Why Agile Integration Is Critical To Digital Transformation

Guest Speaker: Jeffrey Hammond,
VP & Principal Analyst

Software delivery is now a core *business* competency

Digital matters..
- Digital experience
- Digital ecosystems
- Digital insights, et al

Software powers digital..

Software excellence = Business excellence

Empowered customers create urgency for change

› **Digital disruption:**

- Startups steal customers; old firms get Amazoned

› **Digital transformation:**

- Preparing to dish out your own disruption

Great billiards	*World-class billiards*
Make the crazy four-bank shot into the side pocket – and drop an extra ball in the corner	**Do that *and* leave the cue ball setup for the next shot**

Reference: "APIs Underpin a Digital Business Platform" Forrester report

World Class Software Delivery Is Customer Focused

FROM

TO

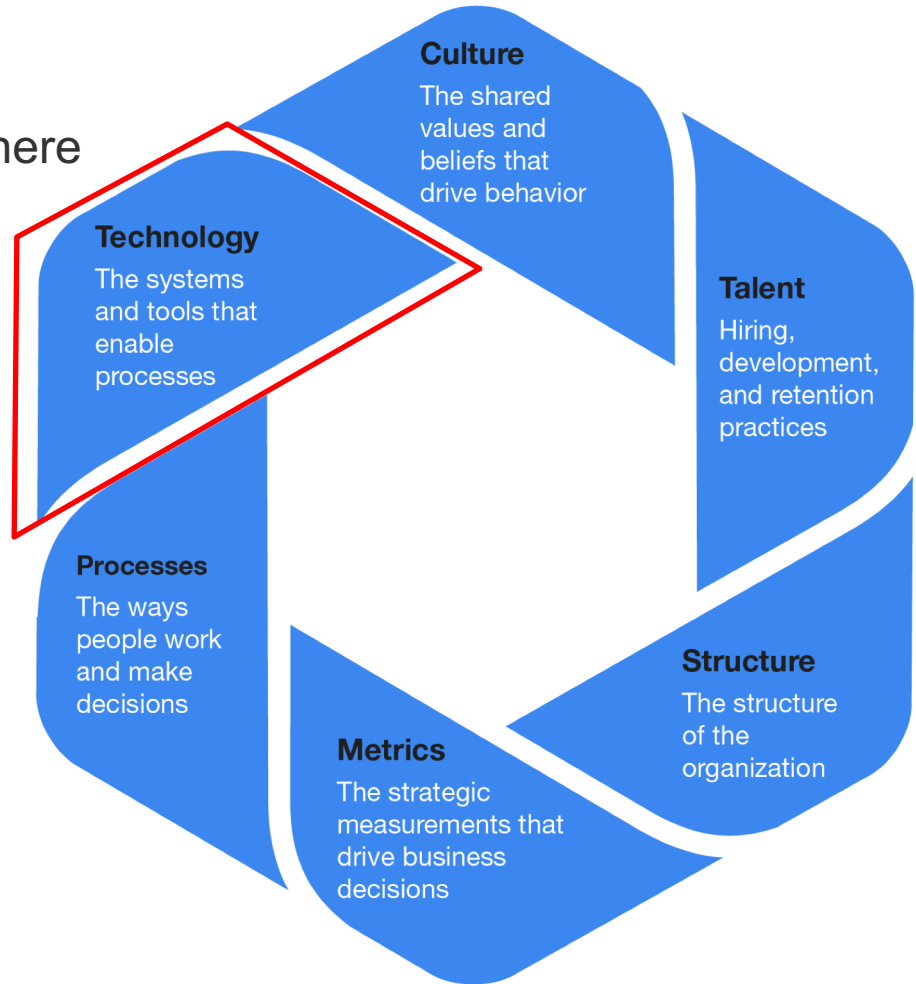|	
Customer aware	Customer led
Data rich	Insights driven
Perfect	Fast
Siloed	Connected

Today, let's start here

That requires investments in six areas that *collectively reinforce* each other

Culture
The shared values and beliefs that drive behavior

Technology
The systems and tools that enable processes

Talent
Hiring, development, and retention practices

Processes
The ways people work and make decisions

Metrics
The strategic measurements that drive business decisions

Structure
The structure of the organization

Architecture for agility correlates with higher growth

Which of the following architecture styles does your organization currently use or plan to use?

**Architecture strategy and design
to foster business agility**

- **Currently use**
- Planning to use
- Don't know
- **Not interested or no plans**

43%

18%

8%

31%

11% **Not interested or no plans**
have revenue growth of 15% or more

31% **Currently use architecture for agility**
have revenue growth of 15% or more
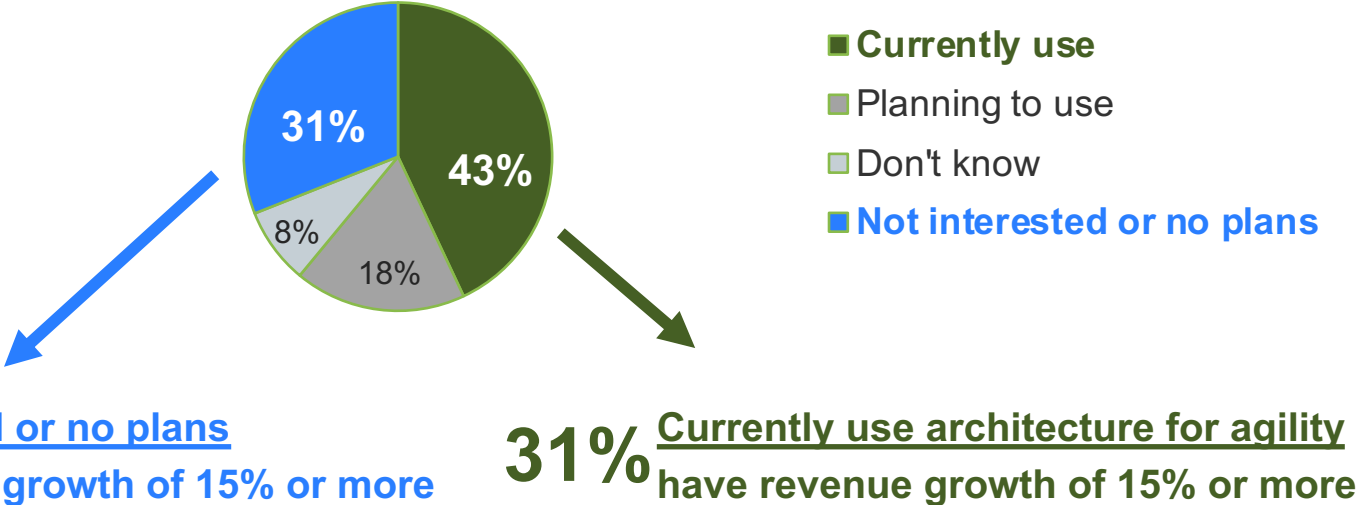
Base: Developers who work full time, n=3,111
Source: Forrester's Business Technographics® Business and Technology Developer Survey 2018

What is agile integration?

› Combining integration technologies, custom app development, Agile/DevOps/CI-CD, and cloud-native platforms to improve speed and security of software delivery.

