DIGITAL FRAGMENTATION

ADAPT TO SUCCEED IN A FRAGMENTED WORLD
Wake Up to the New Complexity

For decades, digital globalization—powered by free-flowing data—gathered pace. But today’s business leaders are waking up to a far more complex and fragmented reality.

Trends toward fragmentation—caused by increasing barriers to globalization—have been building for some time. In the world of trade, for example, the number of restrictive measures adopted by G20 members since the global financial crisis and still in force almost quadrupled, from 324 in 2010 to 1,263 in 2016. Global foreign direct investment inflows remain below their 2007 pre-crisis peak, and the number of countries with data privacy laws more than tripled in the last two decades (from 34 in 1995 to 109 in 2015). These trends have now converged to present a transformed operating environment for global business.

Text analyses measuring media sentiment across 45,000 articles in major global newspapers, 2006 to 2016

Global media opinion has shifted dramatically for terms related to...


...Globalization

...Nationalism

...Multinationals

Positive sentiment

Negative sentiment

Global financial crisis

DIGITAL JEOPARDY
MANAGING THE UPS AND DOWNS OF BEING DIGITAL

While many in the digital world are still talking about a new era of seamless data flows, the reality is more complex and disruptive.

We call this new reality digital fragmentation. It is characterized by increasing obstructions to the flows of data, IT products, IT services and IT talent that jeopardize the journey toward global digital business models. An Accenture survey of more than 400 global CIOs and CTOs reveals that more than 80 percent believe their IT strategies and systems are vulnerable to these trends, and they see new digital business models as one of the most exposed areas.
How vulnerable are your company’s IT strategies and systems to increasing barriers to globalization?
Digital capabilities are compromised

Increasing barriers to globalization will compromise our ability to use or provide cloud-based services.

Increasing barriers to globalization will compromise our ability to use or provide data and analytics services across national markets.

Increasing barriers to globalization will compromise our ability to operate effectively across different national IT standards.
Our survey of CIOs and CTOs reveals that the impact of fragmentation on multinationals goes beyond risk and compliance issues. The imminent threat is to growth and innovation—today, more than half of CIOs and CTOs we surveyed see increasing barriers to globalization as a problem for their companies—and this increases to 88 percent in three years’ time.

Our research reveals just how seriously fragmentation is being taken in boardrooms worldwide. So far, the tangible business implications have not received the attention they deserve across the broader business and analyst community, let alone among business commentators.
A fragmented global context has three implications:
GROWTH AND INNOVATION

FRAGMENTATION DISRUPTS GROWTH AND INNOVATION
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FRAGMENTATION DISRUPTS GROWTH AND INNOVATION

Fragmentation is not just a matter of limiting global IT operations. Business and IT leaders see its restrictions and risks affecting their ability to generate growth and innovation, too. Sales, marketing, and research and development all scored high as business functions vulnerable to obstructed global flows.

And our research highlights that fragmentation compromises the ability of organizations to effectively use digital technologies—like big data analytics, cloud services and the Internet of Things—that all rely on rapid, unobstructed flows of data among people and devices and across borders. This obstacle directly impacts broader expectations around growth, innovation and digital progress.

In particular, concerns about digital transformation plans are running high. Survey respondents put several capabilities that are central to digital growth and innovation—such as customer analysis and tracking systems—at the top of their list of vulnerable areas of digital transformation.

Such findings should come as sobering news to business leaders who see policies on trade, investment, immigration and data purely as risks to cost and compliance, overlooking their impact on digital growth prospects.
STRATEGY AND OPERATIONS

FRAGMENTATION DEMANDS STRATEGIC AND OPERATIONAL REALIGNMENT
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Executives are worried about the strategic and operational impact of digital fragmentation. About three-fourths of those surveyed say that over the next three years, it is likely that their companies will exit a market, or delay or abandon market-entry plans, as a result of this new context.

These professionals expect that the fallout from this more fragmented operating environment will force them to make fundamental structural changes in key strategic and operational plans across a broad range of activities and relationships—including global IT architectures (60 percent of respondents), physical IT location strategy (52 percent) and cyber security strategy and capabilities (51 percent).

And companies see bigger changes on the horizon. Survey respondents expect the forces driving digital fragmentation to intensify over the next three years, requiring them to further reconsider their global business processes and talent strategies.
How likely is it that your company will exit a market, delay market-entry plans or abandon market-entry plans as a result of increased barriers to globalization?

- Now: 8%
- Over the next 3 years: 74%
Firms expect fundamental structural changes

Companies are already rethinking key strategic and operational plans for digital regrowth.

Increasing barriers to globalization will force my company to rethink...

- its global IT architectures: 60% agree, 19% disagree
- its cybersecurity strategy and capabilities: 51% agree, 21% disagree
- relationships with local and global IT suppliers: 50% agree, 12% disagree
- its physical IT location strategy: 52% agree, 18% disagree
- its geographic strategy for IT talent: 50% agree, 22% disagree
- global sourcing alternatives for IT products and services: 42% agree, 15% disagree
Trends obstructing global flows are expected to intensify

CIOs and CTOs expect increasing challenges to conducting business across borders over the next three years.

