

BUSINESS EXECUTIVES' DIGITAL TRANSFORMATION PLANS FALL SHORT OF GOALS

INTRODUCTION

Among the top priorities of many business leaders is to help usher their company into the digital age. And according to a recent Gartner survey, half of CEOs expect to see substantial digital transformation in their industries within five years, and many are therefore taking on this responsibility or delegating directly to their CIO.

However, there are many obstacles standing in the way of these forward-thinking leaders, including changing business requirements, complex technology and data integration, and drawn-out development cycles that stunt time-to-market delivery.

Appian wanted to hear directly from these business leaders to learn more about how far along they felt they are in this process and how they plan to deal with the associated obstacles. In April 2016, Appian sponsored an online survey conducted by YouGov among 422 business executives to better understand the elements that factor into digital transformation.

For the survey, the digital business transformation is defined using digital technologies solutions and software application platforms to improve corporate performance and competitiveness.

Business Executives were identified as U.S. senior executives (C-level, chairman, head of a division) working full or part-time at companies with \$1B or more in revenue in diverse industries, services, location, and work force size. The survey was fielded by YouGov.

RESEARCH HIGHLIGHTS

Business Executives Fall Short of Their Digital Transformation Goals

Only 14% of business executives have fully migrated to all intended areas of their digital business transformation plans (i.e. using digital technology solutions and software application platforms to improve corporate performance and competitiveness); Under half (48%) have migrated to some intended areas.

Custom Software is Viewed as Key to Achieving This Transformation, but Evolving Business Requirements, Complex Technology and Data Integrations and Long Development Cycles Stand in the Way.

While 69% of business executives surveyed believe custom software solutions are key to achieving digital transformation, barriers exist to embracing custom solutions. Among them:

- Constantly-evolving business requirements (38%);
- Integration across data sources (37%)
- Long development cycles (35%)

Business Executives also indicated the following concerns when it comes to their company's investment in technology: performance (55%), customer experience (48%), and flexibility of technological infrastructure (42%).

On-Going Maintenance of Software/Applications, Glitches in Software Applications/Too Many Application and Data Silos Among Top Three Technology Issues Hoping to be Addressed in 2016

Over one-third of Business Executives reported on-going maintenance of software/applications (37%) as a technology issue their company is hoping to address in 2016. About three in ten cited glitches in software/applications (31%) and too many application and data silos (28%) as technology issues their company is hoping to address in 2016.

What Are Business Executives Hoping to Accomplish Through Digital Transformation? Data Management, Enterprise-Wide Collaboration, and Custom Software Solutions.

The top three priorities enabling business transformation are data management (43%), enterprise wide collaboration (33%) and custom software solutions (31%).

This is followed by hybrid cloud solutions (25%), broad enterprise mobility (25%) and agile software development (24%).

Business Executives Believe Increases in Employee Engagement and Improved Customer Journey Are Possible with Custom Software

Nearly seven in ten (72%) business executives believe custom software is strategically important to customer and employee engagement, per the survey.

Custom software improves the customer journey. Custom software apps equals a personalized customer experience with three in four business executives (75%) agreeing.

Most Business Executives Familiar with Custom Software

Nearly three-quarters (73%) of Business Executives were familiar with custom software.

Custom Software Trumped Pre-Packaged Software on Nimbleness

Over six in ten (63%) Business Executives agreed that custom software is more nimble than pre-packaged software.

Pre-Packaged Software Has Limited Benefits and Too Rigid for Business Needs

Nearly six in ten (58%) Business Executives reported pre-packaged vendor application software has limited benefits.

Over half (53%) believe pre-packaged vendor application software is too rigid for their company's business needs.

Operational Efficiency, Employee Efficiency, and Reducing Operational Costs Top Three Drivers for Developing Custom Software Applications

Business Executives most commonly reported operational efficiency (44%), employee efficiency (43%), and reducing operational costs (41%) as drivers for developing custom software applications for their company.

Other drivers Business Executives indicated for developing custom software applications for their company included:

- Ability to make enhancements (30%)
- Enterprise collaboration (26%)
- Uniqueness of work processes (25%)
- Agility (25%)
- Product innovation (23%)
- Mobile technology adoption in the enterprise (20%)
- Customer acquisition/retention (19%)
- Broad enterprise mobility (17%)
- Internet of Things technology adoption in the enterprise (10%)
- Wearable technology in the enterprise (7%)

Custom Software Applications = Personalized Customer Experience

Three in four Business Executives (75%) reported custom software applications enable a personalized customer experience.

Business Executives most commonly reported performance (45%), ease of use/use interface (39%), efficiency (39%), integration (38%), and data security (37%) as needs their company could address by custom application development.

Other needs Business Executives indicated their company could address by custom application development include:

- Compliance (31%)
- Mobile accessibility (21%)
- ROI (19%)
- Customer retention (19%)
- Time to market (15%)

METHODOLOGY

This survey was conducted online within the United States by YouGov on behalf of Appian, between April 1-12, 2016, among 422 business executives identified as U.S. senior executives (C-level, chairman, head of a division) working full or part-time at companies with \$1B or more in revenue in diverse industries, services, location, and work force size.

