



# How low-code platforms let developers drive business innovation

**Charles Lamanna**  
Corporate Vice President  
Citizen Application Platform

Guest Speaker **John R. Rymer**  
Vice President/Principal Analyst  
Forrester Research

Microsoft Power Apps

# Introductions



**Charles Lamanna**

**Corporate Vice President for the Low Code Application Platform (LCAP) at Microsoft**

**The Low Code platform includes Dynamics 365 platform, Power Apps, Power Automate, AI Builder and the Common Data Service.**

- Previously worked in Azure on pro dev platforms from 2013-2017.
- CEO of MetricsHub, acquired by Microsoft in 2013.



**John R. Rymer**

**Vice President/Principal Analyst at Forrester Research**

- Inventor of term “low-code” (with Clay Richardson)
- Long-time analyst of application development software markets
- Recognized: The Low-Code50

# Agenda



- 1 Low-code application Development
- 2 The case for low-code
- 3 A platform for collaboration
- 4 Governing a low-code application development platform
- 5 Getting started with low-code application development platforms

# Low-code application Development

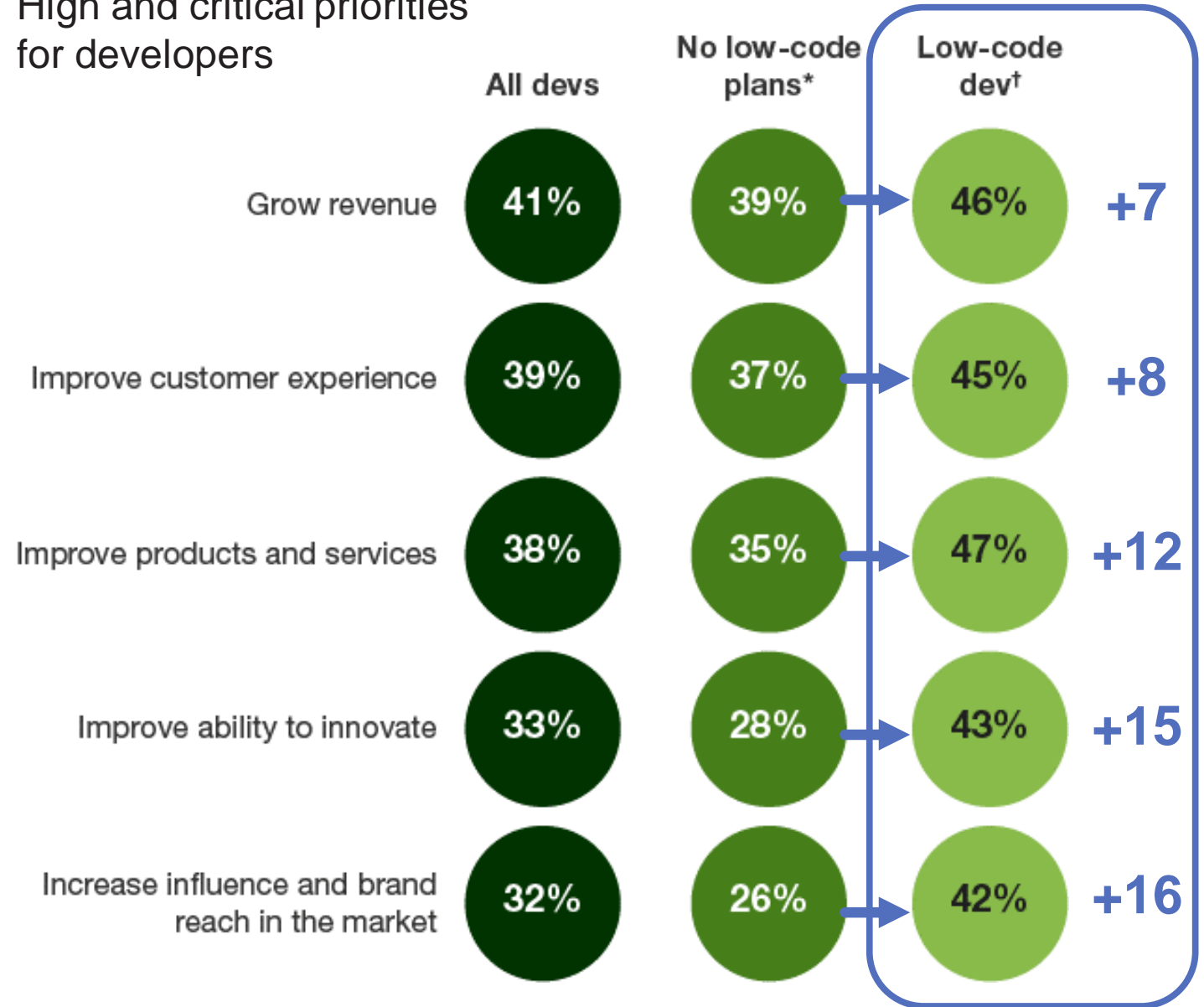


- What is low-code application development?

# This analysis blew my mind

Base: 3,294 developers  
Base: 1,333 developers who have no plans to implement a low-code platform  
Base: 860 developers who have implemented a low-code platform  
Source: Forrester Analytics Global Business Technographics® Developer Survey, 2019

## High and critical priorities for developers



---

# Our definition -- low-code development platforms

## Development Approach

- Products and/or cloud services for application development that employ visual, declarative techniques instead of programming ...

