Forrester Consulting Thought Leadership Spotlight
Commissioned By Infosys and Software AG

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Leading Your Digital Transformation With An API-Optimized Strategy

Digital transformation initiatives have been pivotal for organizations to address evolving customer needs. Leaders need to ensure their organizations' technology stacks and business mindsets are adaptive and agile for change to enable effective customer engagement and growth. Agile IT in this sense means evolving culture to align business and IT interests, enabling agile architectures and adopting new processes with automation. Application and development fabrics need to be primed for agility and scale as well.

Application programming interfaces (APIs) and microservices are pivotal in providing companies the agility they need to adapt to new digital demands. In this study, we explore the digital transformation priorities and challenges that organizations focus on and the extent to which an API-led approach is truly optimized for scale.

KEY FINDINGS

Forrester's Business Technographics® data reveal the following key findings:

› **Organizations are consistently evolving in their digital transformation strategy.** Forrester research highlights that 65% of respondents reported that their organizations are adapting to a state of digital transformation. Growing customer digital and mobile needs and expectations primarily drive digital transformation.

› **Transformation needs to be agile for a hybrid-cloud approach.** Almost 76% of survey respondents considered their organizations' cloud approach as hybrid, highlighting the need for IT organizations to consider integrated platform capabilities that can operate across legacy and cloud environments.

› **Adapting APIs to enable business transformation is the need of the hour.** Organizations recognize the advantage of APIs as an accelerator of business capabilities, alongside the rapid execution and deployment that is exercised through microservices.

› **IT leaders need a coherent strategy to accelerate API capabilities.** To address the complexity of structuring an adequate API design, organizations need to adopt a platform-based approach that remains agile alongside hybrid cloud transformation.

Infosys and Software AG commissioned Forrester Consulting to explore the role and approach to APIs in addressing the digital transformation by leveraging Forrester Research and Business Technographics® data.

The data and insights in this study are based on existing research findings from Forrester's research data from an average of 2,676 global business and IT decision-makers.

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Agile IT Is At The Cornerstone of Managing Customer Needs

In an ever-evolving landscape of customer touchpoints and needs, organizations need their IT to remain adaptive so they don't get left behind. The prioritization of agile IT is clear among decision-makers; however, accelerating the scale and scope of integrated, cloud-centric environments is imperative for success.

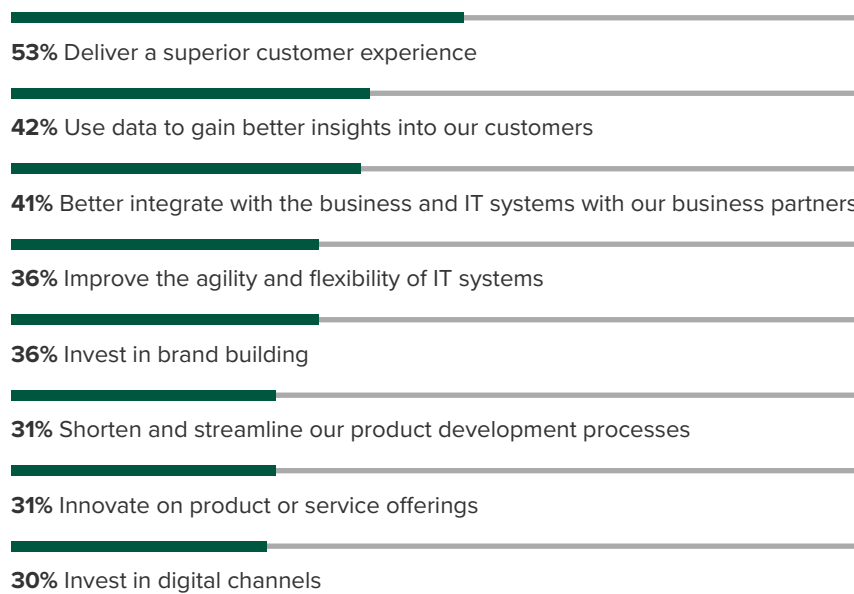Forrester Technographics data highlights this trend and uncovers the following:

› **Businesses recognize they need to adapt to changing customer needs.** Over 53% of respondents reported that their organizations considered improving the experience of their customers a priority over the next 12 months to help them differentiate in the market (see Figure 1). Given the rising expectations and demands of customers, according to 38% of decision-makers this requires companies to differentiate their capabilities in the market and improve their ability to innovate.

