infrastructure integrity.
7. Incident data and social media are analyzed to measure progress, predict outcomes and recommend tactics.
8. Drones monitor on-scene human and vehicular activity to detect and note atypical activities or behaviors.
9. First responders arrive. Incident commander's decisions are informed by a full spectrum view of a dynamic situation.

**Elapsed time:** 5 minutes


Accurately assess all real or possible threats to human life and property to take precise, appropriate actions.
The Big Issues

- Legacy systems
- Legacy processes and change management
- Legacy mindsets
- Protection vs Sharing mindset
Great marathon runners do not automatically make great sprinters.

Great sprinters aren’t usually great marathon runners.
Avoid the "Timid Middle"

Mode 1

Mode 2

Stuck in the middle
"Fit for no one"
Start Before You Think You Are Ready

Project Bimodal
- Innovation Lab
- Isolated Small Vendors
- Agile
- Iterative Collaboration

Enterprise Bimodal
Integrated:
- Agile, Iterative Methods
- Highly Collaborative Cross-Business
- CFO and CEO on Board
- Flexible Funding
- Adaptive Sourcing
- Scaling Process

Low Maturity
Limited Value

High Maturity
High Value

Typical Second Mode Starting Point
Point Beyond Which Enterprise Change Significant
Start Before You Think You Are Ready

**Project Bimodal**
- Innovation Lab
- Agile
- Isolated Small Vendors
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**Enterprise Bimodal**
- Integrated:
  - Agile, Iterative Methods
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  - Scaling Process

Low Maturity
Limited Value

High Maturity
High Value

🌟 Typical Second Mode Starting Point
🔥 Point Beyond Which Enterprise Change Significant
Bimodal Is Very Experiential — You Have to Do It to Learn It
Project Bimodal — Mode 1 Dominates

- Success mostly under IT control
- Fragmented, not systemic, capability
- Project, not capability-focused
- Lower risk projects, with limited scope and limited Mode 1 impact
Select Your Projects Based on Their Mode 1 Impact

"A Project Will Never Scale If Mode 1 Is Not Willing and Fully Supportive."
— Chris Osgood, Co-Founder and Co-Chair, MONUM
Recommended Mode 2
Project Characteristics, to Start:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>💡</td>
<td>Is an Island Project</td>
</tr>
<tr>
<td>🔄️</td>
<td>Can Be Completed Fast</td>
</tr>
<tr>
<td>💲</td>
<td>Creates External Value</td>
</tr>
<tr>
<td>🤝</td>
<td>Has Willing Business Partner</td>
</tr>
<tr>
<td>🤔</td>
<td>Has Uncertain Requirements, Low Complexity</td>
</tr>
<tr>
<td>🧪</td>
<td>Is a System of Innovation</td>
</tr>
</tbody>
</table>
Organizational Structure A — Mode 2 Reports to the CIO

- **Mode 1 Plan and Build**
- **Mode 2 Plan and Build**
- **I&O**
- **Enterprise Architecture**

- **Add Organizational Distance at First**
- **DevOps**
- **Mode 2 Fast Track: DevOps, Automation and Continuous Delivery**
Organizational Structure B — Mode 2 Plan and Build Reports Outside IT

CEO

CIO

Mode 1 Plan and Build

I&O

Chief Digital Officer (CDO)

Mode 2 Plan and Build

DevOps
Key Issues

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Moving to Enterprise Bimodal

Project Bimodal

- Agile
- Innovation Lab
- Iterative Collaboration
- Isolated Small Vendors

Enterprise Bimodal

Integrated:
- Agile, Iterative Methods
- Highly Collaborative Cross-Business
- CFO and CEO on Board
- Flexible Funding
- Adaptive Sourcing
- Scaling Process

Typical Second Mode Starting Point
Point Beyond Which Enterprise Change Significant
Progress to Enterprise Bimodal — Mode 2 Dominates

- A Committed Executive Team That Accepts More Operational Ambiguity
- A Well-Architected Digital Core on Which to Innovate
- Top Digital Talent
- Synching Between Modes

Enterprise Bimodal

Bimodal Critical Success Factors

Architecture

Syncing Modes

Funding

I&O

Innovation Mgmt.

Adaptive Sourcing
# Characteristics of Digital Business Outcomes

<table>
<thead>
<tr>
<th>Outcome Characteristic</th>
<th>Architecture Implication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human-centric</td>
<td>Adaptive, context-aware</td>
</tr>
<tr>
<td>Transient (speed of market opportunity)</td>
<td>Agile, modular, flexible</td>
</tr>
<tr>
<td>Ad hoc (rarely the same)</td>
<td>Configurable, context-aware</td>
</tr>
<tr>
<td>Maybe unknown (context moving fast, difficult to project)</td>
<td>Design for openness, open APIs, composite, software defined</td>
</tr>
<tr>
<td>Blur of physical and digital</td>
<td>Interoperation, stratification of logic, more function &quot;at the edge&quot;</td>
</tr>
<tr>
<td>Blur of industry boundaries</td>
<td>Interoperation, Integration</td>
</tr>
</tbody>
</table>
Beware: Don't Just Push the Bottleneck Downstream to Infrastructure and Operations

Key Capabilities to Avoid Becoming the I&O Bottleneck:

- DevOps
- Automation
- Continuous Delivery
Creating New Walls of Confusion

The Elite Organization (may need initially):

Development  DevOps  Operations

The "Do It All" Organization:

Development + DevOps  No Operations

Adapted from: http://www.slideshare.net/matthewskelton/devops-patterns-team-topologies
Traps to Avoid

1. Disconnection
2. Spiralling technical debt
3. Poor communications
4. Lack of equity
5. An unrenovated core
Bimodal Is Built on Trust

Trust enables autonomy
Autonomy enables team happiness
Team happiness enables leader scaling

Source: https://www.flickr.com/photos/joi/2941559903; Text adapted from: Laura Thomson (Minimum Viable Bureaucracy)
Bimodal IT
What Are the Next Steps?

**UNCONSCIOUS COMPETENCE**

**Embed in Culture:**
- Establish shared values
- Ensure equity
- Build the processes and protocols to synchronize the two
- Reward team oriented, goal-driven behaviors

**Create Awareness and Appetite:**
- **Socialize** the concepts of bimodal with the executive team
- **Challenge** the executive team – how will it respond to the transformation it faces
- **Get agreement** – what does bimodal mean to you, how to proceed

**CONSCIOUS COMPETENCE**

**Build Capabilities:**
- Define your filters
- Pick a project
- Pick the team
- Define the process, methods, tools.
- **START**
- Capture learning, iterate
- Protect the team and its funding
- Engage sourcing and procurement
- Define an innovation management process.
- Manage technical debt
- Iterate, iterate, iterate
By 2017, 75% of IT organizations will have a bimodal capability. Half will make a mess.

Don’t be in the wrong half.
Recommended Gartner Research

- **Bimodal IT: How to Be Digitally Agile Without Making a Mess**
  Mary Mesaglio and Simon Mingay (G00268866)

- **Best Practices for Implementing Automation in Data Centers With Cloud and Virtualized Environments**
  Ronni J. Colville and Milind Govekar (G00255255)

- **Bimodal IT and Adaptive Sourcing Are Critical to Digital Business Success**
  Claudio Da Rold and Others (G00265879)

- **Web-Scale IT Empowers Teams to Create a Culture of Innovation**
  John Rivard (G00251066)

For more information, stop by Gartner Research Zone.