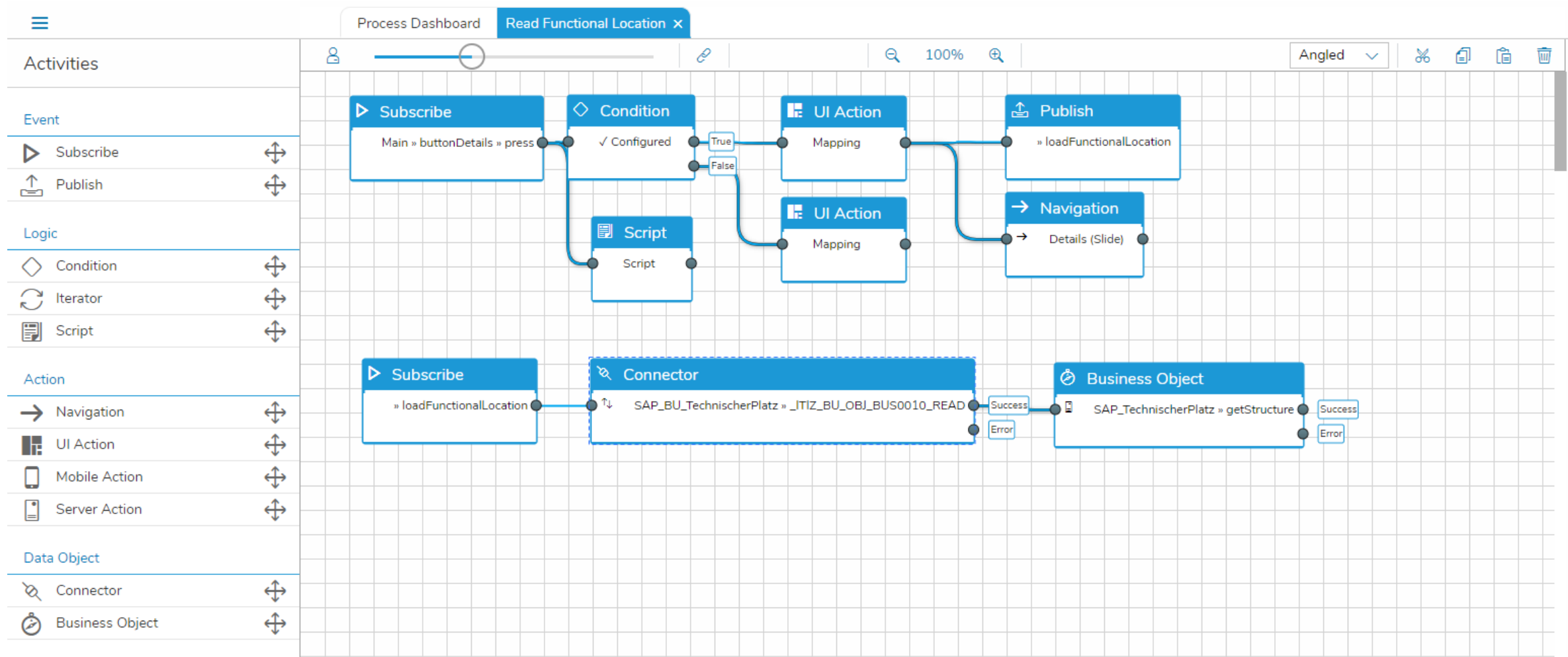
## Business Model

- ... and are available to customers at low or no cost to begin, with costs rising in proportion of the business value of the platforms.

# From this ...

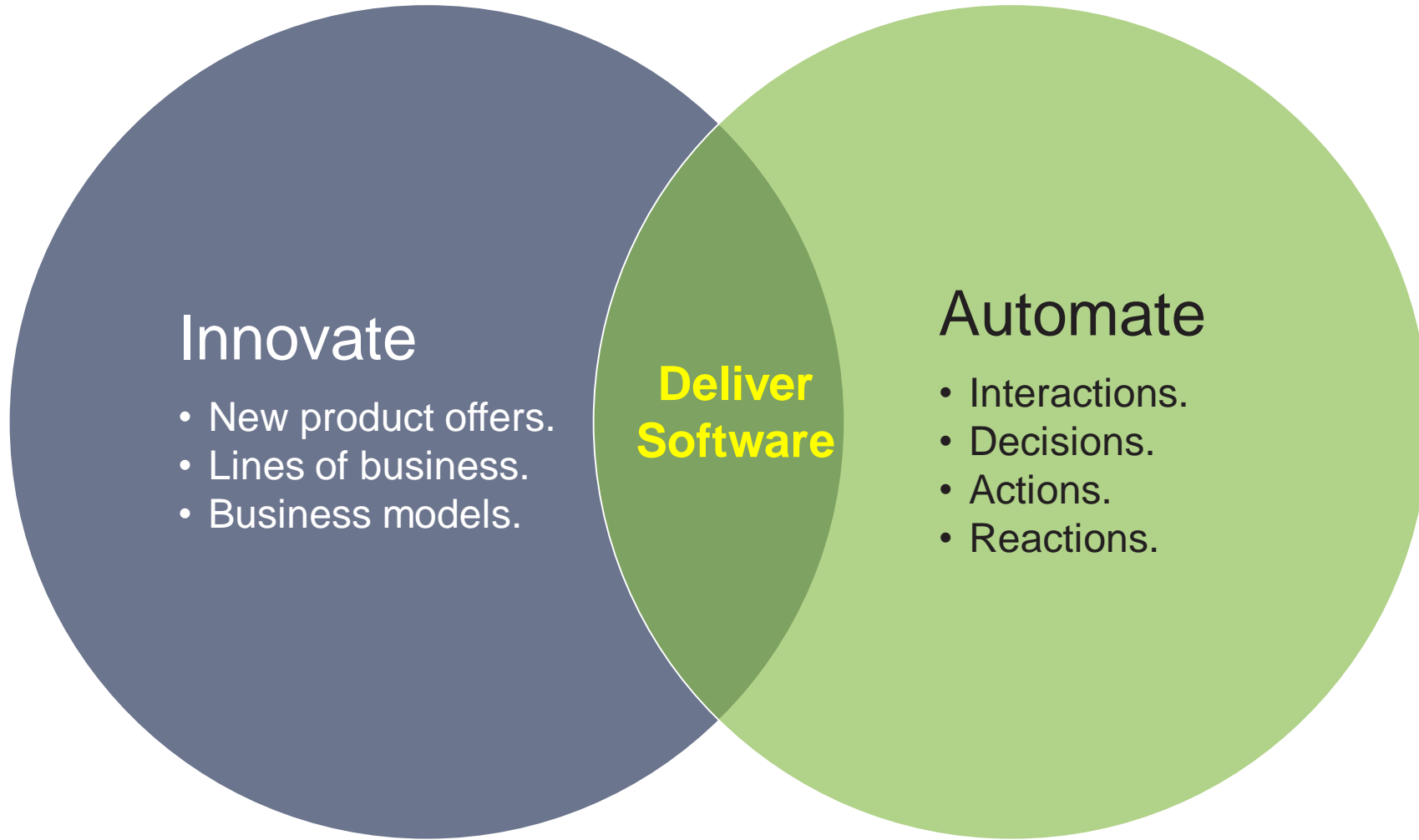
```
23     if ((this.getItemValue("Dialogs", "messageBoxDismantleEquipment", "action") == "OK")) {
24
25         var dataForApp_SAP_TechnischerPlatz_V2_getSelectedEquipments = {};
26         dataForApp_SAP_TechnischerPlatz_V2_getSelectedEquipments['STRUCT'] = this.getModel("Details").oData["mTreeFunclocStructure"]["items"];
27
28         var cbForApp_SAP_TechnischerPlatz_V2_getSelectedEquipments = function(data) {
29             this.getGlobals().setVar("selectedEquipments",this.resolveConnectorResult(data.result, "SELECTED"));
30             (function (callback) {
31                 var source = this.getGlobals().getVar("selectedEquipments");
32                 if (source instanceof Array) {
33                     for (var i = 0; i < source.length; i++)
34                         callback.bind(this)(source[i]);
35                 }
36                 this.getGlobals().getVariablesModel().refresh()
37             }).bind(this)(function(data){
38                 this.getGlobals().setVar("iteratorSelectedEquipments",this.iteratorElementMapping(data, 'selectedEquipments'));
39
40                 var dataForSAP_BU_Equipment__ITIZ_BU_OBJ_EQUI_DISMANTLE = {};
41                 dataForSAP_BU_Equipment__ITIZ_BU_OBJ_EQUI_DISMANTLE['EQUIPMENT'] = this.getGlobals().getVar("iteratorSelectedEquipments","OBJECT");
42
43                 var cbForSAP_BU_Equipment__ITIZ_BU_OBJ_EQUI_DISMANTLE = function(data) {
44
45                     this.callCustomEvent("loadFunctionalLocation");
46                 }
47
48
49                 this.callConnectorCall("SAP_BU_Equipment", "_ITIZ_BU_OBJ_EQUI_DISMANTLE", dataForSAP_BU_Equipment__ITIZ_BU_OBJ_EQUI_DISMANTLE, cbForSAP_BU_Equipment__ITIZ_BU_OBJ_EQUI_DISMANTLE, true, true, null);
50
51             });
52         }
53
54         this.callBusinessObject("App_SAP_TechnischerPlatz_V2", "getSelectedEquipments", dataForApp_SAP_TechnischerPlatz_V2_getSelectedEquipments, cbForApp_SAP_TechnischerPlatz_V2_getSelectedEquipments, true, true, null, true);
55
56     }
57 }
```

... to this



---

# Why? Think back to 2010



Healthcare  
system



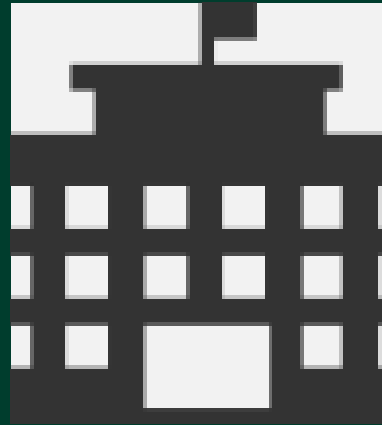
Manage patient journeys across departments & specialists.