- **Believe national governments will strengthen their control over data within their borders:**
  - 56% Agree
  - 18% Disagree

- **Say firms will have to reconsider global business processes that rely on the free flow of data and technology:**
  - 58% Agree
  - 19% Disagree

- **Expect increasing government barriers to constrain the free flow of data across borders:**
  - 51% Agree
  - 12% Disagree

- **Believe increasing barriers to globalization will make it harder for firms to fill critical IT positions:**
  - 55% Agree
  - 18% Disagree
COST AND COMPLEXITY

FRAGMENTATION CAN GENERATE MULTIPLE OPERATIONAL CHALLENGES
More than 90 percent of respondents expect IT costs to rise over the next three years due to increasing barriers to globalization; more than two-thirds are feeling the bite now. CIOs and CTOs expect the sourcing of inputs like IT talent to be the most important driver of cost increases. It will also be costly to meet requirements to duplicate or multiply IT infrastructure, like data centers, and to comply with multiple national IT standards.

Fragmentation also makes the CIO’s life more difficult, adding complexity and risk to global IT operations. Take the inevitable increase in bureaucracy. CIOs and CTOs need to remain informed about new and upcoming legislation that will affect their global IT strategy, to stay on top of compliance paperwork in several geographies, and to keep partners, suppliers and customers up to date on what could be a host of new requirements and regulations.
The fallout will be a more expensive business
Key IT cost drivers include sourcing, duplication of infrastructure and compliance with national IT standards

Key drivers of IT cost increases, due to increasing barriers to globalization

- Cost of sourcing inputs such as IT talent: 50%
- Requirements to duplicate or multiply IT infrastructure (e.g. data centers): 47%
- Compliance with multiple national IT standards: 47%
- Cost of IT product or service development: 44%
- Reduced competition in supplier market (e.g. equipment, infrastructure, etc.): 40%
- Compliance with regulatory requirements: 21%
The complexity of international operations will multiply

Obstructions to global flows add complexity and risk to global operations

- Security measures to protect sensitive data stored in a single location
  - e.g. data localization precluding sharding, whereby data is split and stored in different locations for security

- Stripping and filtering data pertaining to individuals
  - e.g. separating a truck driver’s identity from delivery records

- Checking compliance of data in all internal cross-border communication
  - e.g. to ensure compliance at all organizational levels

- Checking compliance of data in cross-border communication with partners
  - e.g. suppliers, contractors, collaborators and customers in other jurisdictions
The complexity of international operations will multiply

Obstructions to global flows add complexity and risk to global operations

**Finding appropriate talent in more locations**

- e.g. due to localization rules, such as maintaining redundant data centers

**Finding appropriate IT vendors in more locations**

- e.g. due to localization rules, such as requirements to work with local partners

**Additional systems integration work**

- e.g. due to additional data centers in multiple locations

**Bureaucracy**

- e.g. staying informed about new and upcoming legislation and compliance paperwork, and communicating up-to-date requirements to partners, suppliers and customers
Digital transformation will be put at risk

The most vulnerable functions and capabilities place digital models and growth potential at risk

<table>
<thead>
<tr>
<th>Most vulnerable business functions</th>
<th>Most vulnerable areas of digital transformation</th>
</tr>
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<tbody>
<tr>
<td>Enterprise technology</td>
<td>Customer analysis and tracking systems (53%)</td>
</tr>
<tr>
<td>R&amp;D and innovation</td>
<td>New digital business models (45%)</td>
</tr>
<tr>
<td>Sales and marketing</td>
<td>Personalized and customized services (38%)</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Product distribution and logistics (36%)</td>
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<tr>
<td>Distribution and logistics</td>
<td>Digital-enabled products and services (34%)</td>
</tr>
<tr>
<td>Procurement, sourcing and supply chain</td>
<td>Back-office and supply chain integration (33%)</td>
</tr>
<tr>
<td>Finance</td>
<td>Integrated omnichannel integration (20%)</td>
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<tr>
<td>Human resources</td>
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<tr>
<td>Risk and compliance</td>
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</table>

Key vulnerabilities affect digital models and growth potential
WHERE NEXT?
RECALIBRATING YOUR DIGITAL DIRECTION
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The boardroom is already alert to the new landscape. In fact, increasing obstacles to globalization are a factor in the strategic planning of 80 percent of the companies we surveyed. That is a positive development, because digital fragmentation affects every aspect of the business from branding to IT infrastructure to talent. But there is a strong need now to convert planning into action.

Four steps can make that happen:

- **Add a new lens to strategic planning**
- **Map and de-risk data flows**
- **Build local advantage**
- **Use technology as part of the solution**
WHERE NEXT?
RECALIBRATING YOUR DIGITAL DIRECTION

ADD A NEW LENS TO STRATEGIC PLANNING

Boards must acknowledge the impact of an increasingly fragmented world by dedicating time to discussing its implications across the business. More than one-fifth of those we surveyed already dedicate boardroom strategic planning sessions exclusively to the impact of increasing national barriers. Executives should evaluate whether existing strategic planning techniques—for risk assessment, for example, or contingency planning—can be tailored to deal with the impact. Already, 69 percent of companies are planning for increased barriers through scenario planning and stress-testing exercises.