› **Digital transformation is key to enabling innovation for customer engagement.** To enable the speed and flexibility required in their customer-facing capabilities, 65% of respondents considered their organizations in a constant state of digital transformation. Within this, 40% of decision-makers considered accelerating their shift to digital business capabilities as a high priority.

› **Agility is a key driver to digital transformation initiatives.** One-third of decision-makers (33%) reported improving existing IT capabilities to promote agility and innovation as a key driver to their organizations' digital transformation priorities. Adopting technology capabilities that enable this agility becomes an important focus.

› **IT transformation needs to consider a hybrid cloud environment in their technology roadmap.** Cloud adoption has been a key digital transformation initiative for companies to enable the flexibility and scale required. Of the decision-makers prioritizing digital transformation, 60% believed shifting applications to the cloud was one of their organizations' most important transformation priorities.[1] Nonetheless, companies still have to acknowledge the transition phase of their cloud journey. A majority (76%) of IT leaders still considered their organizations in a hybrid cloud environment.
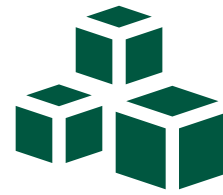
65% of respondents reported their organizations are consistently in a state of digital transformation.

Figure 1

"What are the key actions your firm is taking to achieve your objective of improving differentiation in the market? (Select up to 5.)**"**

53% Deliver a superior customer experience

42% Use data to gain better insights into our customers

41% Better integrate with the business and IT systems with our business partners

36% Improve the agility and flexibility of IT systems

36% Invest in brand building

31% Shorten and streamline our product development processes

31% Innovate on product or service offerings

30% Invest in digital channels

Base: 21,047 respondents in Australia, Canada, China, France, Germany, India, the UK, and the US from companies with two or more employees
Note: Showing top 8
Source: Forrester Analytics Global Business Technographics ® Priorities And Journey Survey, 2019

An API-Led Approach Is A Key Enabler In Your Digital Journey

While cloud prioritization will enable an environment to support agile development, delivering the mechanics for agility and business value requires an effective API and microservices strategy. It is only when cloud adoption and API and microservice capabilities go hand-in-hand that true agility and business transformation can occur.

Forrester Research determines that APIs and microservices adoption is coming to the fore, especially among digital leaders:

› **API capabilities are clearly aligned to broader business objectives.** To consistently improve and adapt to the new needs of customer experiences, organizations must streamline their business operations and enable new business models across markets and initiatives. APIs allow organizations to plug into these business capabilities adequately, providing the enterprise the platform to expand its capabilities into new ecosystems.

› **Digitally inclined leaders are adapting to an API-first approach.** Out of the respondents surveyed, 47% reported that their organizations currently implement APIs with a further 18% planning to do so in the next 12 months (see Figure 2). This adoption is more advance with companies already in their digital journey, as 68% of decision-makers who have prioritized a shift towards digital business have implemented API capabilities.