Vehicle  
manufacturer



Optimize part selection in designs based on odors & chemicals.

Commercial  
real-estate  
manager



Tenant request & work-order management.

Flavors &  
fragrances  
manufacturer



Speed creation of new formulae for customers.

Insurance  
carrier



Create new insurance products & offers.

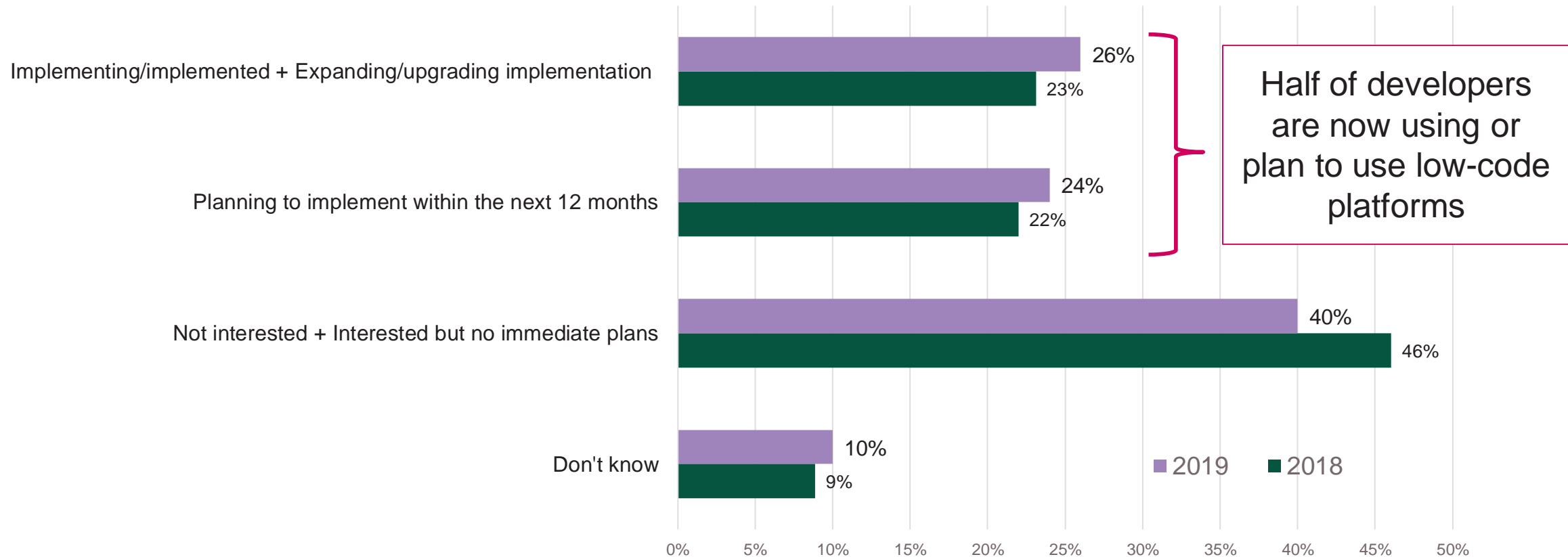
# The case for low-code



- Should organizations be embracing low-code application development platforms?

# Developer low-code adoption growing

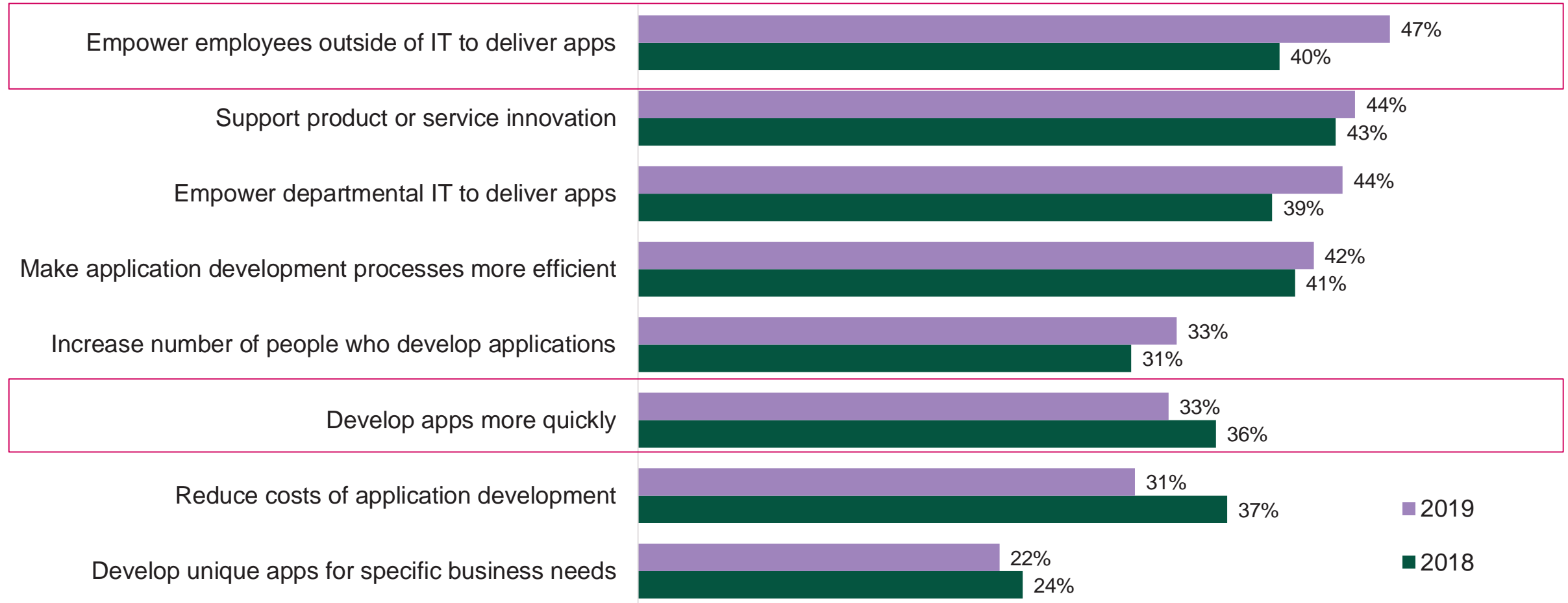
“What are your team’s plans to adopt low-code development platforms?”