Executives must review or reassess all relevant issues. Is the company’s geographic footprint right for the evolving global terrain? Should investments be reallocated differently across markets? For example, key global functions and IT activities may need to be redistributed across different jurisdictions. Redundancy may need to be built into infrastructure plans, such as the global data center architecture. Just over one-half of the business leaders we surveyed are reorganizing global IT architectures and governance structures. Decamping from less-hospitable markets and relocating IT investments in more open ones is an option being pursued by 42 percent of those surveyed.
Increasing barriers to globalization are now firmly a board-level concern

Boards of 80 percent of the firms we surveyed are already discussing increasing barriers to globalization, and many are already conducting strategic planning activities dedicated exclusively to this trend.

<table>
<thead>
<tr>
<th>Strategic planning activities dedicated exclusively to increasing barriers of globalization</th>
<th>Strategic planning activities incorporating the impact of increasing barriers of globalization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Third-party audits/reviews 25%</td>
<td>Board-level discussions 58%</td>
</tr>
<tr>
<td>Scenario analysis/stress testing 24%</td>
<td>Scenario analysis/stress testing 45%</td>
</tr>
<tr>
<td>Risk assessment systems 23%</td>
<td>Monitoring geopolitical and regulatory trends 45%</td>
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<td>Board-level discussions 22%</td>
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</tbody>
</table>

Decisions must also be made about where to locate cybersecurity capabilities and where to improve the organization’s preparedness to respond to new legislation—and its ability to influence that legislation. And all these plans must allow enough flexibility to adapt to an unpredictable and evolving environment. Agility will be crucial.
WHERE NEXT?
RECALIBRATING YOUR DIGITAL DIRECTION

MAP AND DE-RISK DATA FLOWS

The flows of information needed for key management decisions and business operations—particularly where digital technology is at the core of the business offering—must be protected. Organizations must assess how data regulations such as national cross-border restrictions will affect their business model and growth plans.

From a data storage perspective, organizations need to re-evaluate where and how different types of data are maintained, which may demand trade-offs between security and ease of accessibility and use. This includes risk assessments of where data flows that are necessary for key business activities may be interrupted, or where critical data structures may be compromised. Ultimately, it is an exercise in predicting and preventing disruption.
BUILD LOCAL ADVANTAGE

Digital fragmentation places new urgency on multinationals to “be genuinely local” in all their markets. The CIOs and CTOs we surveyed are under pressure to localize their IT strategies, processes and infrastructure.

Contrary to the rhetoric of many digital evangelists, national borders do matter, and increasingly so. Key steps to respond to this digital reality are to invest in local talent development. Also, cultivate key relationships with local technology partners as well as policy makers. Only about half of the companies we surveyed are making such investments so far.

Developing local talent can take time. Less than half of respondents are working with governments today on talent development to help shape local conditions. Many organizations are finding other ways to deal with diminished global labor mobility. For example, two-thirds of respondents say they are increasing investments in automation to offset labor restrictions.
USE TECHNOLOGY AS PART OF THE SOLUTION

New and emerging technologies raise further complications in a fragmented operating environment, but also offer new ways to succeed in that environment. A case in point is 3D printing. Organizations must consider varying national rules about how data can be stored, used or moved as it journeys between the manufacturing location and the designers, customers or other parts of the supply chain. Yet, the same technology opens entirely new and flexible options to organize global manufacturing footprints. Similarly, companies will need to rethink their optimal cloud structure or degree of cloud centralization. These decisions will vary according to how an organization’s value chain and customers operate around the world.

Companies should also explore how artificial intelligence might help address restrictions on talent migration (via automation or augmentation) or even help corporate administrators to navigate the complex and evolving regulatory rules and legislation in relevant markets. Blockchain is another technology that may offer solutions to a more balkanized technology environment, by providing more secure, decentralized and distributed systems for data protection and cyber security risks.
WHERE NEXT?
FORGING A PATH THROUGH FRAGMENTATION

After years of following a seemingly predictable digital trajectory, the next phase of digital progress involves a degree of complexity that must be navigated in close concert with other stakeholders. On this shared journey, business leaders who actively collaborate with one another and with key partners such as policy makers and regulators can help shape the new digital future, rather than responding to its whims.

As one of the people we interviewed confirmed, the most effective way forward is for business leaders to sit down with policy makers in a constructive manner to shape how their sector is developing, taking into account how it affects customers and the economy as a whole. Digital progress will be a complex journey, not a simple inevitability. For leaders to successfully forge a path on this journey, their businesses must act with foresight and flexibility.
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402 CIOS AND CTOS SURVEYED

IN-DEPTH INTERVIEWS
with experts on policy, economy, and digital business

DATA AND TREND ANALYSIS
including Web scraping, data analytics, trend analysis and policy research

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