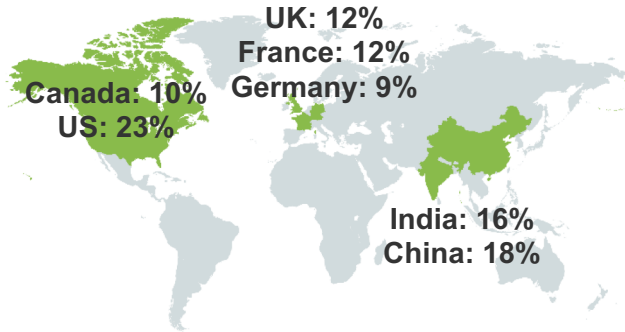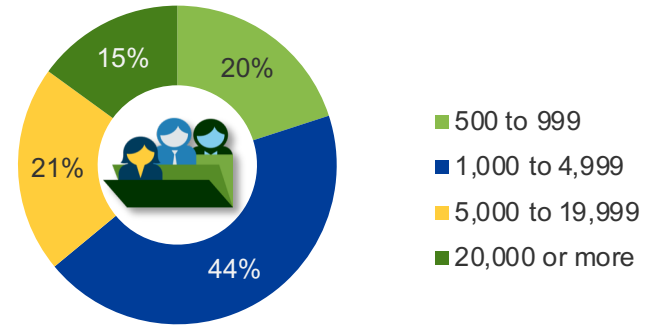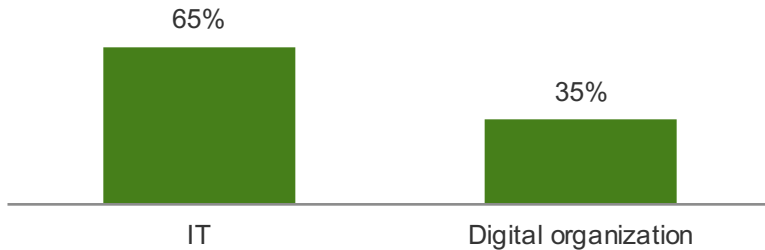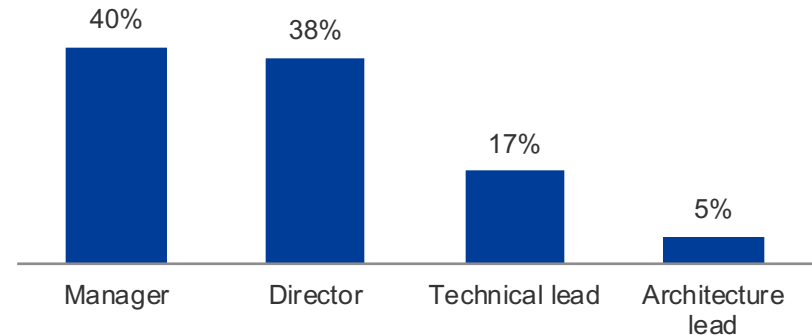|				
Enterprise service bus *Integration server* *Connectors* *Messaging* *et al*	**+**	*Continuous integration* *Continuous delivery* *Agile-plus-architecture* *et al*	**+**	*Containers* *Microservices* *Open source* *Custom development* *et al*

To learn about it, we asked integration leaders

Location

UK: 12%
France: 12%
Germany: 9%
Canada: 10%
US: 23%
India: 16%
China: 18%

of employees

- 500 to 999 — 20%
- 1,000 to 4,999 — 44%
- 5,000 to 19,999 — 21%
- 20,000 or more — 15%

Position/department

- IT: 65%
- Digital organization: 35%

Title at the organization

- Manager: 40%
- Director: 38%
- Technical lead: 17%
- Architecture lead: 5%

Base: 300 enterprise agile development strategy decision makers.
Source: A commissioned study conducted by Forrester Consulting on behalf of RedHat, May 2018

We identified firms as "successful with integration and digital" if their integration strategy very well supports their agile delivery teams.

How well does your current integration strategy support your agile delivery teams?

Successful firms

- **Very well,** integrations are always already there when we need them, and developers can implement without assistance.

Less successful firms

- **Average**, there are few existing integration points, and teams often need to wait to get access.
- **Below average,** there are few existing integration points and teams, and it takes too long to get access.
- **Not at all well,** there are seldom existing integration points, and it's hard to impossible to get new ones added quickly

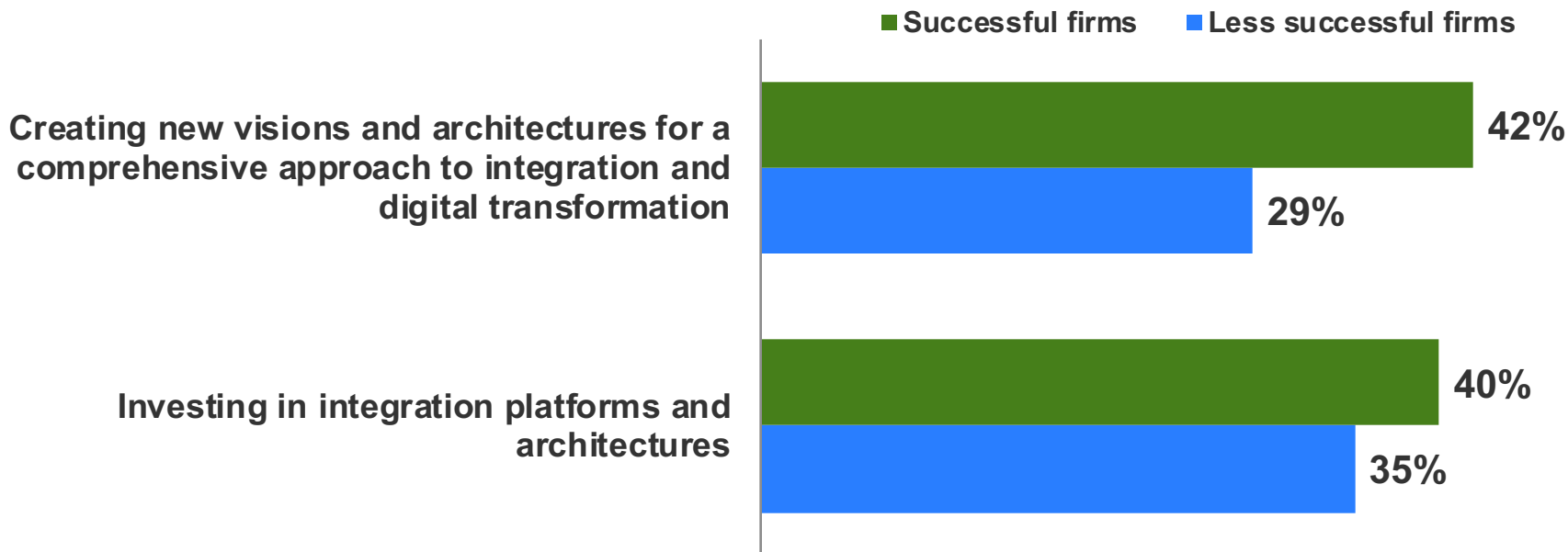Base: 144 enterprise agile development strategy decision makers.

Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, May 2018

What do firms that are successful with integration and digital do differently?

Successful firms go beyond tech investment to create new visions and architectures for integration

What steps is your team taking/have you taken to modernize your integration strategy?