Bases: 2018 is 3,228 global developers; 2019 is 3,295 global developers.  
Source: Forrester Analytics' Business Technographics Developer surveys, 2018 and 2019.

# Why adopt? Business empowerment, then speed

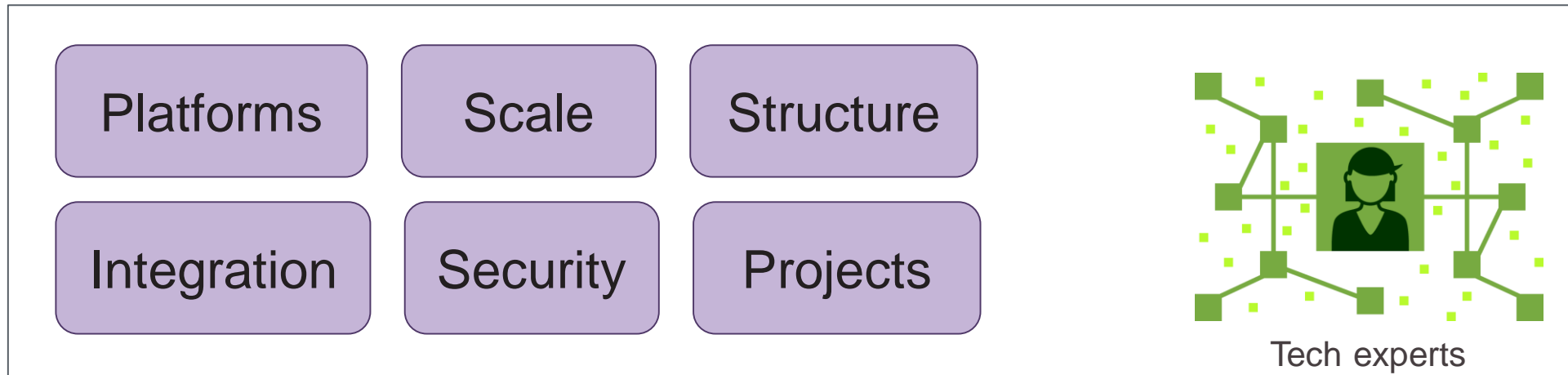
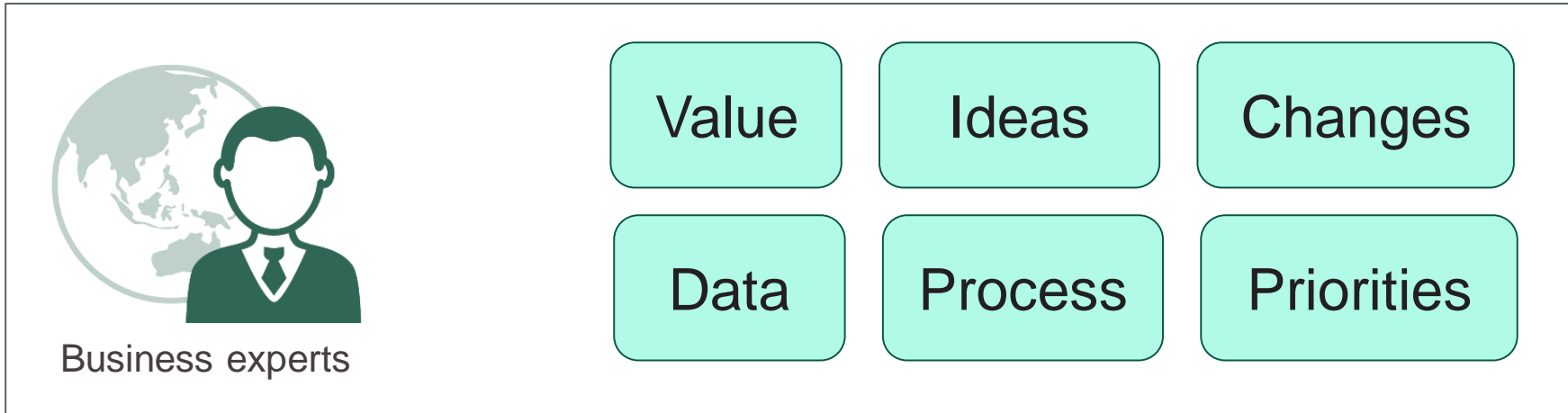
What was your organization's primary goal for adopting a low-code platform?



Bases: 1,145 Developers (2018) and 1,393 Developers (2019)

Source: Forrester Analytics' Business Technographics Developer Global Developer Survey, 2018 and 2019.

# IT-business collaboration vital to success



# Benefits of low-code app development

Focus on innovating. Power Apps takes care of the rest



## Increased development agility

Automate and enhance repetitive and time-consuming processes and reduce errors across your organization.



## Speed & savings

Reduce time & cost building web and mobile applications, enabling you to get through your development backlog.



## Efficiency

Effortless Dynamics 365, Office 365, and Azure integration. Remove your data siloes through low-code with Common Data Service and AI Builder.

# Take advantage of the opportunities together



65%

## App Development Backlog

65% of organizations report an app development backlog

37%

## Paper processes

37% of organizations are still using paper to manage critical business processes

69%

## Accelerate digital innovation and transformation

69% of organizations say that accelerating digital innovation & transformation is the number 1 reason they embraced low code application development

# Power Apps provides quantitative economic benefits for your organization compared to traditional development

70%

Less application development cost & effort

362%

Return on investment over 3-year term

Learn more at <https://aka.ms/TEIpowerapps>



# Tackle your mobile app backlog, like Virgin Atlantic

## Virgin Atlantic easily creates custom-built mobile applications with Microsoft Power Apps

The admin experience tied it all together  
– I was able to demonstrate governance for Power Apps, get buy-in from our IT operations management team, discover other Power Apps “developers in the organization, and start a community.”

– **Manuela Pichler, development manager**



# A platform for innovation

Less code. More Power. Faster Innovation



## Built in intelligence

Easily build, train, and publish AI models without writing a single line of code using pre-built or configurable templates and a guided process with AI Builder.

Outpace competitors by infusing your process automation with AI.



## All your data in one place

Data is at the core of every app. Access all the data you need with no silos.

Built-in connectivity to 300+ cloud services, files, databases, web APIs and on-premises sources.

Leverage the Common Data Service as your backend to drive transformation.



## Power Up creative thinking

Power Apps encourages cross organization collaboration between business, IT and Pro Dev, with IT in control, ensuring governance, compliance and security.

This partnership, drives creative thinking, & strategic, innovative approaches to solving problems.

## A platform for collaboration



- Doesn't low code & citizen development just drive shadow and rogue IT?

