STATE OF IBM i MODERNIZATION 2017

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EXECUTIVE SUMMARY

The IBM i (aka AS/400 and iSeries) market has seen some remarkable changes over the last decade. New capabilities, including graphical user interfaces and support of open source languages, have ensured that the platform is more than capable of supporting the needs of today's businesses.

However, the use of these modern capabilities on IBM i varies from business to business. "Modernization", the umbrella term for utilizing the newest capabilities on IBM i - including transitioning from green screens to web GUIs, and updating legacy RPG source code to a newer format or open source language - has not been universally embraced.

For the second year in a row, Profound Logic reached out to the IBM i community to take part in the **"State of IBM i Modernization"** survey. The purpose of the survey is to attempt to uncover how widely businesses have adopted modernization, and gauge what their plans are for the platform in the future.

The response rate for this year's survey surpassed last year's by 20%, with over 500 IBM i professionals taking the survey. The survey asked respondents a range of questions based on their role in the business (technical, business management, or both). The survey was broken up into three sections: Current state of IBM i; Current attitudes toward IBM i; and, Future of IBM i in the business. The analysis of the findings was conducted by IBM i Champions and community experts.

Survey Findings

A positive finding in this year's survey is that more businesses have upgraded to the latest versions of IBM i and RPG compared to last year. Those companies that are remaining on the platform are embracing the many options they have to optimize IBM i for their modern enterprise: Web GUIs, mobile development, and Open Source development are all listed as projects businesses took on in 2017.

Another finding is that more businesses have shifted slightly away from in-house development and toward packaged applications. The downside to this development is that the majority of those applications either entirely or partially use green-screen interfaces, which respondents list as a roadblock to developer and end-user productivity.

Compared to last year, confidence in the future of the platform appears to have taken somewhat of a downturn. More respondents are concerned that their management's negative view of the IBM i will stand in the way of future use, let alone any modernization efforts. And more respondents this year believe that their business doesn't see a future at all in the platform.

Based on the total responses, it appears that, while some companies have solidified their decision to leave the platform, even more companies have doubled down on the platform and embraced making it a modern powerhouse for future business development.

Recommendations

If your business plans to remain on the IBM i, now is the time to give your system a health check. IBM releases frequent technology refreshes, and if you're running on an OS older than version 7.3, you should seriously consider an update.

IBM i also supports the capabilities that many businesses need, if the responses to this survey are any indicator. Cloud, IoT, Open Source development, Mobile - all of these can be accomplished with IBM i.

Once again, respondents to this survey listed "outdated green screens" and "diminishing developer pool" as top concerns about IBM i. The good news here is that both of these problems can be easily addressed. With the right tools, green screens can be transformed into modern web and mobile interfaces, and new developers can start working on IBM i more easily with Free Format RPG or Node.js, which is JavaScript (the most popular development language in the world) and supported on IBM i.

Unfortunately, many respondents still struggle with a poor perception of the platform as a roadblock for future development. Rather than look at this as a challenge, we encourage developers to make the case for the IBM i by listing the many benefits of the platform singled out in this survey, including: stability, security, ease of use, and ease of maintenance.

We will continue to monitor the attitudes and trends in the IBM i community over the next year, and will release a "2018 State of IBM i Modernization" survey. Until then, we hope this glimpse into the current attitudes of IBM i professionals is beneficial to your company!

CURRENT STATE OF IBM i

What version of IBM i are you using?