■ Successful firms   ■ Less successful firms

Creating new visions and architectures for a comprehensive approach to integration and digital transformation
- 42%
- 29%

Investing in integration platforms and architectures
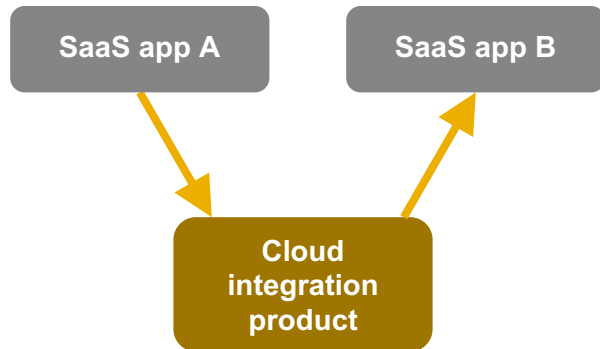- 40%
- 35%

Base: 55 enterprise agile development strategy decision makers.

Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, May 2018

A continuum of very different integration approaches

← Quick-hit / point-to-point .... **Digital business building blocks →**

Push data around behind the scenes

SaaS app A → Cloud integration product → SaaS app B

Mirror digital business design in software

Business APIs | **Business events** | **Business processes**

**Integration toolkit
Custom microservices
Cloud integration
Hybrid integration**

SaaS app A → (Integration) ← SaaS app B

Successful firms use many integration styles

Which of the following does your company currently include in its integration strategy? (Select all that apply.)
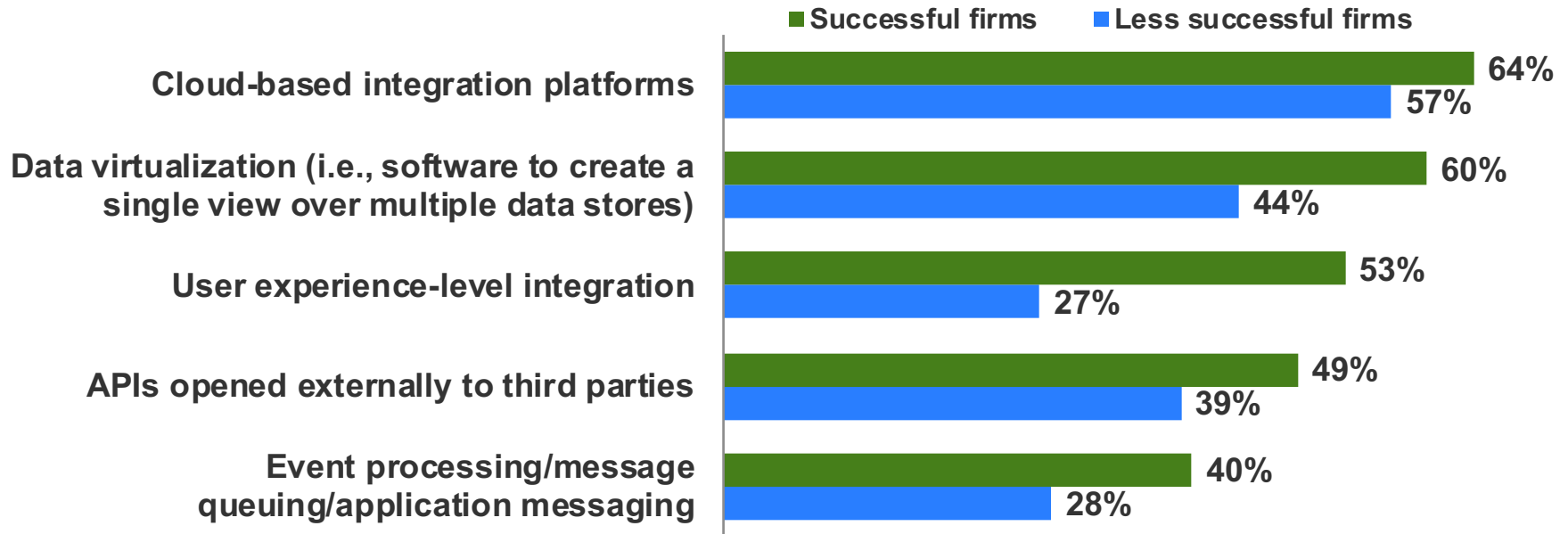
■ Successful firms   ■ Less successful firms

	Successful firms	Less successful firms
Cloud-based integration platforms	64%	57%
Data virtualization (i.e., software to create a single view over multiple data stores)	60%	44%
User experience-level integration	53%	27%
APIs opened externally to third parties	49%	39%
Event processing/message queuing/application messaging	40%	28%

Base: 144 enterprise agile development strategy decision makers.

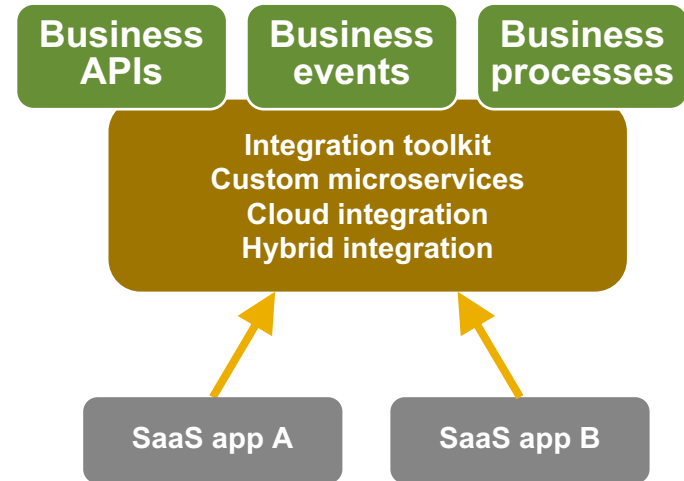Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, May 2018

Successful firms build expertise for many API types

How skilled is your development team at deploying and supporting the following types of APIs? (Advanced/Expert)