# There's more: Bring "shadow IT" into the light

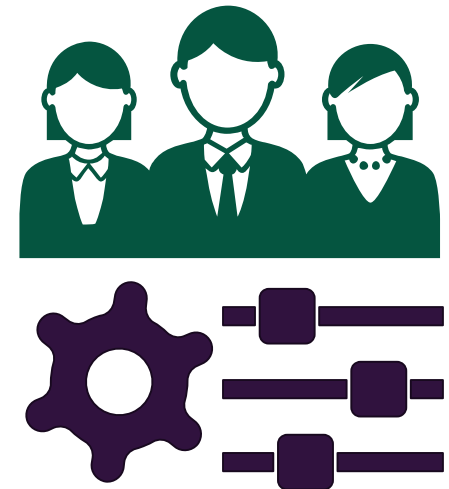
Shadow IT Developers



Unmanaged Tools



Citizen, or "Business Developers"



Managed Platforms

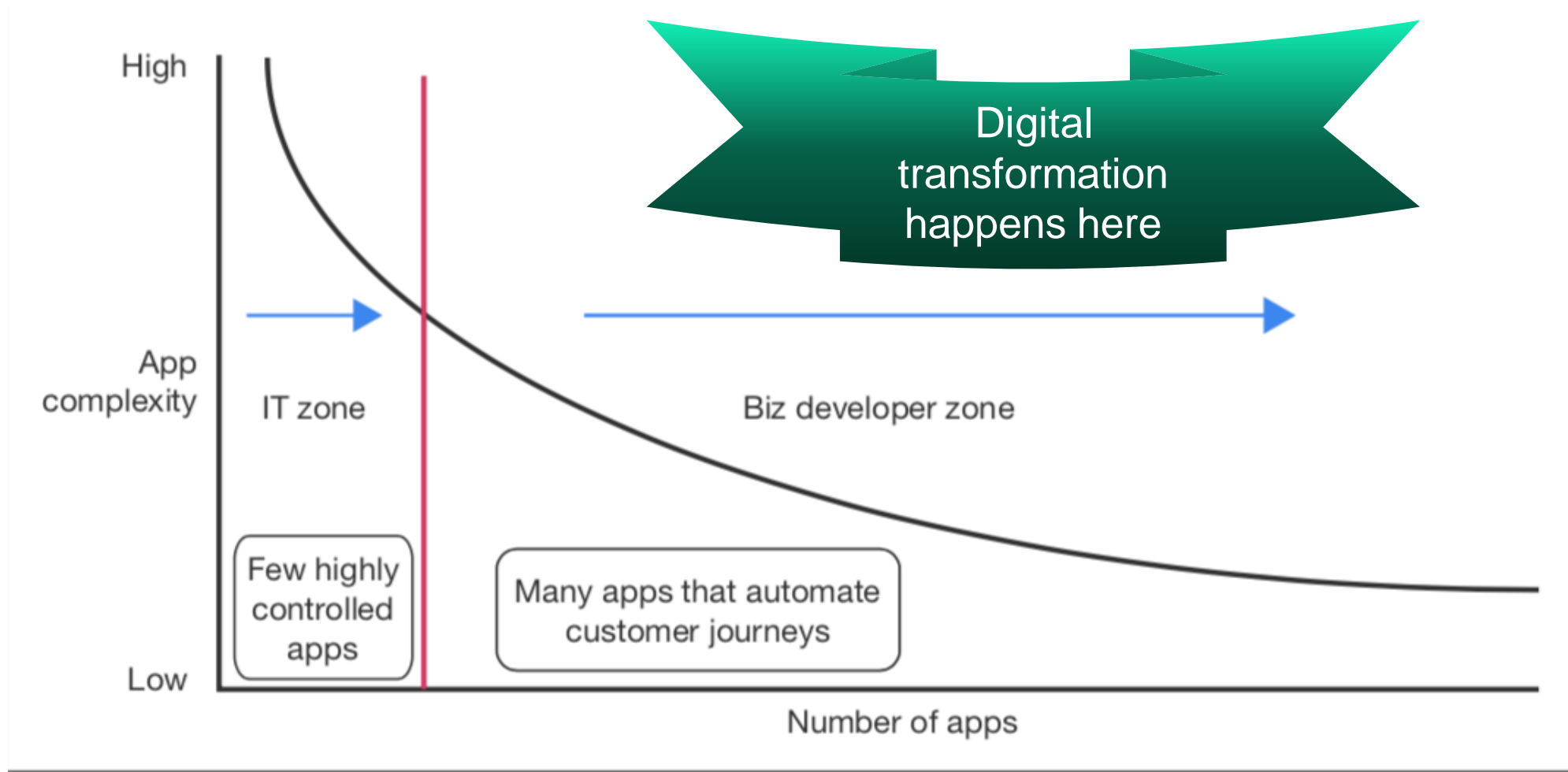
# Low-code market's 2 major segments

## Low-code platforms for AD&D pros

## Low-code platforms for business developers

Goal	Make pro devs more productive	Let business experts deliver apps
Target	AD&D leaders	Business leaders
Designed for	Expressive power & control	Simplicity
Use cases	Typically many	Typically few
App size	Medium-sized to large	Small to medium-sized
Crossover	Provides tools for business experts	Provides tools for AD&D & IT pros
Message	Prefers "low-code"	Prefers "no-code" or "codeless"

# Business developers are the key to digital strategies



Source: [Refocus Process Automation To Rescue Your Digital Transformation](#) Forrester report

# Microsoft Power Apps enables collaboration across organizations that drives innovation



Low code empowers this partnership to unlock innovation across organizations.



IT is an expert in security, governance, compliance, integrations & scalability.

101010  
010101  
101010

Pro Devs are experts at App dev & solution architecture



Business is an expert at solving business problems.

# Low-code is a platform for all makers

Citizen Developer, IT Administrator, Professional Developer



## Intuitive to use & easy to learn for Citizen Developers

Build apps fast with a point-and-click approach to app design. Choose from a large selection of templates or start from a blank canvas.

## One admin center to rule them all for IT

No compromises on governance and security. One centralized view and management of all your 1 & 3rd party apps, eliminating shadow IT.

## World class Pro Developer support and ALM

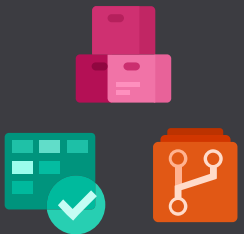
Experience the full range of development and ALM functionality with rich pro developer tools like Visual Studio and DevOps.