Audience	N=	Field Period
Business Executives	422	April 1-12, 2016

Data has been rounded, so 'select one' questions = 100%. Whereas, 'select all that apply' questions will add to over 100%.

Segments outlined in report:

Audiences	N=
Total Business Executives	422
Business Executives at companies with under \$10B in revenue	176
Business Executives at companies with \$10B or more in revenue	246

An asterisk (*) next to a number indicates it is significantly higher than the comparative group.

A (NET) is an unduplicated view at the number of respondents that selected designated attributes [e.g., Migrated NET]. Indented text below a response is the definition that was provided to respondents.

Responses are ranked by Total Business Executives column.

CORE QUESTIONS

The following set of questions aims to understand your perspectives as a business executive.

1. How familiar, if at all, are you with each of the following? *Please select one option on each row.*

Top 2 Box [Very/Somewhat Familiar]	Total	Company Revenue Under \$10B	Company Revenue \$10B or More
n=	422	176	246
Custom software	73%	70%	74%
Digital business transformation	53%	48%	57%
Hybrid cloud	52%	47%	55%

2. Which, if any, of the following are you concerned about when it comes to your company's investment in technology? *Please select all that apply. You can see a definition of one of the terms by holding your mouse over it.*

[Randomized]	Total	Company Revenue Under \$10B	Company Revenue \$10B or More
n=	422	176	246
Any (NET)	87%	86%	88%
Competitiveness/Competitive Advantage (NET)	48%	45%	50%
ROI/Time to Market (NET)	46%	46%	46%
Data security	62%	62%	62%
Performance	55%	54%	56%
Customer experience	48%	47%	50%
Flexibility of technological infrastructure	42%	39%	44%
Competitive advantage	37%	35%	39%
ROI	37%	36%	37%
Competitiveness	28%	27%	29%
Time to market	22%	21%	22%
Pace of digital business transformation <i>Definition: Using digital technological solutions and software application platforms to improve corporate performance and competitiveness</i>	16%	14%	18%
Other	3%	1%	5%*
Not sure	6%	7%	6%
None	7%	7%	6%

3. Which, if any, of the following technology issues is your company hoping to address in 2016? Please select all that apply. You can see a definition of one of the terms by holding your mouse over it.

[Randomized]	Total	Company Revenue Under \$10B	Company Revenue \$10B or More
n=	422	176	246
Any (NET)	77%	79%	76%
On-going maintenance of software / applications	37%	39%	35%
Glitches in software / applications	31%	31%	31%
Too many application and data silos	28%	27%	28%
Inflexibility of software / applications	25%	24%	25%
Weak data security	24%	28%	22%
High cost of software / application development	24%	24%	24%
Applications that are difficult to use / not intuitive	22%	16%	26%*
Slow time to market / deployment of new applications	19%	16%	21%
Limited mobile access / functionality	19%	16%	20%
An application with a limited use lifespan	11%	11%	11%
Other	6%	5%	8%
Not sure	17%	15%	19%
None	6%	6%	5%

The following set of questions is about digital business transformation, i.e., using digital technological solutions and software application platforms to improve corporate performance and competitiveness.

4. Which ONE of the following BEST describes your company's status in its migration to digital business transformation? *Please select one.*

	Total	Company Revenue Under \$10B	Company Revenue \$10B or More
n=	422	176	246
Migrated (NET)	62%	59%	65%
Migrated/Planning to Migrate (NET)	74%	75%	74%
Not Migrated (NET)	15%	18%	12%
Fully migrated in all intended areas	14%	10%	17%
Already migrated in some intended areas but not all	48%	49%	48%
Not migrated at all, but planning to migrate within the next 5 years	12%	16%*	9%
Not migrated at all and not planning to migrate in the foreseeable future	3%	2%	3%
Not sure	23%	23%	23%

5. Which, if any, of the following are your company's priorities in enabling digital business transformation? *Please select all that apply. You can see a definition of each term by holding your mouse over it.*

[Randomized]	Total	Company Revenue Under \$10B	Company Revenue \$10B or More
n=	422	176	246
Any (NET)	69%	69%	69%
Enterprise data management <u>Definition:</u> The ability to precisely define, easily integrate, and effectively retrieve data for both internal applications and external communication	43%	38%	46%
Enterprise collaboration <u>Definition:</u> The use of systems to facilitate efficient sharing of documents and knowledge between teams and individuals	33%	31%	34%
Custom software solutions <u>Definition:</u> Software applications that must be built by a company's internal IT team (or through outsourced development) because the required functionality cannot be purchased through a packaged software	31%	31%	31%
Hybrid cloud solutions <u>Definition:</u> Single solution with cloud and on-premise components	25%	24%	26%
Broad enterprise mobility <u>Definition:</u> Business applications and data are seamlessly accessible anywhere regardless of location, on desktops or mobile devices such as smartphones, tablets, wearables, etc.	25%	21%	28%
Agile software application development <u>Definition:</u> Development approaches in which requirements and solutions evolve through collaboration and rapid iterative releases	24%	20%	27%
Pre-packaged software applications <u>Definition:</u> Commercial "off the shelf" software applications that are standard manufactured products, not custom or bespoke solutions	19%	17%	20%
Public cloud solutions	15%	11%	18%