■ Successful firms ■ Less successful firms

Event driven APIs
85%
59%

Software development APIs/SDKs
80%
61%

APIs we charge 3rd-party developers for
74%
54%

Hypermedia APIs
69%
51%

External restful APIs
69%
54%

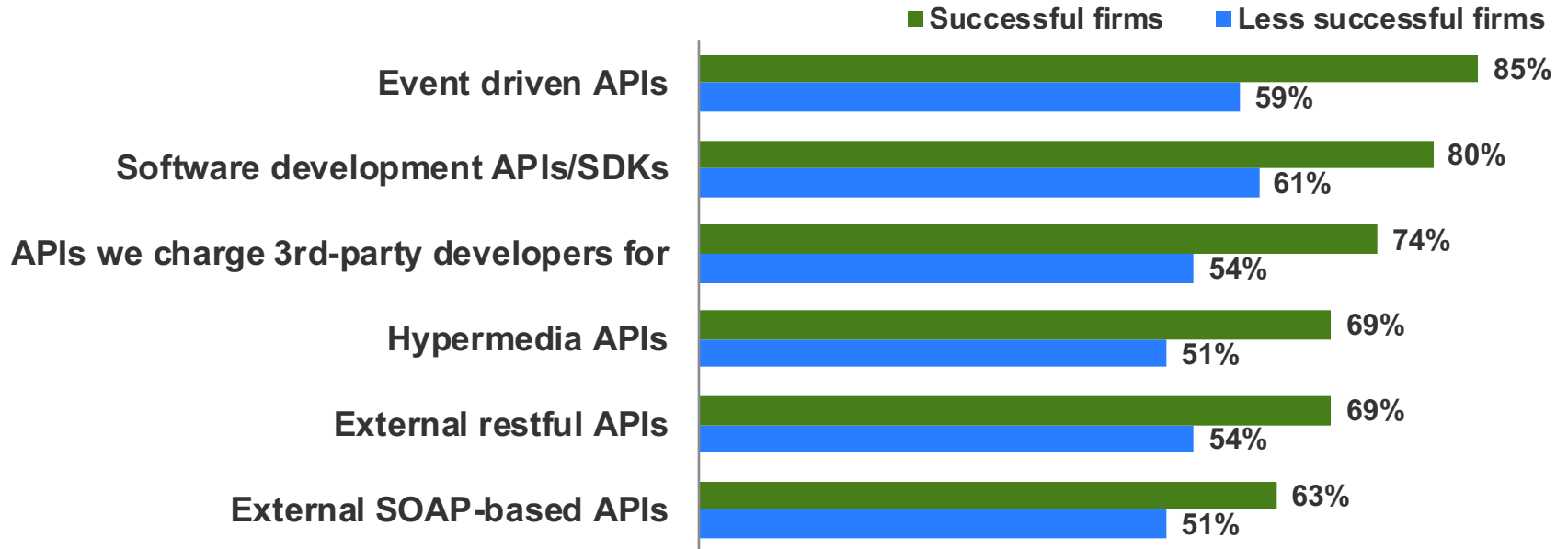**External SOAP-based APIs**
63%
51%

Base: 144 enterprise agile development strategy decision makers.

Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, May 2018
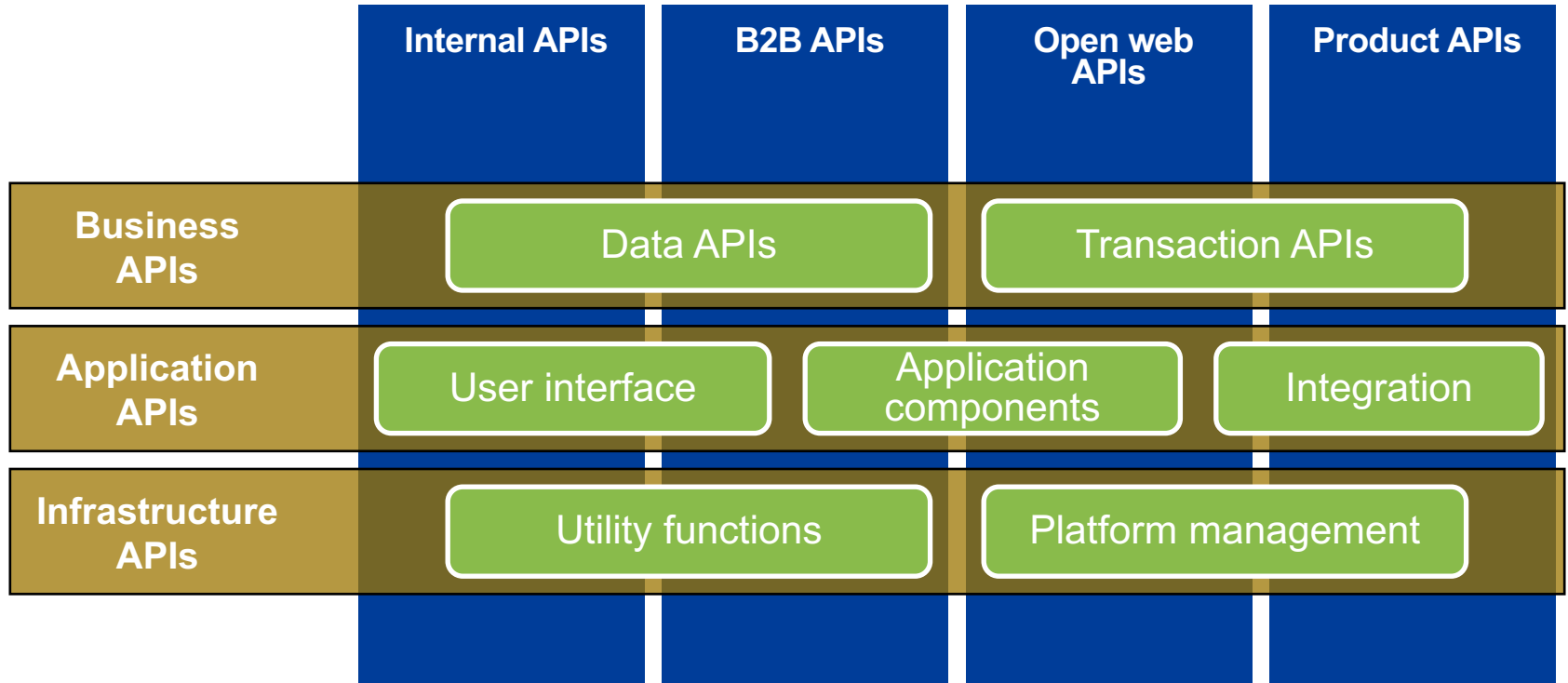
Establish an API taxonomy to guide design

	Internal APIs	B2B APIs	Open web APIs	Product APIs
Business APIs	Data APIs		Transaction APIs	
Application APIs	User interface	Application components		Integration
Infrastructure APIs	Utility functions		Platform management	

Source: "Keep API Strategy On Track With An API Taxonomy" Forrester report

At successful firms, Agile is general practice

What percentage of the development teams at your company use agile software development practices?

■ Successful firms   ■ Less successful firms

All teams or Most teams use (around 75%)
- 93%
- 47%

Half of teams or less use
- 7%
- 53%

Base: 144 enterprise agile development strategy decision makers.

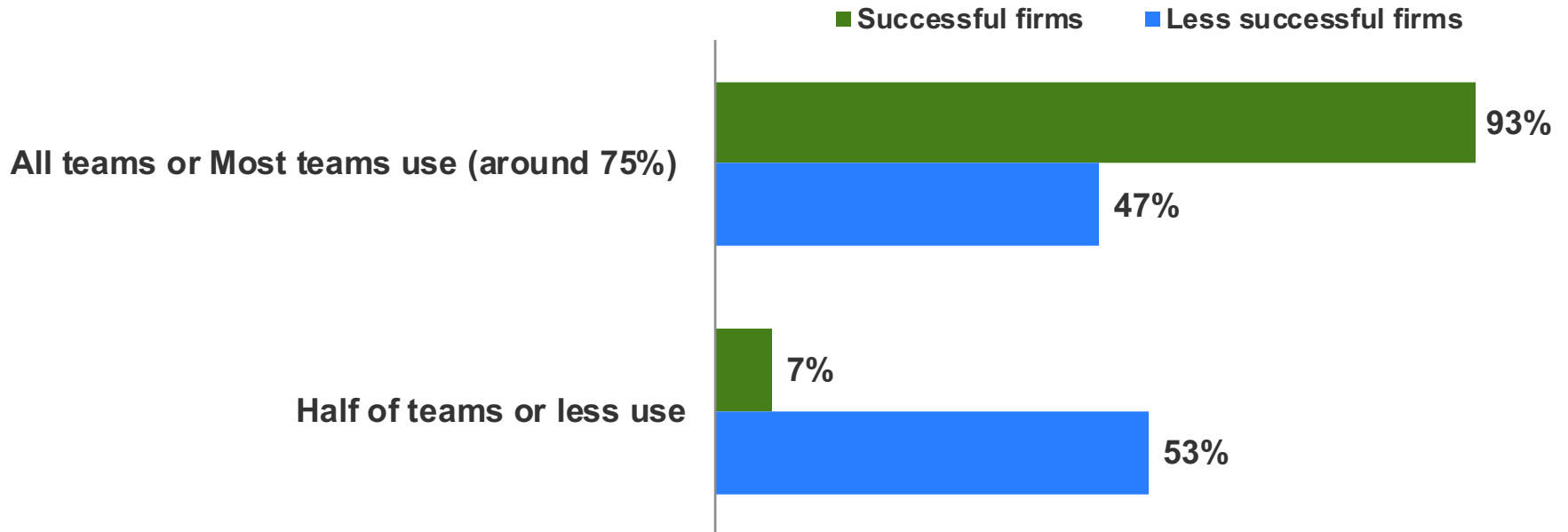Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, May 2018

What are your organization's approaches to integration today?