# Azure + Microsoft Power Platform

Build apps faster than ever before



Azure DevOps



Power Platform



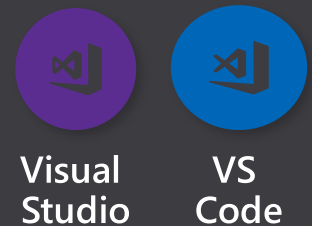
Every Developer

Azure services



Pro Developer

Azure Data Services



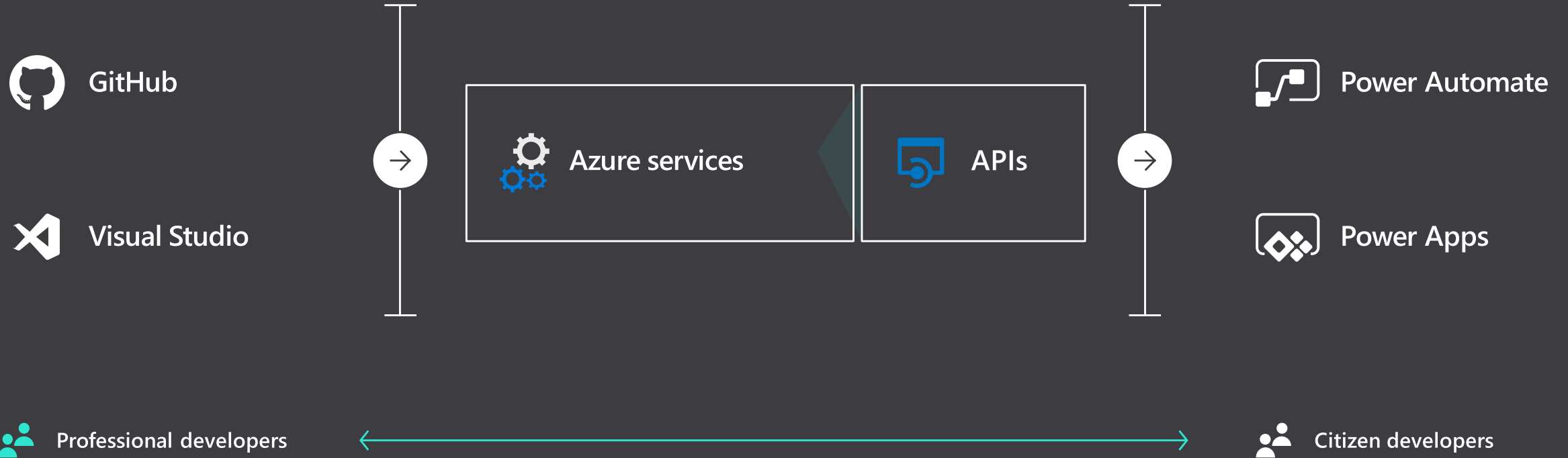
Visual Studio

VS Code

# Leverage Azure resources with Custom Connectors



Custom connectors allow professional developers to provide building blocks to citizen developers by publishing APIs and registering them with the Power Platform

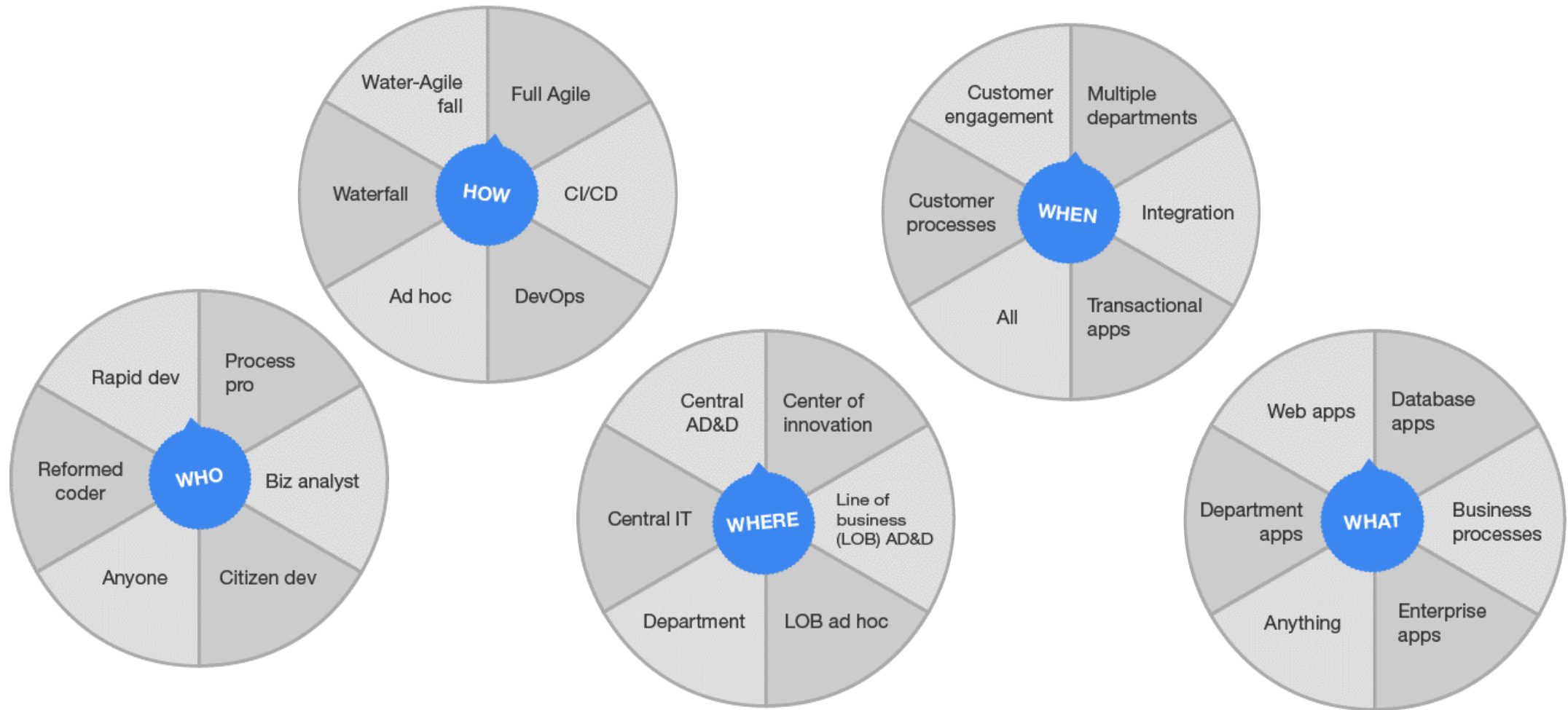


# Governing a low-code application development platform



- How should you govern low-code?

# Tune 5 policies to govern low-code



See the Forrester report [“Use A Light Touch To Govern Low-Code Development Platforms”](#).

