Transformative Technology That Drives Business
Bobby Cameron, VP & Principal Analyst, Serving CIOs

October 25, 2016
We work with business and technology leaders to develop customer-obsessed strategies that drive growth.
Agenda

› Customer-obsessed digital transformation is business transformation

› Technology and tech management is restructuring

› Tech purchasing is transforming
Businesses operate in a new reality

Technology is dramatically transforming business — catalyzing new customer expectations and redefining the work required to meet them

› Digitally-empowered customers, partners, and employees demand new value

› To engage with them digitally, firms are becoming customer-obsessed digital businesses

› The technology management strategy to win, serve, and retain customers: Business Technology (BT)
“Do you think your business has been or will be disrupted by digital technologies in the next 12 months?”

Responses on a scale of 1 [not disrupted] to 5 [massively disrupted]

Base: 415 executives in companies with 250 or more employees
(respondents may be counted in multiple industry groups; <30 not included)

Source: Forrester/Odgers Berndtson Q3 2015 Global Digital Business Online Survey

In Forrester’s “Unleash Your Digital Predator” report
... digital is reaching beyond web sites and mobile apps ...
as digital businesses shift from linear product/service value chains . . .

. . . to customers’ value ecosystems . . .

Source: The December 7, 2015 “The Digital Business Imperative”
... and digital business’s complexities require complex customer-obsessed strategies

Source: Ralph Stacey, Agreement And Certainty Matrix (Appelo, 2012) and Forrester
Agenda

› Customer-obsessed digital transformation is business transformation

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BT tops 55% of new tech spend and 27% of all tech spend in 2016 . . .

**Business technology:**
The technology, systems and processes to win, serve, and retain customers

**Information technology:**
The technology, systems and processes to automate and transform operational processes

<table>
<thead>
<tr>
<th>Percentage change</th>
<th>New project spending</th>
<th>Tech MOOSE spending</th>
<th>2016 Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business technology</td>
<td>3.4%</td>
<td>8.9%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Information technology</td>
<td>0.0%</td>
<td>-0.2%</td>
<td>-0.1%</td>
</tr>
<tr>
<td>Total tech purchases</td>
<td>1.4%</td>
<td>1.3%</td>
<td>1.4%</td>
</tr>
</tbody>
</table>

Source: September, 2016 “The Midyear Global Tech Market Outlook For 2016 To 2017
... and customer-led technology — business technology (BT) — is driving growth in tech spend.

Global business and government total spending on tech goods and services (US$ billions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Business technology</th>
<th>Information technology</th>
<th>% change from prior year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>$2,808</td>
<td>$570</td>
<td>12.6%</td>
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<tr>
<td>2012</td>
<td>$2,881</td>
<td>$615</td>
<td>7.9%</td>
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<tr>
<td>2013</td>
<td>$2,909</td>
<td>$659</td>
<td>7.2%</td>
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<tr>
<td>2014</td>
<td>$2,977</td>
<td>$715</td>
<td>8.6%</td>
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<tr>
<td>2015</td>
<td>$2,845</td>
<td>$722</td>
<td>0.9%</td>
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<tr>
<td>2016*</td>
<td>$2,885</td>
<td>$765</td>
<td>6.0%</td>
</tr>
<tr>
<td>2017*</td>
<td>$2,998</td>
<td>$820</td>
<td>7.1%</td>
</tr>
</tbody>
</table>

Source: September, 2016 “The Midyear Global Tech Market Outlook For 2016 To 2017
Digital investments are moving beyond systems of record — for both BT and IT

**Systems of engagement**
empower customers, partners, and employees with context-rich apps and smart products to help them decide and act in their moments of need.

**Systems of automation**
are technologies that connect the virtual and physical worlds — intelligently managing physical products, networks, and infrastructure.

**Systems of insight** are the business discipline and technology to harness insights and consistently turn data into action.

**Systems of record** run operational processes — executing transactions, aggregating and moving data, and performing analytics.

Digital changes the focus and value of the technology stack

January 2014 “Software Must Enrich Your Brand”
Firms are adopting key tech as end-to-end, **digital-process** solutions — in three phases

### Dawning — digital experience
- Ad-hoc point solutions
- New inventions and experimentation
- Individual organizations
- Little tech management involvement

### Awareness — end-to-end digital processes
- Growing end-to-end solutions
- A mix of experimentation and innovation
- A mix of individual and ecosystem-wide organizations
- Increasing tech management involvement

### Acceptance — digital businesses
- End-to-end solutions
- Innovating on existing inventions
- Ecosystem-wide operating models
- Significant tech management involvement

The move to end-to-end manifests in ten tech trends between 2016 and 2018:

1. Smart connected world
2. Systems of insight
3. APIs as strategy
4. Digital CX limitations
5. Security and risk rethink
6. Hyperconnected hyperadopters
7. BT acceleration
8. Infrastructure snowballs
9. Software as part of the brand
10. Workforce technology
5 technologies will start to change the world within 5 years.