Figure 2

Firms Use APIs In Their IT Architecture

- Currently using
- Planning to use
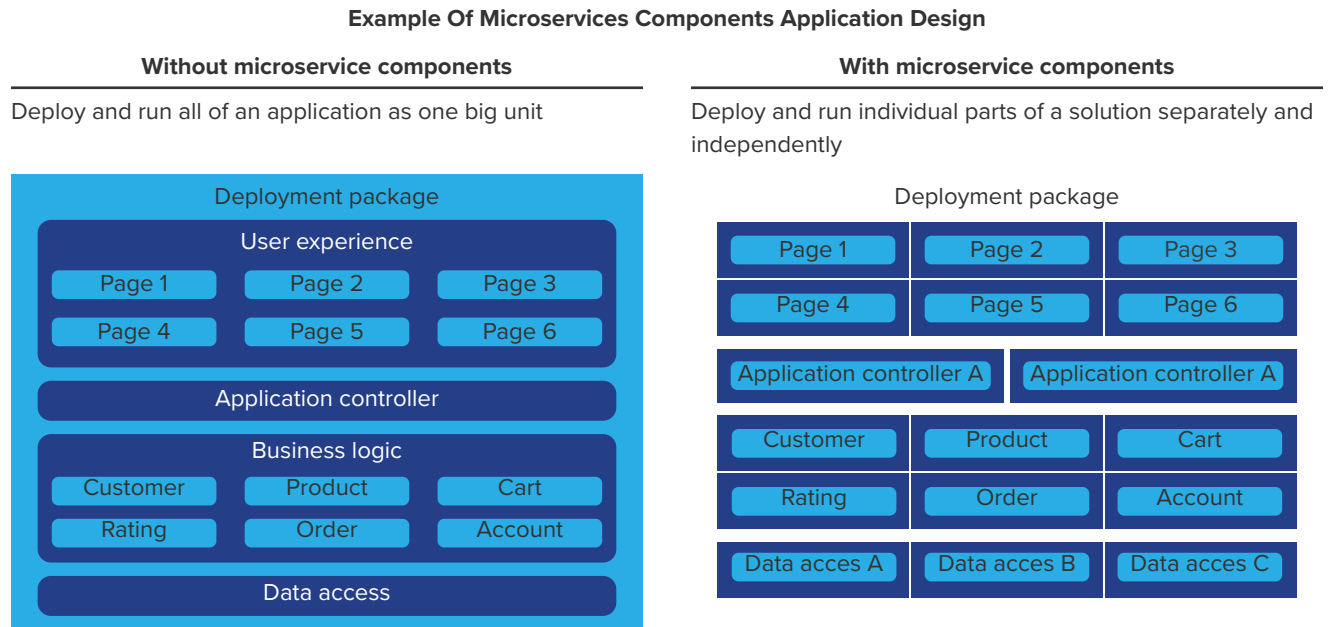- Not interested or no plans
- Don't know
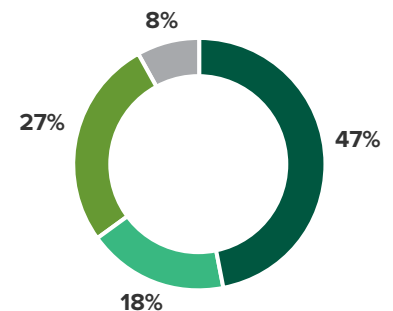
8%

27%

47%

18%

Base: 1,877 developers in Canada, France, Germany, Italy, the UK, and the US.
Note: Showing top results
Source: Forrester Analytics Business Technographics® Developer Survey, 2021

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> › **Moderate microservices deployment indicated by organizations today.** In building the IT capabilities to deploy transformation and agility, 43% of decision-makers have implemented microservices, helping companies remain adaptive to change, given the application design that it enables (see Figure 3). This becomes especially important in times like the pandemic, when many sectors had to manage unplanned spikes in customer interactions at a much quicker pace.

Figure 3

Example Of Microservices Components Application Design

Example Of Microservices Components Application Design

Without microservice components

Deploy and run all of an application as one big unit

Deployment package

- User experience
  - Page 1
  - Page 2
  - Page 3
  - Page 4
  - Page 5
  - Page 6
- Application controller
- Business logic
  - Customer
  - Product
  - Cart
  - Rating
  - Order
  - Account
- Data access

With microservice components

Deploy and run individual parts of a solution separately and independently

Deployment package

- Page 1
- Page 2
- Page 3
- Page 4
- Page 5
- Page 6
- Application controller A
- Application controller A
- Customer
- Product
- Cart
- Rating
- Order
- Account
- Data acces A
- Data acces B
- Data acces C
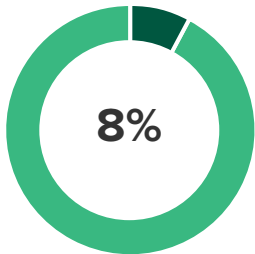
Source: Forrester Research, Inc.

Managing IT Complexity Requires A Clear Strategy

While APIs are incorporated into strategic digital transformation priorities, more needs to be done internally for business and IT leaders to collaborate and build internal capabilities and enable the required API deployment.