# Power Apps Governance tools



- Engage IT
- Center of excellence

# None of this happens at scale without IT...



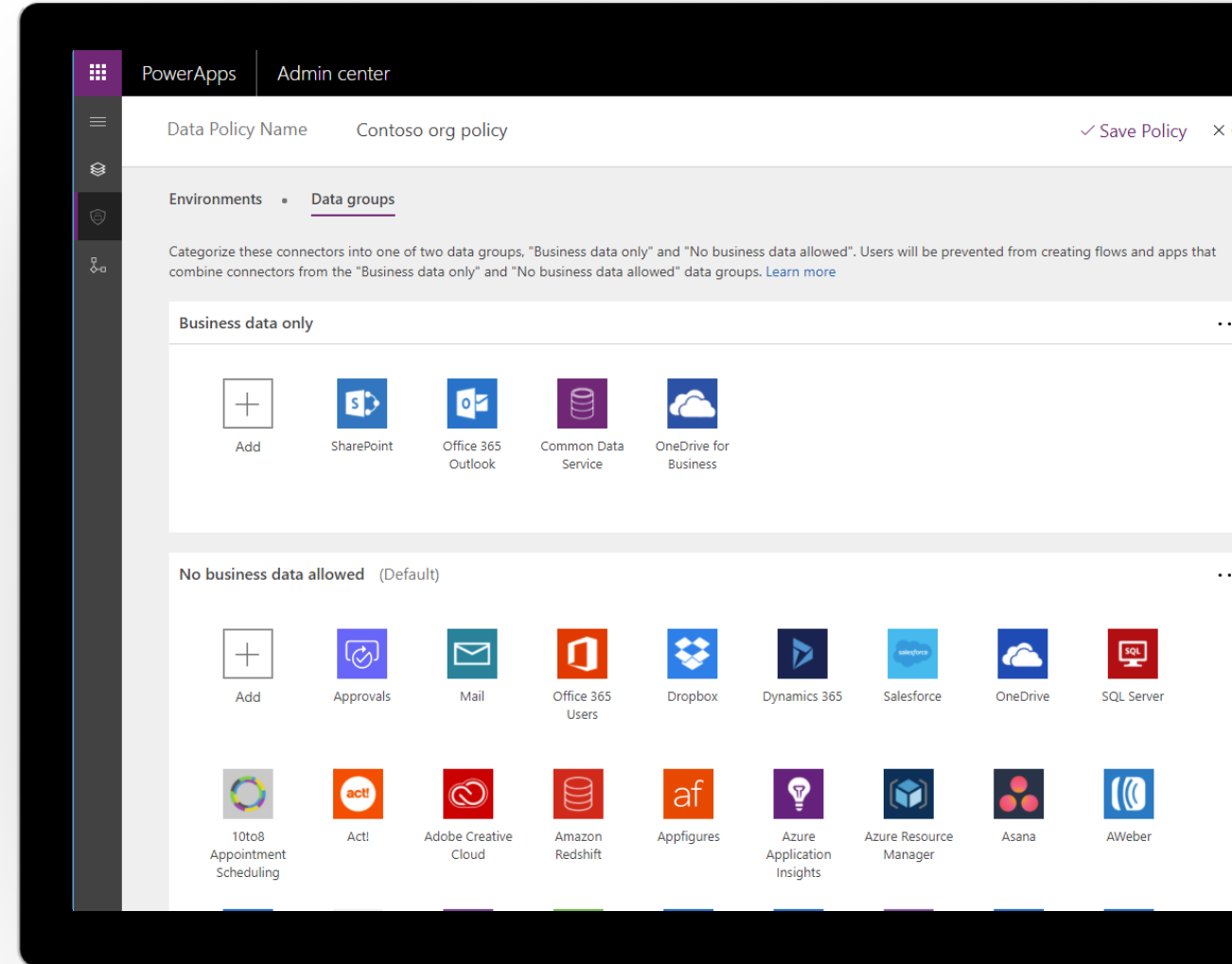
Centrally manage all your apps, first and third party, deployed across your organization



Admin Center providing full audit logs, usage analytics, data loss prevention, security and data management



All identity is managed through Azure Active Directory, enabling rich policies and multi-factor authentication



# COE Toolkit overview



The **PowerShell admin cmdlets**<sup>1</sup> provide PowerApps admins with **visibility** and **control** over their organization's usage of PowerApps and Flow. Most importantly, these cmdlets let admins of larger organizations **automate** their **application lifecycle management** and monitor the following areas:

- Environments and environment permissions
- PowerApps and app permission
- Flow and flow permissions
- Export and import of resource packages across environments
- PowerApps and Flow licenses report (of active users)

Learn more: <https://aka.ms/coepowerapps>

```
77     return $mergedJson
78 }
79
80 function Get-PowerAppsEnvironment
81 {
82     <#
83     .SYNOPSIS
84     Returns information about one or more PowerApps environments that the user has access to.
85     .DESCRIPTION
86     The Get-PowerAppsEnvironment cmdlet looks up information about one or more environments depending
87     Use Get-Help Get-PowerAppsEnvironment -Examples for more detail.
88     .PARAMETER Filter
89     Finds environments matching the specified filter (wildcards supported).
90     .PARAMETER EnvironmentName
91     Finds a specific environment.
92     .PARAMETER Default
93     Finds the default environment.
94     .EXAMPLE
95     Get-PowerAppsEnvironment
96     Finds all environments within the tenant.
97     .EXAMPLE
98     Get-PowerAppsEnvironment -EnvironmentName 3c2f7648-ad60-4871-91cb-b77d7ef3c239
99     Finds environment 3c2f7648-ad60-4871-91cb-b77d7ef3c239
100    .EXAMPLE
101    Get-PowerAppsEnvironment *Test*
102    Finds all environments that contain the string "Test" in their display name.
103    #>
104    [CmdletBinding(DefaultParameterSetName="Filter")]
105    param
106    (
```

<sup>1</sup> Preview / Subject to change

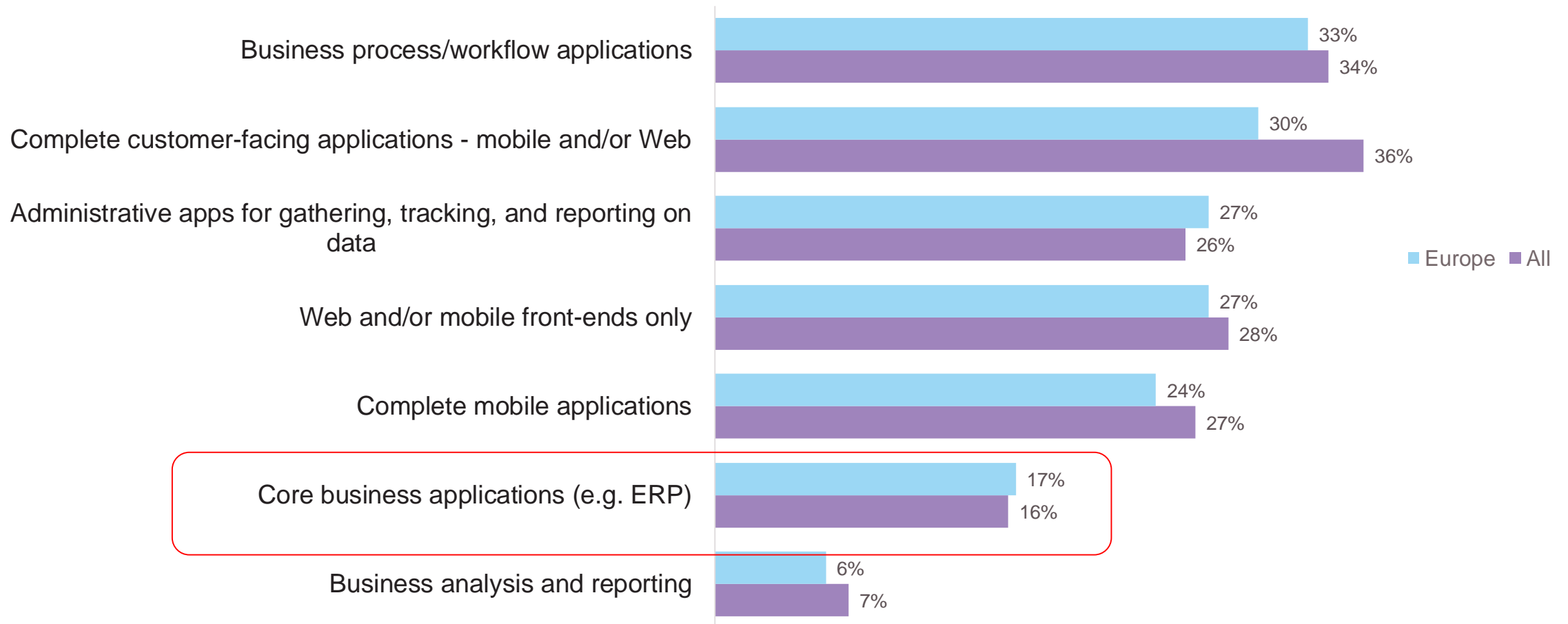
# Getting started with low-code application development platforms



- How do I get started?

# Low-code developers target many use cases

What types of apps do you primarily build with low-code tools?