■ Successful firms   ■ Less successful firms

Microservices (or custom APIs/services) that add new business logic on top of legacy business logic
- 44%
- 31%

APIs that combine data and/or functions from both legacy and newer applications
- 51%
- 29%

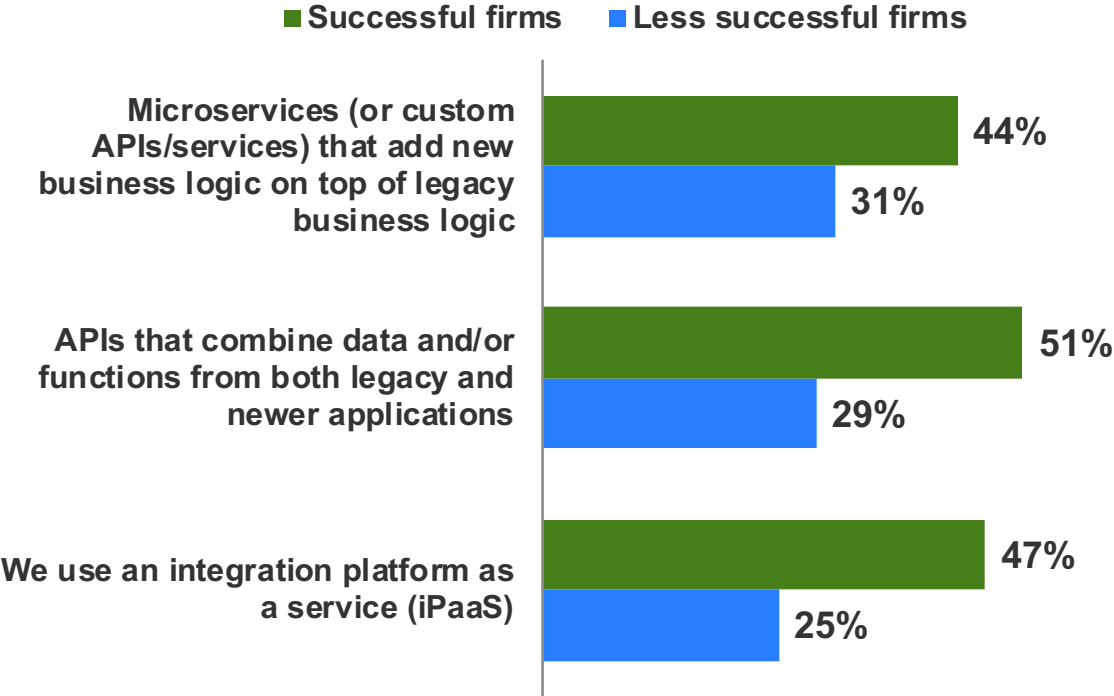**We use an integration platform as a service (iPaaS)**
- 47%
- 25%

Base: 144 enterprise agile development strategy decision makers.

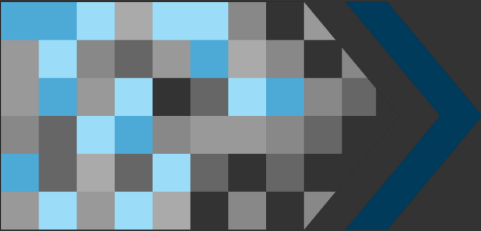Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, May 2018

Successful firms more heavily use microservices, and they blend app development with integration

Blended integration and app dev with microservices

Fully-custom microservice

Microservice built via hand-coding in multiple languages, providing a large-grained service
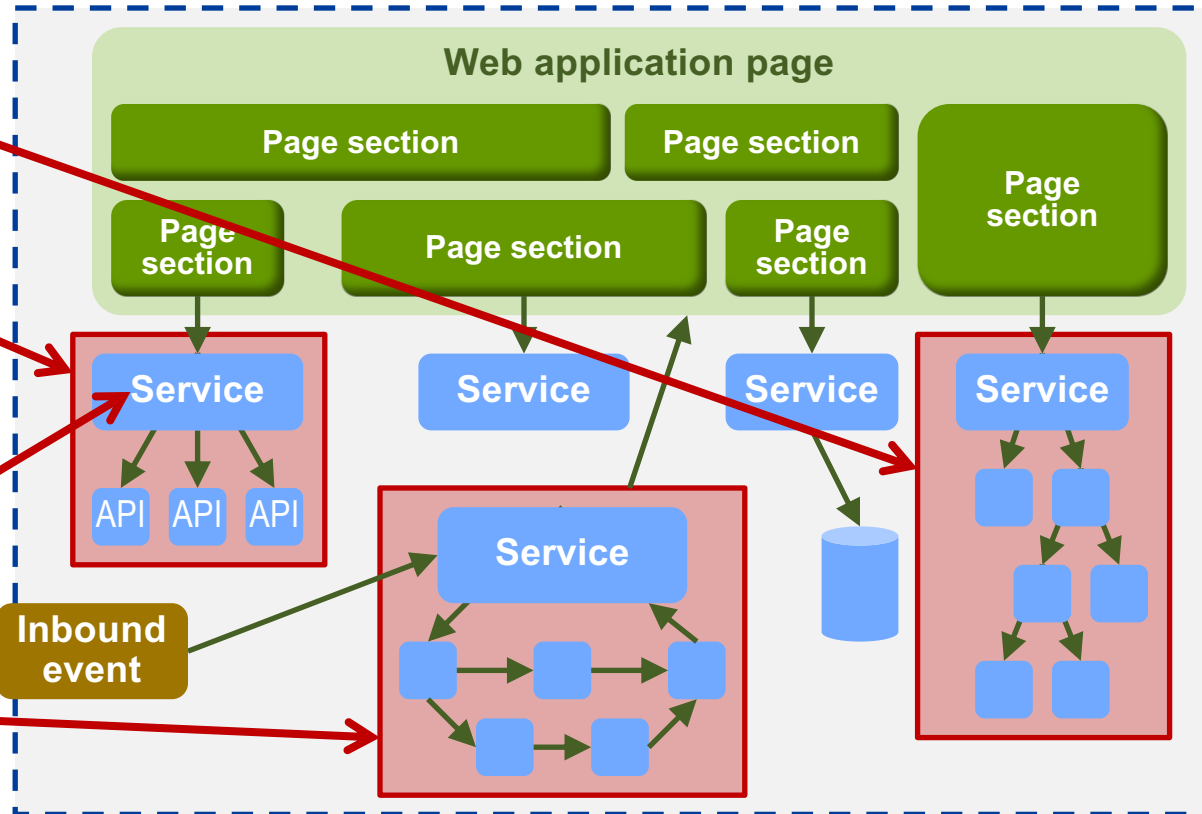
Integration-based microservice