7.3	34%	7.1	11%
			< 5.4

7.3

34%

7.1

11%

< 5.4

14%

7.2

54%

6.1

8%
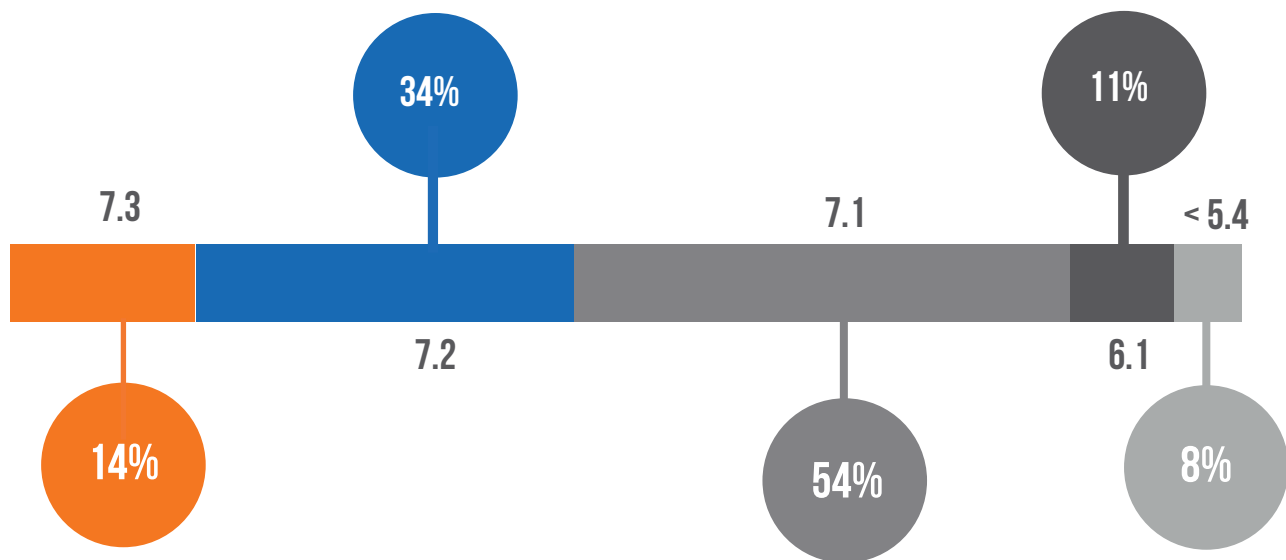
FINDINGS:

- Compared to last year's survey, there has been a significant shift toward newer releases of the IBM i platform. In addition to 14% adopting the latest release (v7.3), there has been a 12% increase in the use of v7.2.

- Older versions of IBM i have seen somewhat of a decrease in use: v7.1 is down 12% since the last survey, v.6.1 is down 4%, and v5.4 and earlier is down 1%.

- It can be extrapolated that the businesses that use IBM i more heavily to run business applications have invested in updating to a newer version, while those at the other end of the spectrum have seen little need to make the upgrade. There is still a significant portion of users who remain on an outdated version of the platform.
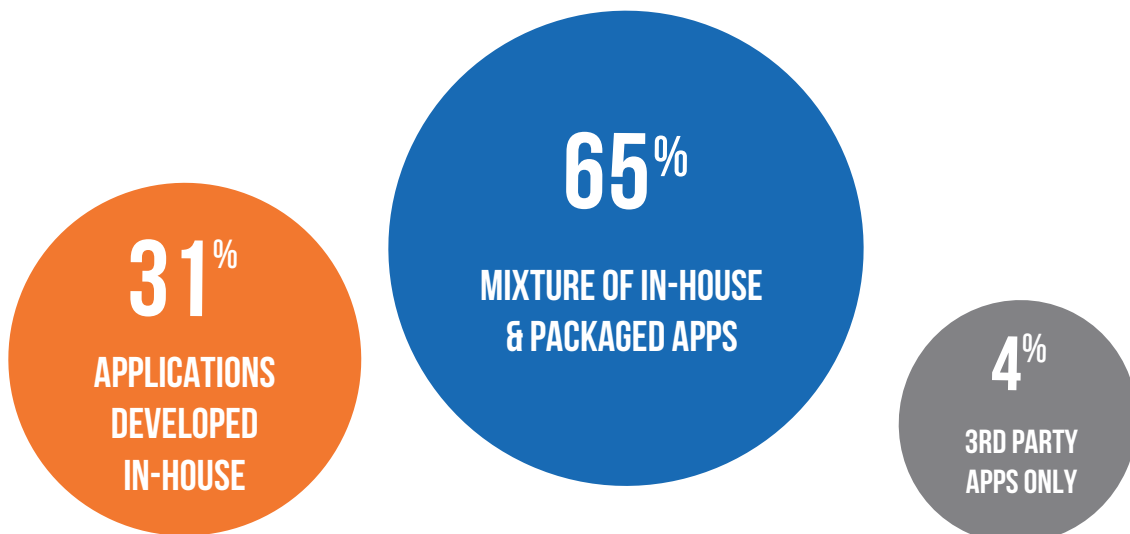
CURRENT STATE OF IBM i

FINDINGS:

What percentage of your business applications run on the IBM i platform?