Source: September 12, 2016 “The Top Emerging Technologies To Watch: 2017 To 2021”
Cloud cannibalizes the software market

Total application and middleware product revenue by type, excluding vendor-provided services
(US$ billions)

- SaaS and hosted single-instance subscription revenues
- Maintenance revenues
- License revenues

<table>
<thead>
<tr>
<th>Year</th>
<th>SaaS and Hosted</th>
<th>Maintenance</th>
<th>License</th>
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</thead>
<tbody>
<tr>
<td>2011</td>
<td>$343</td>
<td>$118</td>
<td>$148</td>
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<tr>
<td>2012</td>
<td>$360</td>
<td>$121</td>
<td>$152</td>
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<tr>
<td>2013</td>
<td>$382</td>
<td>$124</td>
<td>$158</td>
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<tr>
<td>2014</td>
<td>$399</td>
<td>$124</td>
<td>$158</td>
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<tr>
<td>2015</td>
<td>$396</td>
<td>$118</td>
<td>$153</td>
</tr>
<tr>
<td>2016*</td>
<td>$423</td>
<td>$120</td>
<td>$157</td>
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<tr>
<td>2017*</td>
<td>$463</td>
<td>$123</td>
<td>$161</td>
</tr>
</tbody>
</table>

*Forrester forecast

Source: September, 2016 "The Midyear Global Tech Market Outlook For 2016 To 2017"
Digital service providers are creating next-generation services

<table>
<thead>
<tr>
<th></th>
<th>Deep domain expertise to engage line-of-business executives and drive business innovation</th>
<th>Reusable, configurable cloud-based software solutions to accelerate time-to-market</th>
<th>Business process-centric analytics to continuously improve service delivery</th>
<th>Flexible engagement models that align with business outcomes</th>
</tr>
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<tbody>
<tr>
<td>Consulting firms</td>
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<td>Systems integrators</td>
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<td>Outsourcers</td>
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<td>Startups</td>
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<td>Digital agencies</td>
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</table>

Examples

- BearingPoint’s HyperCube and Deloitte’s Caritat bring advanced analytics capabilities.
- BlueWolf and Appirio build solutions atop cloud platforms like salesforce.com’s.
- Companies like Tech Mahindra and Infosys are ramping up their software programs and investing in analytics capabilities, such as Opera in the case of Wipro.
- Companies like VMob provide next-generation services that currently focus primarily on customer acquisition and loyalty processes. They aim to expand coverage to adjacent customer life-cycle phases and align engagements with their clients’ business outcomes.
- Digital agencies bring marketing expertise as well as technology know-how.

Source: July 15, 2014 “Next Generation Services Offer A New Path To Digital Transformation”
The market for digital transformation services is exploding.

Source: February 26, 2016 “Digital Turns Technology Services On Its Head”
Blockchain is still in early stages

<table>
<thead>
<tr>
<th>Phase 1: Irrational exuberance</th>
<th>Phase 2: Rational assessment</th>
<th>Phase 3: Practical deployment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lots of small companies, mostly startups, with a wide variety of offerings</td>
<td>Number of startups consolidating; remaining offerings will be more technically solid.</td>
<td>Wider deployment could begin for systems that are technically sound and stable at scale, and for which:</td>
</tr>
<tr>
<td>Large IT firms, systems integrators, and consulting firms launch blockchain practices or services.</td>
<td>Partner ecosystems and consortia continue to evolve as individual firms recognize their own strengths and gaps.</td>
<td>• Appropriate supporting processes have been established.</td>
</tr>
<tr>
<td>Launch of R3CEV and Linux Foundation Hyperledger Project</td>
<td>Use cases crystallize that are good candidates for deployment at scale and wider rollout. Prep work begins.</td>
<td>• Regulatory and legal frameworks are in place.</td>
</tr>
<tr>
<td>PoCs and enterprise-internal R&amp;D projects and small-scale launches</td>
<td>Small and experimental deployments continue.</td>
<td>• Workable business models have been developed.</td>
</tr>
</tbody>
</table>

2015

Hands-on work with the technology clarifies the issues and challenges that need to be addressed. Those hoping for quick wins and large-scale deployments will be disappointed.

Unless all major players in their respective industry sectors agree on a standard or ways of achieving interoperability, the required network effect will not be achieved.