Microservice built with an integration flow across multiple APIs into legacy and partner applications

Containerized, singular integration flow

A container image comprised of a single integration flow and only the integration elements needed to run it

Event-driven non-visual microservice

Inbound event triggering a large-grained microservice built using a a combination of integration and hand-coding options

Web application page

Page section

Page section

Page section

Page section

Page section

Page section

Page section

Service

Service

Service

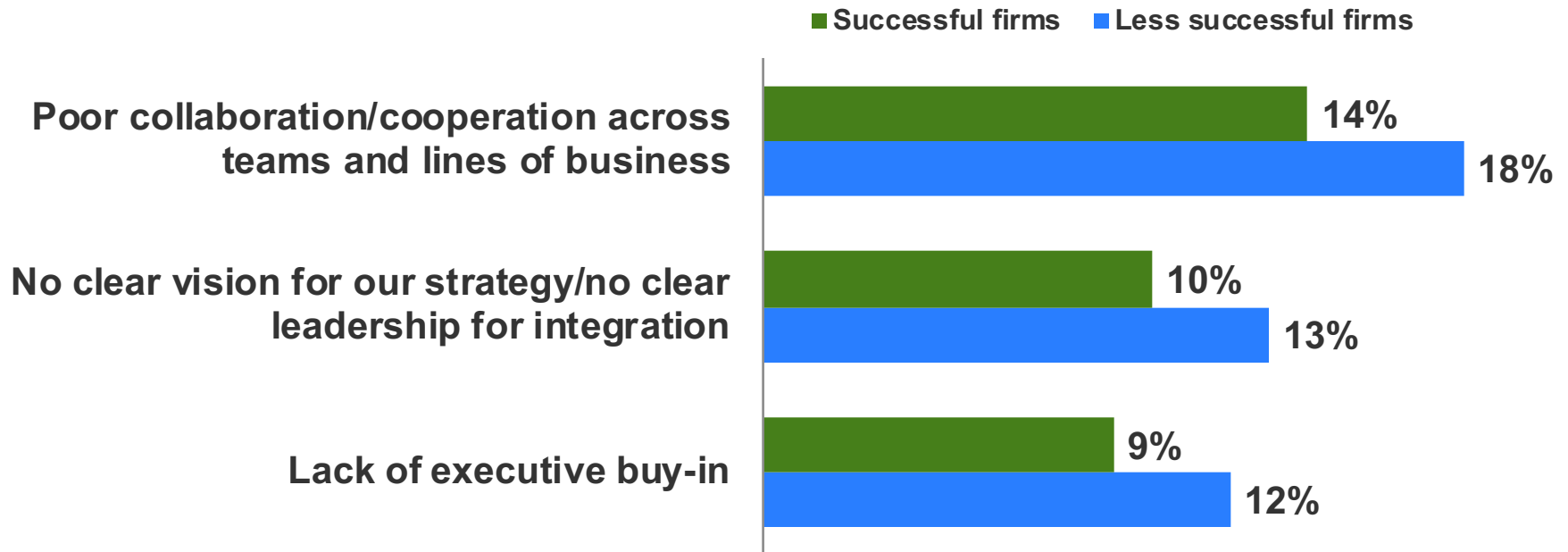Service

API API API

Service

Inbound event

Service

Reference: "Designing Microservice Apps For Containers And Cloud Platforms" Forrester report

How do successful firms view Agile integration challenges differently?

Successful firms have more vision and collaboration

What is holding your company back from modernizing its integration strategy?

■ Successful firms ■ Less successful firms

Poor collaboration/cooperation across teams and lines of business
- Successful firms: 14%
- Less successful firms: 18%

No clear vision for our strategy/no clear leadership for integration
- Successful firms: 10%
- Less successful firms: 13%

Lack of executive buy-in
- Successful firms: 9%
- Less successful firms: 12%

Base: 144 enterprise agile development strategy decision makers.

Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, May 2018

Successful firms struggle less with success

What challenges does/did your organization experience with a current integration strategy?

■ Successful firms   ■ Less successful firms

Difficulty responding to customer needs quickly
- 8%
- 14%

Inability to process increasing data volumes
- 8%
- 12%

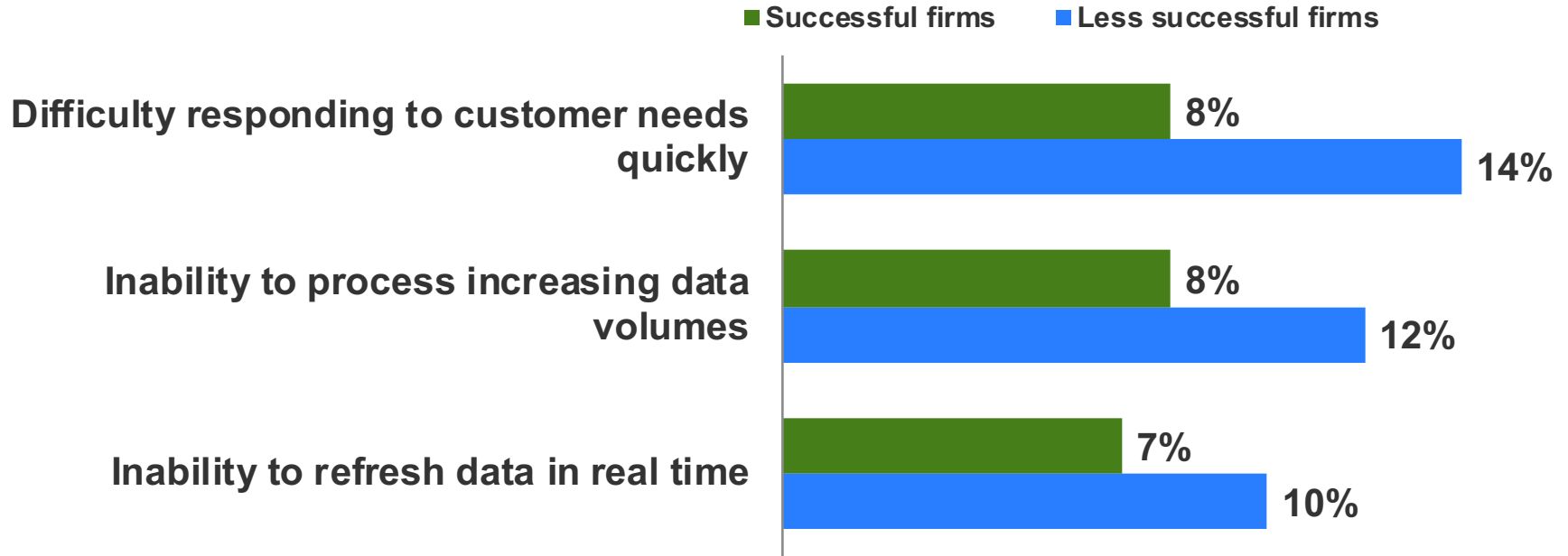**Inability to refresh data in real time**
- 7%
- 10%

Base: 144 enterprise agile development strategy decision makers.

Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, May 2018

How frequently do you release or update APIs with new features or added content?