100%	**13%**
50-99%	**63%**
25-49%	**13%**
5-24%	**7%**
< 5%	**4%**
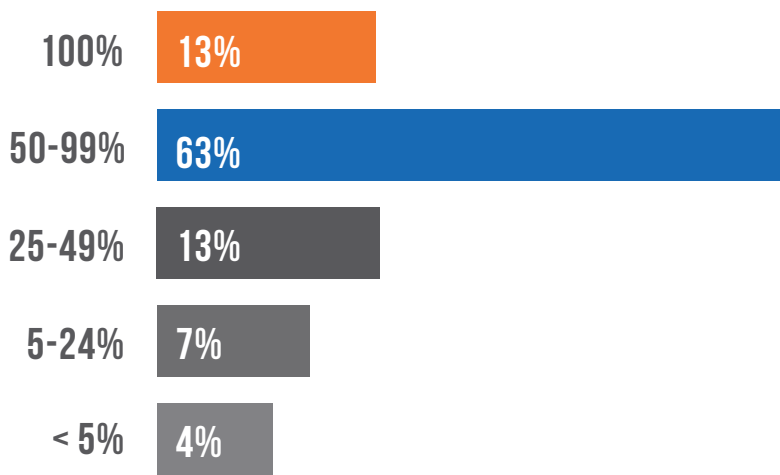
- The responses to this question are virtually unchanged from last year, with a 1% increase in the "100%" and "5-25%" categories.

- This shift from the middle to the edges, however slight, may signify some businesses gaining more confidence in the platform, while others have started to move away from it.

- Additionally, a slightly larger percentage of users have 3rd party applications running on their IBM i now compared to last year. Businesses may be turning to packaged apps instead of investing in in-house development.

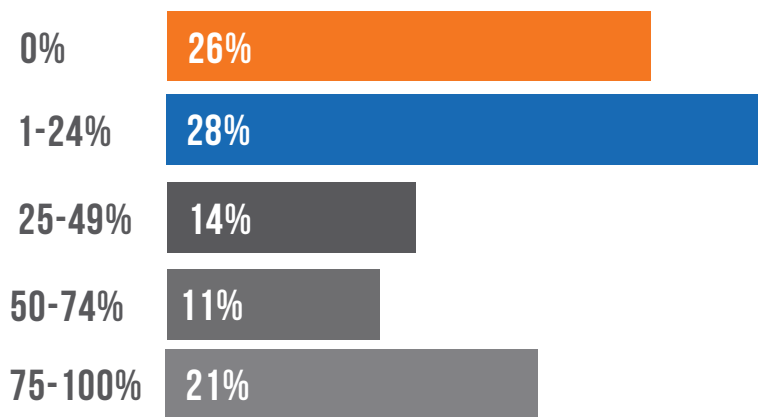## Which of the following types of applications are used by your company?

**31%** APPLICATIONS DEVELOPED IN-HOUSE

65% MIXTURE OF IN-HOUSE & PACKAGED APPS

4% 3RD PARTY APPS ONLY

CURRENT STATE OF IBM i

What percentage of your third-party applications use a graphical user interface (GUI)?

0%	26%
1-24%	28%
25-49%	14%
50-74%	11%
75-100%	21%

FINDINGS:

- The number of packaged applications running in green screens has increased by 10% compared to last year.

- A much greater percentage (20% increase) of users said they have a combination of green screen *and* GUI interfaces for their packaged applications.

Which programming languages are you currently using in your development?