Source: April 20, 2016 “Q&A: Forrester’s Top Five Questions About Blockchain”

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IoT adoption is increasing

“What are your firm’s plans to adopt M2M/Internet of Things solutions or applications?”

Overall
- Using: 19%
- Planning: 28%
- Interested: 31%
- Total: 78%

Enterprise*
- Using: 23%
- Planning: 29%
- Interested: 30%
- Total: 82%

SMB†
- Using: 14%
- Planning: 26%
- Interested: 33%
- Total: 73%

Base: 3,337 global telecommunications decision-makers (20+ employees)
*Base: 1,755 global telecommunications decision-makers (1,000+ employees)
†Base: 1,582 global telecommunications decision-makers (20-999 employees)
(percentages have been rounded)


Source: January 14, 2016 “The Internet Of Things Heat Map, 2016”
IoT opportunities vary by industry and application

<table>
<thead>
<tr>
<th>Industry</th>
<th>Security &amp; surveillance</th>
<th>Supply chain mgmt</th>
<th>Inventory &amp; warehouse</th>
<th>Customer order/delivery tracking</th>
<th>Facility management</th>
<th>Industrial asset mgmt</th>
<th>Smart products</th>
<th>Energy mgmt</th>
<th>Fleet mgmt</th>
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<tbody>
<tr>
<td>Primary manufacturing</td>
<td>Cool</td>
<td>Warm</td>
<td>Hot</td>
<td>Hotter</td>
<td>Hottest</td>
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<td>High-tech production +</td>
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<td>Industrial production +</td>
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<td>Transportation and logistics</td>
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<td>Utilities + telecom</td>
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<td>CPG + pharma</td>
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<td>Chemical + oil and gas services</td>
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<td>Financial services +</td>
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<td>Government + education services</td>
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<td>and social services</td>
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Source: January 14, 2016 “The Internet Of Things Heat Map, 2016”
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Global tech purchase by product, 2016 to 2017

Global business and government purchases of tech goods and services (US$ billions)

% change from prior year

- **Computer equipment**
  - 2011: 1.5%
  - 2012: 1.1%
  - 2013: 0.4%
  - 2014: 1.2%
  - 2015: -8.1%
  - 2016*: -0.4%
  - 2017*: 2.6%

- **Communications equipment**
  - 2011: 7.1%
  - 2012: 1.7%
  - 2013: -0.6%
  - 2014: 0.7%
  - 2015: -4.8%
  - 2016*: -1.7%
  - 2017*: 2.3%

- **Software**
  - 2011: 9.7%
  - 2012: 3.5%
  - 2013: 1.3%
  - 2014: 3.5%
  - 2015: -2.6%
  - 2016*: 2.7%
  - 2017*: 5.6%

- **Tech consulting and systems integration services**
  - 2011: 9.9%
  - 2012: 3.1%
  - 2013: 3.2%
  - 2014: 4.1%
  - 2015: -4.1%
  - 2016*: 2.6%
  - 2017*: 4.9%

- **Tech outsourcing and hardware maintenance**
  - 2011: 9.0%
  - 2012: 4.0%
  - 2013: 2.2%
  - 2014: 2.1%
  - 2015: -2.8%
  - 2016*: 3.7%
  - 2017*: 4.2%

- **Telecommunications**
  - 2011: 7.0%
  - 2012: 1.7%
  - 2013: -0.6%
  - 2014: 1.5%
  - 2015: -5.2%
  - 2016*: 0.1%
  - 2017*: 1.2%

**Total tech purchases**

- 2011: 7.5%
- 2012: 2.6%
- 2013: 1.0%
- 2014: 2.3%
- 2015: -4.4%
- 2016*: 1.4%
- 2017*: 3.6%

Source: September, 2016 "The Midyear Global Tech Market Outlook For 2016 To 2017"
The technology decision life cycle from the tech buyer’s perspective

February 2014 “Understanding Shifting Technology Acquisition Patterns”
Business leaders take a bigger role in tech solutions’ decision life cycles

Five tech solution life-cycle models

1. Business owns all steps
   - Biz
   - Skip
   - CIO

2. Business starts, CIO runs
   - Biz
   - Skip
   - CIO

3. Business and CIO together
   - Biz
   - CIO

4. Classic IT projects for business
   - Biz
   - CIO

5. CIO owns all steps for IT projects
   - CIO
   - Biz

February 2014 “Understanding Shifting Technology Acquisition Patterns”
Shares of new US tech purchases by type of tech lifecycle decisions

Source: February 2014 “Understanding Shifting Technology Acquisition Patterns”
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Thank you

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