■ Successful firms ■ Less successful firms

More than 2x

Daily or weekly
- Successful firms: 53%
- Less successful firms: 20%

Bi-weekly or monthly
- Successful firms: 27%
- Less successful firms: 56%

Quarterly or annually
- Successful firms: 20%
- Less successful firms: 23%

Base: 55 enterprise agile development strategy decision makers.

Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, May 2018
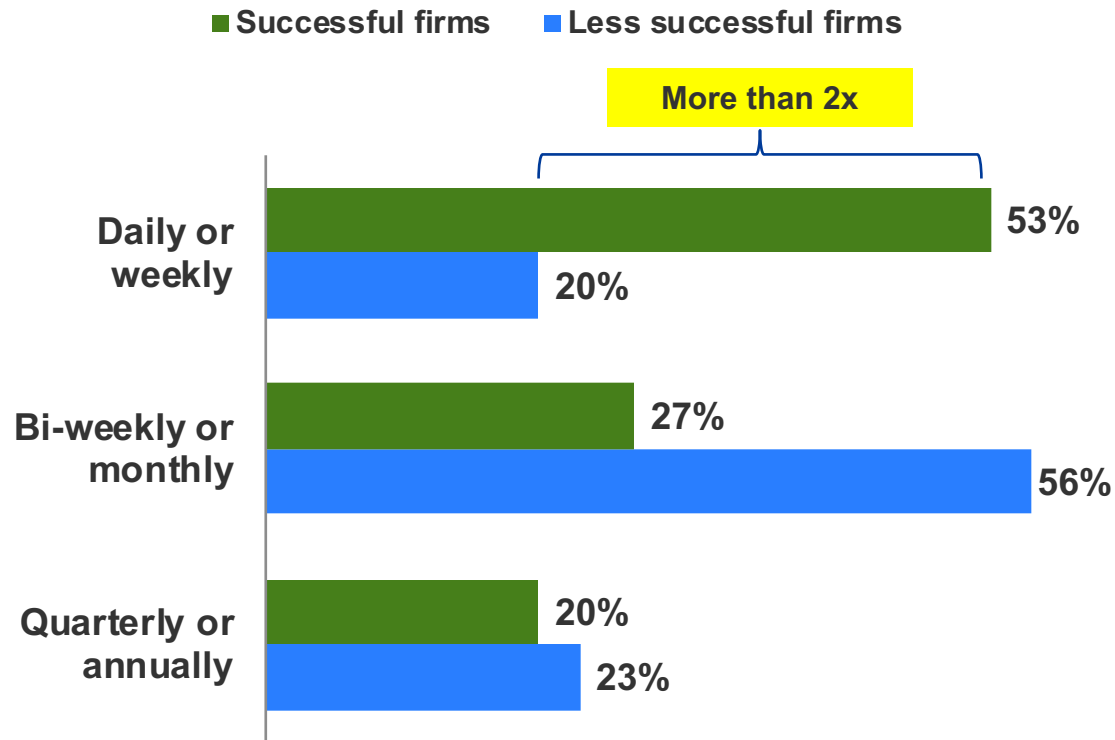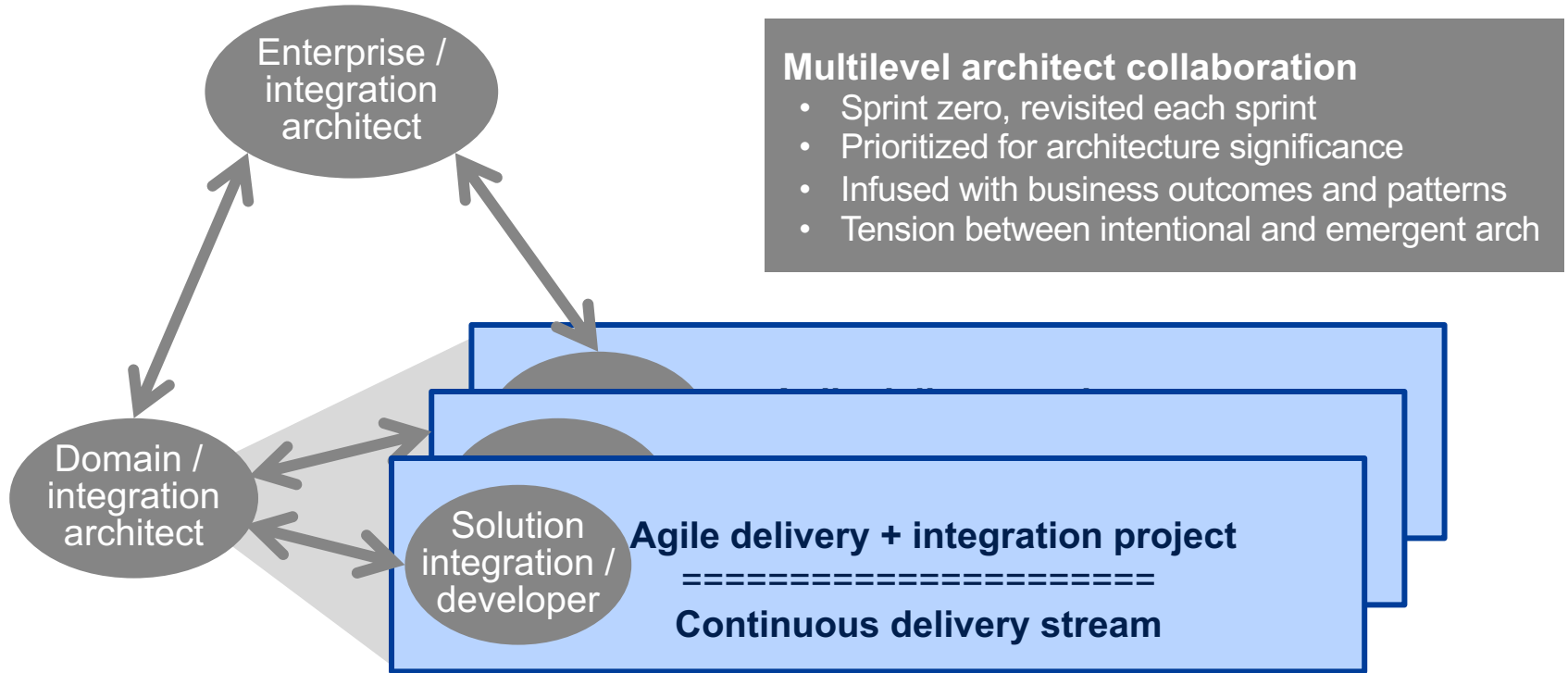
Successful firms are more than twice as likely to release/update APIs weekly or daily

Developer-architect collaboration is a critical enabler

Enterprise / integration architect

Domain / integration architect

Solution integration / developer

Multilevel architect collaboration
- Sprint zero, revisited each sprint
- Prioritized for architecture significance
- Infused with business outcomes and patterns
- Tension between intentional and emergent arch

Agile delivery + integration project
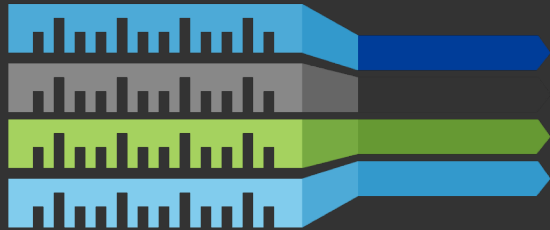=======================
Continuous delivery stream