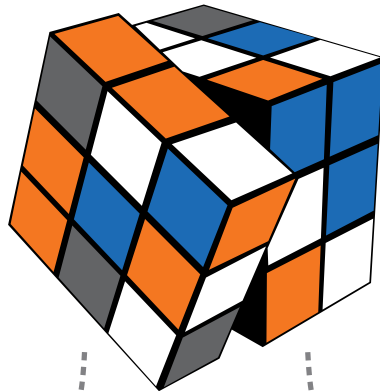|	
FREE FORMAT RPGLE	79%
FIXED FORMAT RPGLE	61%
RPG III	48%
JAVA	28%
PHP	19%
COBOL	12%
NODE.JS	4%
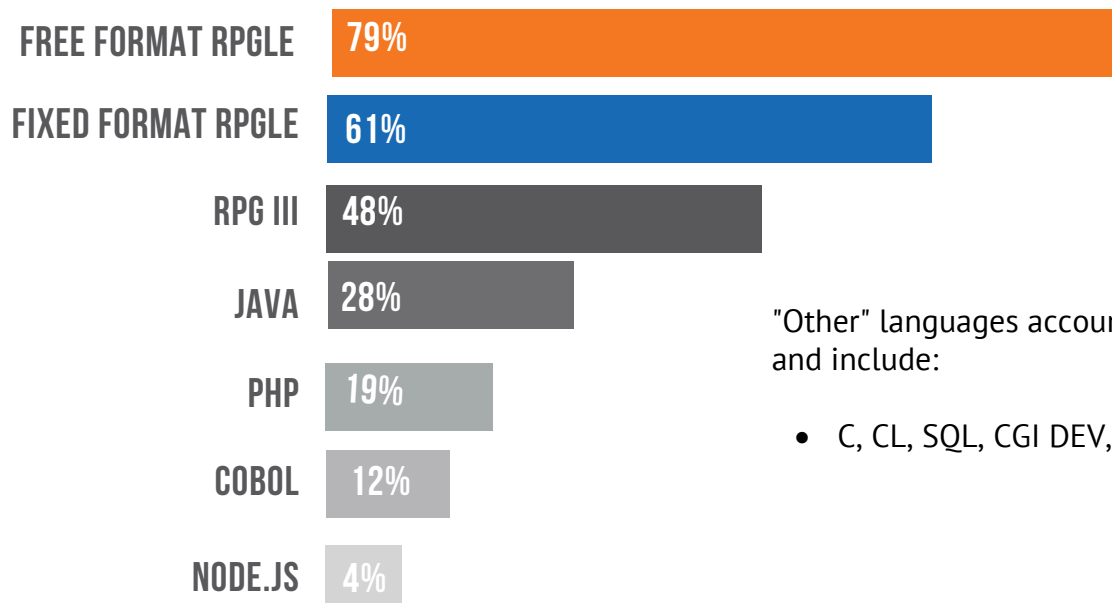
"Other" languages account for 22% of responses, and include:

- C, CL, SQL, CGI DEV, Python, and RPGsp

CURRENT ATTITUDES TOWARDS IBM i

What are the biggest challenges associated with your IBM i?

MOST COMMON

- Outdated UI
- Diminishing developer pool
- Legacy source code
- Lack of management confidence in the platform
- Lack of budget for new tools
- Need more support for Open Source development

NOTEABLE

- Lack of IBM marketing or support for the platform
- Price of tools for platform
- Lack of a native GUI
- Developers' unwillingness to upgrade GUI or code

FINDINGS:

The challenges faced by IBM i users in the last survey have largely remained the same year over year. Many of the most common challenges - including green screens, outdated and hard-to-manage code, and lack of RPG developers - can actually be addressed and resolved in a number of ways, and are by no means a "dead end" for the platform.

Additionally, modern capabilities like support for mobile, cloud, and open source languages, including Node.js, are supported on IBM i. A noteable challenge - lack of marketing - may be a significant reason why many IBM i users are unaware of the modern development options now available to them on the platform.
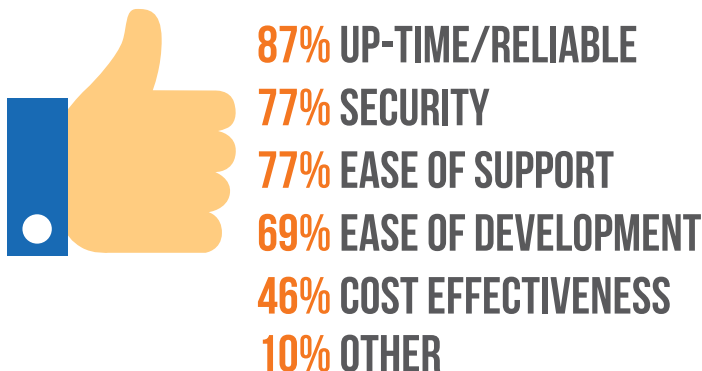
CURRENT ATTITUDES TOWARDS IBM i

What is the upper-management view of IBM i in your business?