Definition: All solution components hosted in the cloud			
Discrete mobile apps Definition: Single-purpose apps that do not share data or users	15%	12%	17%
Other	4%	2%	5%
Not sure	28%	29%	27%
None	3%	2%	4%

The following set of questions is about custom software, i.e., software applications that must be built by a company's internal IT team (or through outsourced development) because the required functionality cannot be purchased through a pre-packaged software (also called a commercial off-the-shelf, or COTS, software) offering.

6. Which, if any, of the following are drivers for developing custom software applications for your company? *Please select all that apply. You can see a definition for some terms by holding your mouse over them.*

[Randomized]	Total	Company Revenue Under \$10B	Company Revenue \$10B or More
n=	422	176	246
Any (NET)	77%	75%	79%
Operational Efficiency/Product innovation/Customer Acquisition, Retention (NET)	60%	57%	63%
Employee Efficiency/Reducing Operational Costs (NET)	55%	50%	58%
Operational efficiency	44%	39%	48%
Employee efficiency	43%	39%	45%
Reducing operational costs	41%	38%	43%
Ability to make enhancements	30%	32%	28%
Enterprise collaboration Definition: The use of systems to facilitate efficient sharing of documents and knowledge between teams and individuals	26%	24%	26%
Uniqueness of work processes	25%	24%	26%
Agility	25%	24%	25%
Product innovation	23%	22%	24%
Mobile technology adoption in the enterprise	20%	22%	19%
Customer acquisition / retention	19%	21%	18%
Broad enterprise mobility Definition: Business applications and data are seamlessly accessible anywhere regardless of location,	17%	15%	18%

on desktops or mobile devices such as smartphones, tablets, wearables, etc.			
Internet of Things technology adoption in the enterprise <i>Definition:</i> Leveraging data from smart devices and sensors in business processes	10%	9%	11%
Wearable technology in the enterprise	7%	6%	8%
Other	3%	1%	4%
Not sure	20%	23%	18%
None	3%	2%	3%

7. Which, if any, of the following are challenges in creating custom software applications for your company's digital business transformation? *Please select all that apply.*

[Randomized]	Total	Company Revenue Under \$10B	Company Revenue \$10B or More
n=	422	176	246
Any (NET)	73%	73%	73%
Constantly-evolving business requirements	38%	38%	38%
Integration across required data sources	37%	36%	38%
Long development cycles	35%	28%	39%*
Lack of communication between business and IT	27%	22%	30%
Applications are hard to adapt / update over time	27%	24%	29%
Enabling enterprise collaboration	22%	24%	20%
Solutions are hard to use / not intuitive	19%	14%	22%*
Other	4%	4%	4%
Not sure	24%	25%	23%
None	3%	2%	4%

8. To what extent do you agree or disagree with each of the following statements? *Please select one option on each row.*

Top 2 Box Agree [Strongly/Somewhat] [Randomized]	Total	Company Revenue Under \$10B	Company Revenue \$10B or More
n=	422	176	246
Custom software applications enable a personalized customer experience	75%	77%	74%
Custom software is strategically important to customer and employee engagement	72%	68%	75%
Custom software is strategically important to digital business transformation	69%	68%	70%

9. To what extent do you agree or disagree with each of the following statements? *Please select one option on each row.*

Top 2 Box Agree [Strongly/Somewhat] [Randomized]	Total	Company Revenue Under \$10B	Company Revenue \$10B or More
n=	422	176	246
Custom software is more nimble than pre-packaged software	63%	60%	65%
Pre-packaged vendor application software has limited benefits	58%	57%	58%
Pre-packaged vendor application software is too rigid for my company's business needs	53%	52%	54%

10. Which, if any, of the following needs could your company address by custom application development?
Please select all that apply.

[Randomized]	Total	Company Revenue Under \$10B	Company Revenue \$10B or More
n=	422	176	246
Any (NET)	78%	79%	78%
Compliance/Time to Market/Customer Retention (NET)	47%	50%	45%
ROI/Time to Market (NET)	28%	28%	28%
Performance	45%	40%	48%
Ease of use / use interface	39%	35%	42%
Efficiency	39%	38%	39%
Integration	38%	41%	36%
Data security	37%	34%	39%
Compliance	31%	30%	33%
Mobile accessibility	21%	20%	22%
ROI	19%	20%	19%
Customer retention	19%	23%	16%
Time to market	15%	14%	15%
Other	5%	3%	5%
Not sure	19%	18%	20%
None	3%	3%	2%