Forrester Research data on IT decision-makers' challenges in digital transformation reveal that:

› **Effectively implementing API and microservices has proven difficult.** Organizations recognize that the approach and design of API and microservices need to be refined for impact. However, only 8% of decision-makers who have implemented microservices have delivered high-quality service features in their production (see Figure 4). Forrester Research determines that API design is the most important part of organizations' API strategy. It noted that IT leaders should ensure a solution-based approach is adapted in the tooling and processes for API design and documentation. However, it is vital that business leaders are involved from the onset to ensure a product-led API design is enabled to realize the needed business agility.

› **API design and management requires high skills and talent.** In reviewing the implementation concerns and challenges for API implementation, 39% of respondents reported that their organizations need more expert developers and talent to adequately design and deploy microservices and API. To address skills gaps, organizations can look to developing patterns catalogues, train IT team members, and upskill talent.

› **API outlook lacks holistic view of business potential.** Forrester Research observes that developers and architects have a narrow view on the approach and outcomes of the API roadmap, focusing only on the usefulness in tech integration from an implementation perspective. While this is an important attribute of APIs, developers should recognize the business implications today. Business and IT leaders should consider that APIs can broaden business capabilities and business strategy, and create new kinds of products and enable new modes of engagement.

IT leaders need a solution-based approach in API design and documentation.

Figure 4

Decision-Makers Who Delivered High-Quality Service Features With Microservice Implementation

8%

Base: 1,877 developers in Canada, France, Germany, Italy, the UK, and the US.
Note: Showing top results
Source: Forrester Analytics Business Technographics® Developer Survey, 2021

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Future Needs For An Effective API Roadmap

Developing effective API capabilities is imperative for organizations to optimize their digital transformation objectives. To leverage APIs effectively, both business and IT decision-makers need to collaborate and enable the right approach and practices for growth.

Some of these core practices include:

› **Adopting a business-driven approach to API deployment.** API implementation is central to enabling the agility and connectivity needed for broader digital business goals. IT leaders should ensure a consistent synergy is in place for development teams to understand and connect to the business capabilities that APIs across cloud environments enable.

› **Coherent API governance and management with a platform-based approach.** To truly connect API potential with business needs, IT leaders should ensure a governance structure is in place for streamlined and multilayer architectural structure that allows API capabilities to synergize with enterprise goals as a whole. Having a platform-centric approach allows your developers to focus on API-based development while other aspects of governance, compliance, and integrations are taken care of. This enables the required synergies among developers and business teams.

› **Investing in out-of-the-box capabilities that help you accelerate in your API gateways, while supporting a hybrid environment.** Enterprises focus on cloud integration with a long-term view on innovation and scale. API capabilities need to complement the evolution towards cloud, while remaining agile to work across environments consistently.

› **Leveraging cloud-first tools that enable microservices implementation.** For microservices to build the right and secure service networks, introduce cloud-first tools that enable agility in a scalable and secure way. Capabilities like service meshes can provide a proxy in between your microservices to allow policies and security features to be handled independent of your developers, freeing their time for more business-centric development. Having a business value focus with your API deployment through analytics capabilities and monetization priorities can help further align agile IT implementation with the business benefits such initiatives need to provide.

Appendix A: Supplemental Material

RELATED FORRESTER RESEARCH

Forrester Analytics Business Technographics Global Priorities & Journey Survey, 2019

Forrester Analytics Business Technographics Priorities And Journey Survey, 2019

Forrester Analytics Business Technographics Developer Survey, 2019

Forrester Research, "Microservices Have An Important Role In The Future Of Solution Architecture", Randy Heffner, July 2015

Forrester Research, A Developer's Guide To Forrester's Strategies For API Success, Randy Heffner, September 2019

Appendix B: Endnotes

[1] Source: Forrester Analytics Global Business Technographics® Priorities And Journey Survey, 2019.

ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. Ranging in scope from a short strategy session to custom projects, Forrester's Consulting services connect you directly with research analysts who apply expert insight to your specific business challenges. For more information, visit forrester.com/consulting.

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