36% POSITIVE

NEUTRAL **37%**

27% NEGATIVE
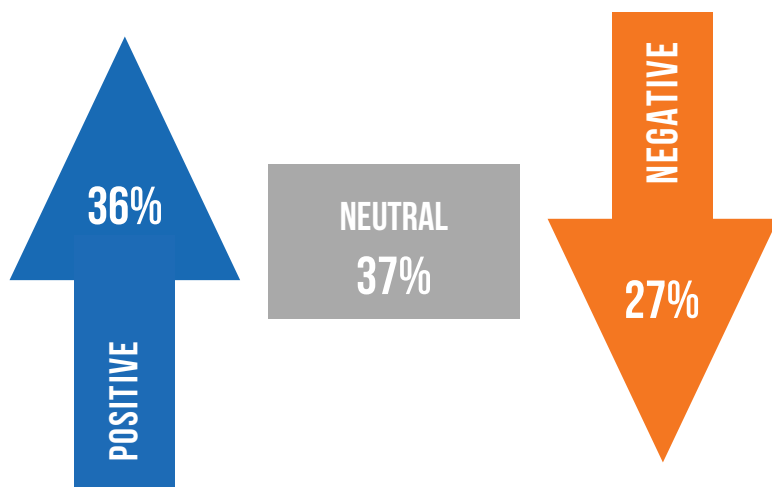
FINDINGS:

- Again, the needle hasn't moved much compared to last year's results, with only a 1% change in either direction.

- There is a slight increase in the number of "neutral" responses - showing that there is untapped potential to prove the benefits of the platform to their management.

- Once again, respondents in this year's survey overwhelmingly stated that they find the IBM i stable, secure, easy to support, and easy to use.

What are the qualities you appreciate about the IBM i platform as a developer?

87% UP-TIME/RELIABLE
77% SECURITY
77% EASE OF SUPPORT
69% EASE OF DEVELOPMENT
46% COST EFFECTIVENESS
10% OTHER

FUTURE OF IBM i IN THE BUSINESS

What changes did you make to your team in 2017?

21%
HIRING NEW DEVELOPERS

67%
SIZE OF TEAM WILL REMAIN THE SAME

**15%**
DOWNSIZING TEAM

FINDINGS:

- While the average team size of RPG developers hasn't changed much since 2016, the number of new developers being hired for the platform has decreased by 3%. The amount of outsourced development has also decreased by 2% year over year. The number of developers leaving the platform due to retirement or lack of development remains steady.

- These numbers show that there is still room for growth in IBM i development shops. Options can include IBM i hiring boards, intern programs, or development in JavaScript (i.e. Node.js) which is the most popular coding language in the world.
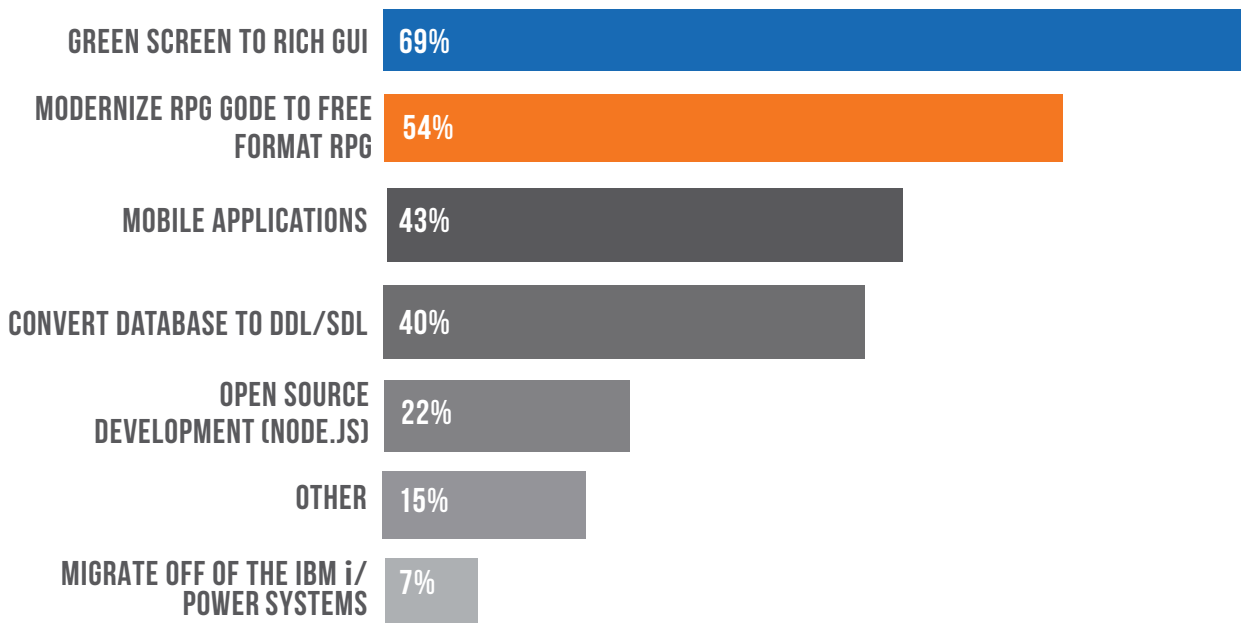
FUTURE OF IBM i IN THE BUSINESS