Source: "Best Practices For Agile-Plus-Architecture" Forrester report
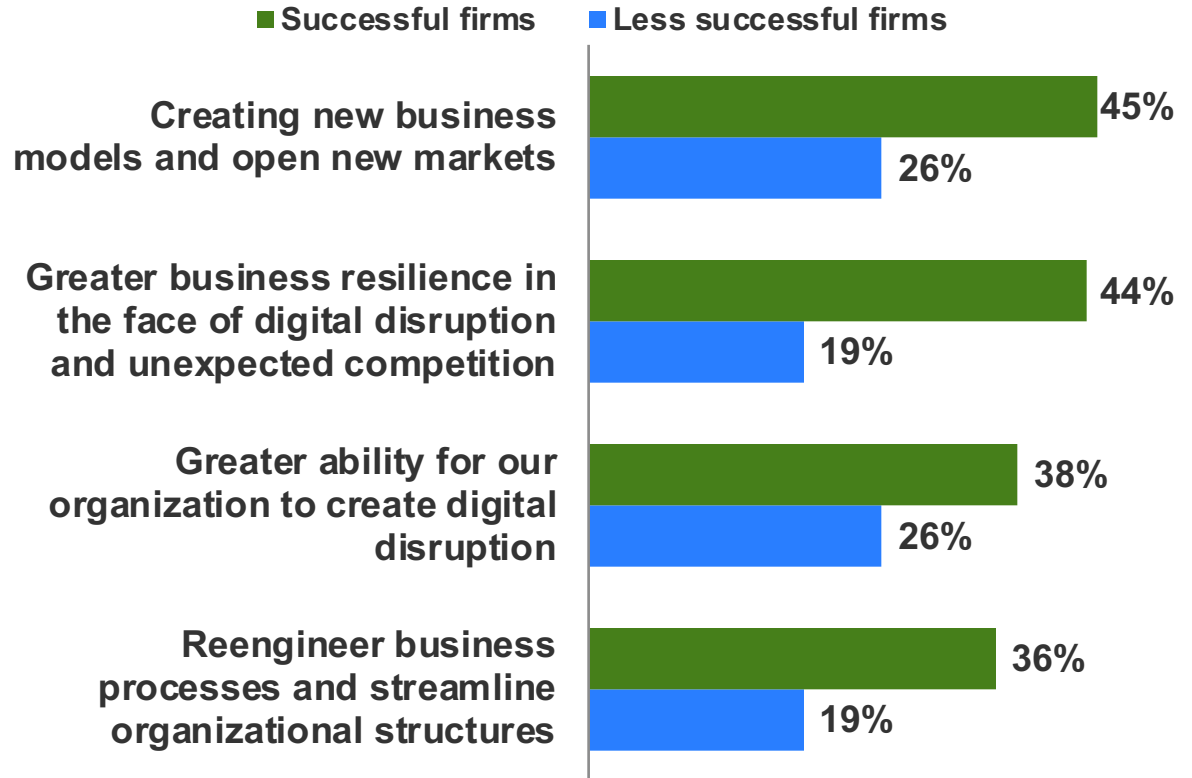
What are the key lessons to be learned from successful firms?

Successful firms focus on and measure business outcomes of integration

How do you measure the success of your integration strategy?

■ **Successful firms**   ■ **Less successful firms**

Creating new business models and open new markets
- Successful firms: 45%
- Less successful firms: 26%

Greater business resilience in the face of digital disruption and unexpected competition
- Successful firms: 44%
- Less successful firms: 19%

Greater ability for our organization to create digital disruption
- Successful firms: 38%
- Less successful firms: 26%

Reengineer business processes and streamline organizational structures
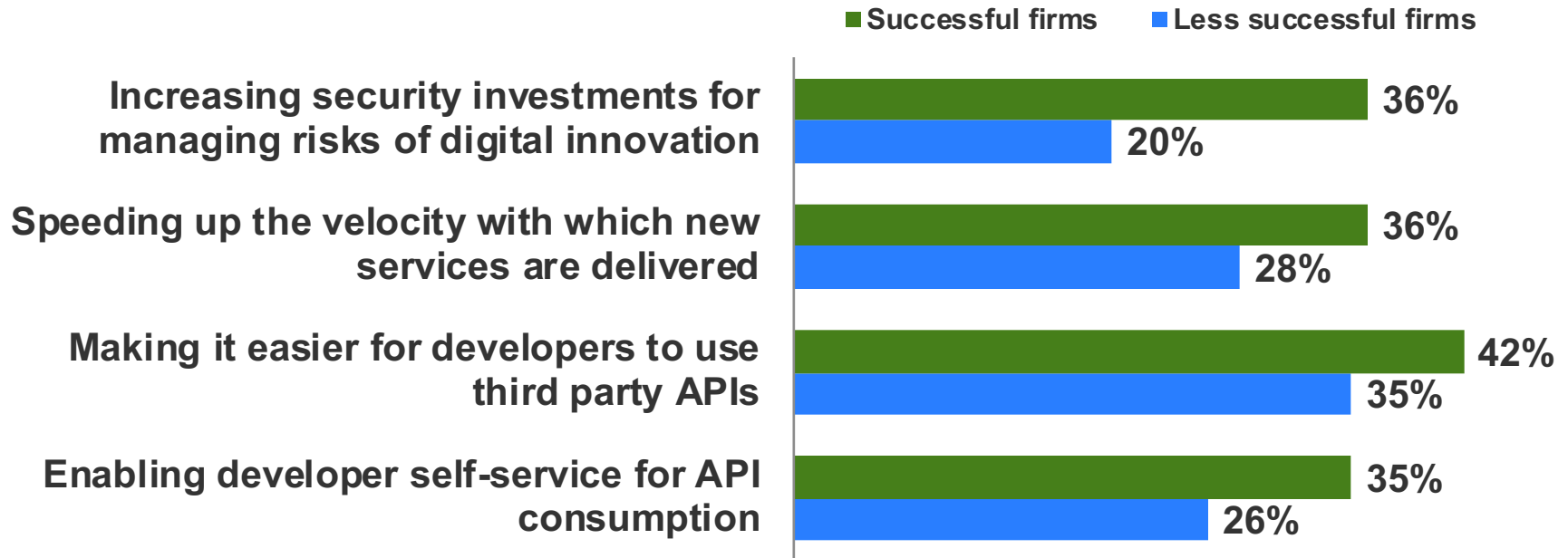- Successful firms: 36%
- Less successful firms: 19%

Base: 55 enterprise agile development strategy decision makers.

Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, May 2018

Successful firms invest in APIs, security, and agility

What steps is your team taking/have you taken to modernize your integration strategy?

■ Successful firms ■ Less successful firms

Increasing security investments for managing risks of digital innovation
- 36%
- 20%

Speeding up the velocity with which new services are delivered
- 36%
- 28%

Making it easier for developers to use third party APIs
- 42%
- 35%

Enabling developer self-service for API consumption
- 35%
- 26%

Base: 55 enterprise agile development strategy decision makers.

Source: A commissioned study conducted by Forrester Consulting on behalf of Red Hat, May 2018

Recommendations

Blend

Agile integration with

Agile development

Broaden

your integration strategy and architecture

Business design
is your center point
not application silos

Blur

lines between
internal integration
and
external integration

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Thank you

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