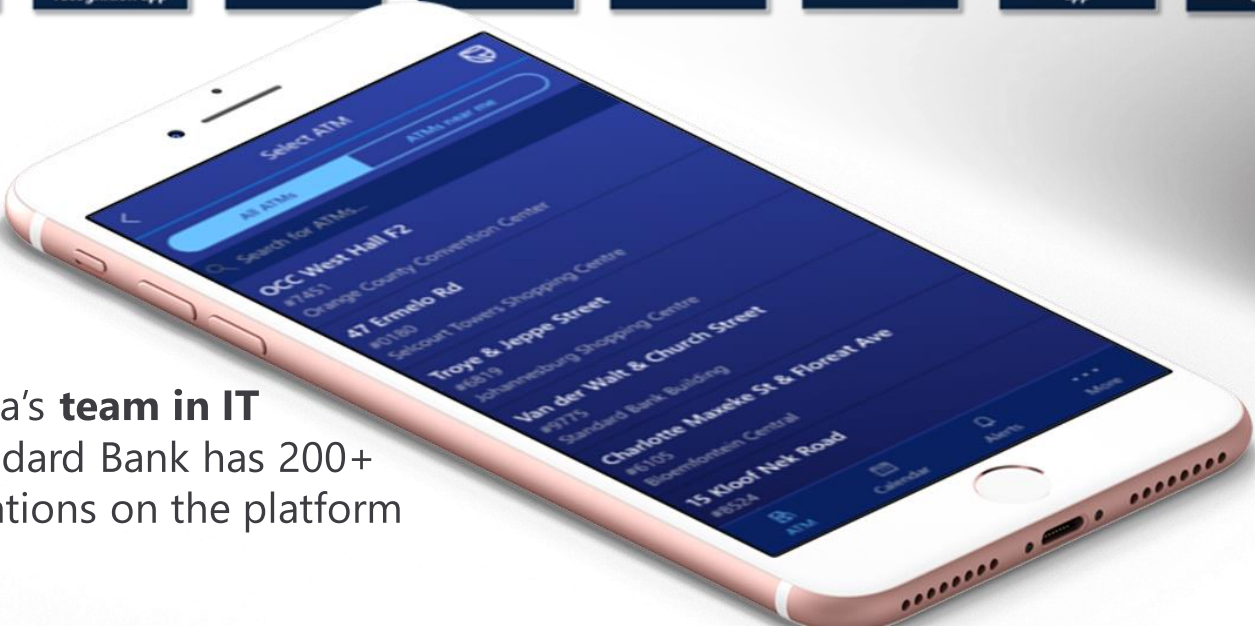
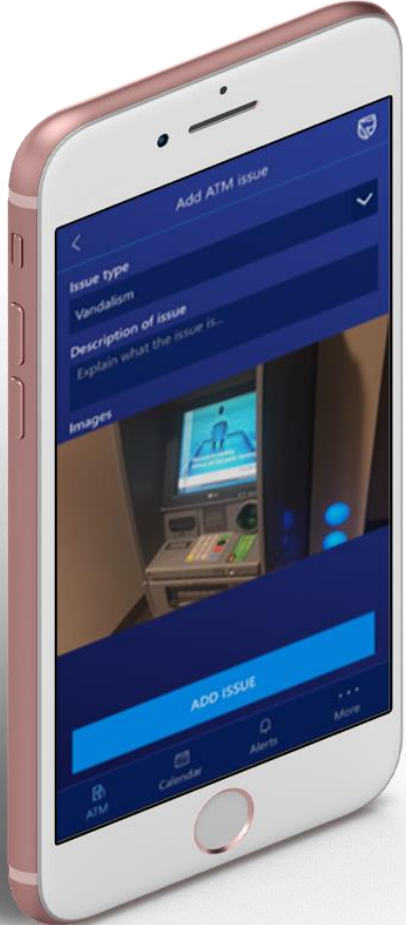


Bases: 1,645 global developers using low-code platforms; 619 in UK, France, Germany; 187 in Germany.  
Source: Forrester Analytics' Business Technographics Developer Survey, 2019.

# Digital Transformation @ Standard Bank



AR: Real estate financing	Cash devices: Get knowledge capture app	Capture App	Copy of advice app	Grow my money	IR Claims logging app	Audit: Heads up app	Office 365 User Requests
IB Proposal management	OSS: Staff recognition app	Tablet driven Brochure ware	CIB IT Service Dashboard	Group IT: Face to face app	O365 External Access Approval	IT Security: Privileged user access mgt	CSS: Innovation Station
Client onboarding trading desk	Group Compliance BU training app	Business Authorisation Forum app	ATM: Losses app	Group Tax: Withholding tax	GRES: Building services app	IT Security: External sharing	WiOnCall Strong Auth App
MIM daily alerts	Knowledge Management	Finance Conference 2018	MIM Start of Day Checks	Employee value banking : Onboarding app	Marketing document design	Marketing request mgt	Own IT: Sales tracking app
Marketing Briefing	OSS: Staff recognition app	GRG replatform	Client value transfers	OSS: Sys replacement	Sanctions desk: Referrals app	Cash devices: ATM auditor app	Asset management app



Vanessa's **team in IT** at Standard Bank has 200+ applications on the platform

# Digital Transformation @ Schlumberger

NOT a pro developer

Led a revolution of digital transformation at Schlumberger via adoption of Power Apps and Power Automate (5,000+ apps and 6,000+ flows)

Production Business Apps  
**50+**

Citizen Developers  
**120+**  
Across 32 countries

Time to train up a Citizen Developer  
**1~2 wk.**

Microsoft Power Platform

Power Apps



*Our customer quotes*

*Real success stories*

**Alan Chai - Schlumberger**

### Patch & Set

Saving 120 trees in 12 months

We gained >2000 hours of efficiency through a single app that replaces paper forms. The simplicity of Patch and versatility of Set helped create attractive forms which put user experience first. The resulting app not only looks and behaves like a native app but also drives high adoption rates, simplifies the way we work and generates value for our organization through productivity gains.

### Collections & Variables

Getting 10k people to stay active

Collections and variables enable boundless possibilities to perform in-app slice and dice of data. Thanks to these features, we can run a health campaign app to encourage 10k employees to keep an active lifestyle, and join in-app challenges within their business units. Collectively we have managed to run/walk/cycle more than 500k miles in a year, which is more than traveling to the moon and back.

### Power BI Integration

Generating \$7.5M free cash flow

The ability to embed PowerApps within a Power BI dashboard is a game changer that turns a passive report into an actionable dashboard. The feature has helped us track delays in billing of completed jobs by exposing data points coupled with trackable actions within the process. This has single-handedly generated \$7.5M free cash flow within one business unit alone.

# How can you get started?

<https://powerapps.com>



Accessible online learning for citizen developers, IT admins and professional developers.

Start learning today:

<http://aka.ms/learnpowerapps>



3 steps to your first app!

Get started free:

<https://aka.ms/startpowerapps>

See customer stories:

<https://aka.ms/customerspowerapps>

Attend app in a day:

<https://aka.ms/aiadpowerapps>





# Thank you.

**Charles Lamanna**

Corporate Vice President  
Citizen Application Platform

Guest Speaker **John R. Rymer**

Vice President/Principal Analyst  
Forrester Research

Microsoft Power Apps