Did you have plans to modernize your IBM i in 2017?

40% YES

18% NO

42% UNSURE
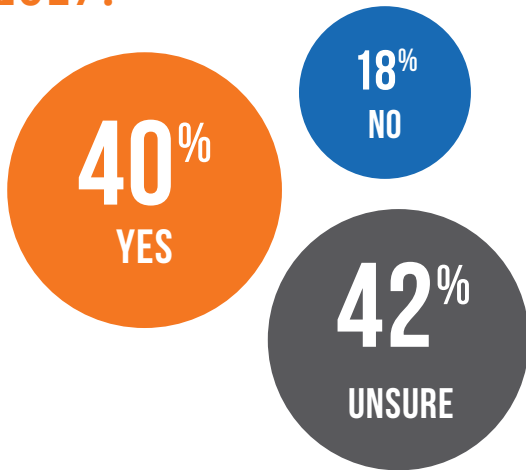
FINDINGS:

- The most significant change in 2017's responses is the number of businesses that planned to modernize their applications - down 10% from last year.

- This year, the need to modernize source code beat out mobile applications, but modernizing green screens remained a priority.

Which IBM i modernization projects took priority in 2017?

Project	%
GREEN SCREEN TO RICH GUI	69%
MODERNIZE RPG CODE TO FREE FORMAT RPG	54%
MOBILE APPLICATIONS	43%
CONVERT DATABASE TO DDL/SDL	40%
OPEN SOURCE DEVELOPMENT (NODE.JS)	22%
OTHER	15%
MIGRATE OFF OF THE IBM i/ POWER SYSTEMS	7%

FUTURE OF IBM i IN THE BUSINESS

What's holding you back from modernizing your IBM i?

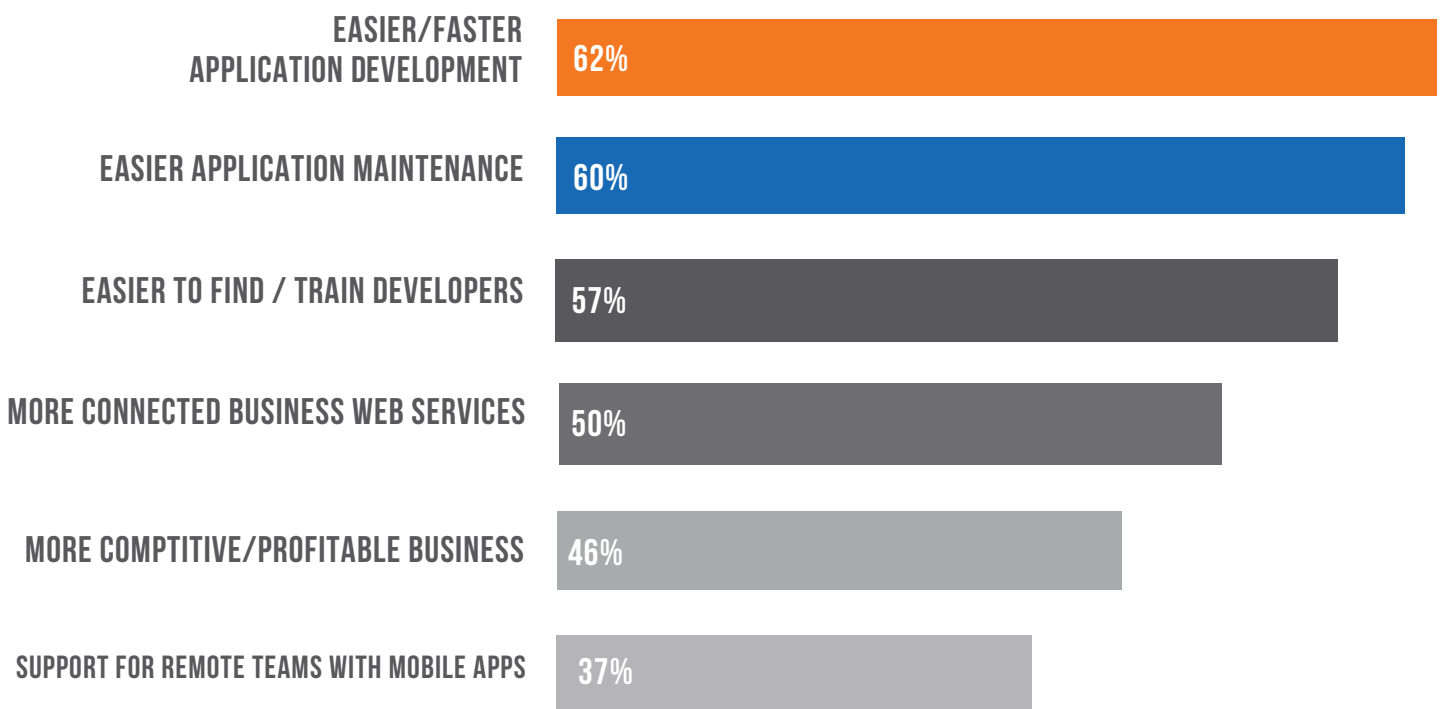|	
MANAGEMENT OBJECTIONS	26%
COST	17%
LACK OF RESOURCES	15%
LACK OF TIME	9%
NO NATIVE IBM i GUI	7%
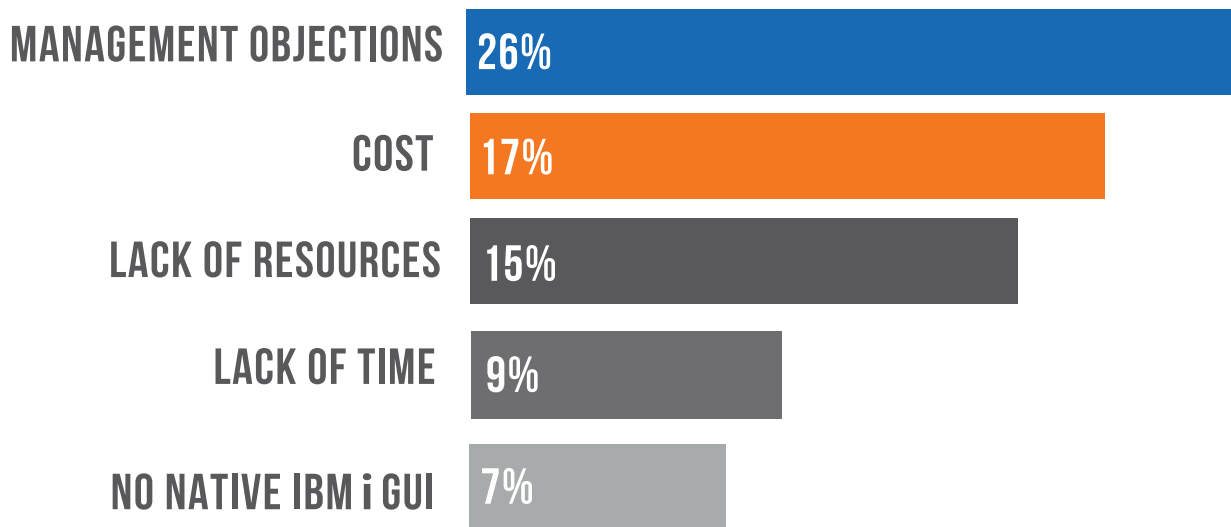
"OTHER" - 26%

FINDINGS:

- This year, we categorized many of the common causes for modernization roadblocks, and unsurprizingly "management objections" topped the list, followed by "cost and "lack of resources.

- We also encoraged respondees to enter an "other" reason why they haven't modernized. Reasons include:
    - Lack of confidence in the future of the platform
    - Migration off of the platform
    - Inability to calculate ROI

FUTURE OF IBM i IN THE BUSINESS

How would a modern IBM i environment improve your business?

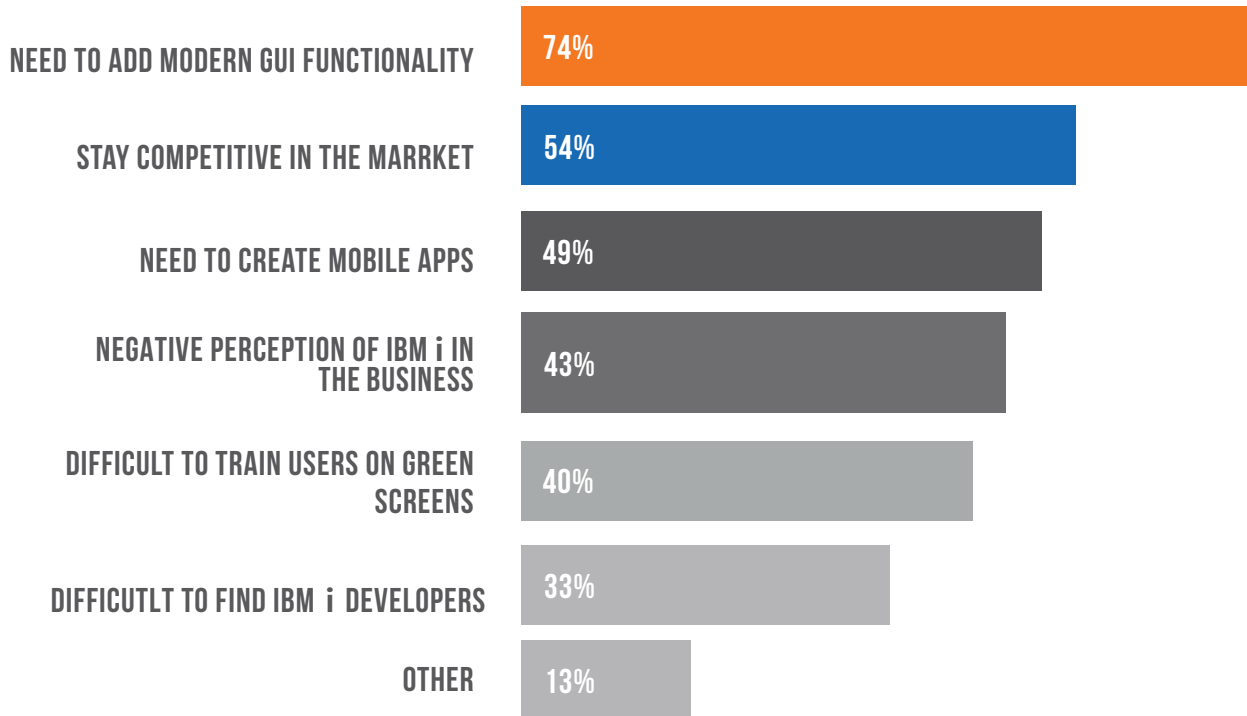|	
EASIER/FASTER APPLICATION DEVELOPMENT	62%
EASIER APPLICATION MAINTENANCE	60%
EASIER TO FIND / TRAIN DEVELOPERS	57%
MORE CONNECTED BUSINESS WEB SERVICES	50%
MORE COMPTITIVE/PROFITABLE BUSINESS	46%
SUPPORT FOR REMOTE TEAMS WITH MOBILE APPS	37%

FINDINGS:

While slightly more businesses this year indicated they wouldn't attempt modernization, those who did discovered a vast amount of benefits, including easier development, easier maintenance, and an easier time finding new developers for the platform

FUTURE OF IBM i IN THE BUSINESS

What are your reasons for modernizing your IBM i environment?

Reason	Percentage
NEED TO ADD MODERN GUI FUNCTIONALITY	74%
STAY COMPETITIVE IN THE MARRKET	54%
NEED TO CREATE MOBILE APPS	49%
NEGATIVE PERCEPTION OF IBM i IN THE BUSINESS	43%
DIFFICULT TO TRAIN USERS ON GREEN SCREENS	40%
DIFFICUTLT TO FIND IBM i DEVELOPERS	33%
OTHER	13%

"OTHER" RESPONSES INCLUDE:

"We are always modernizing to remain future-proof"

"To better integrate with other systems"

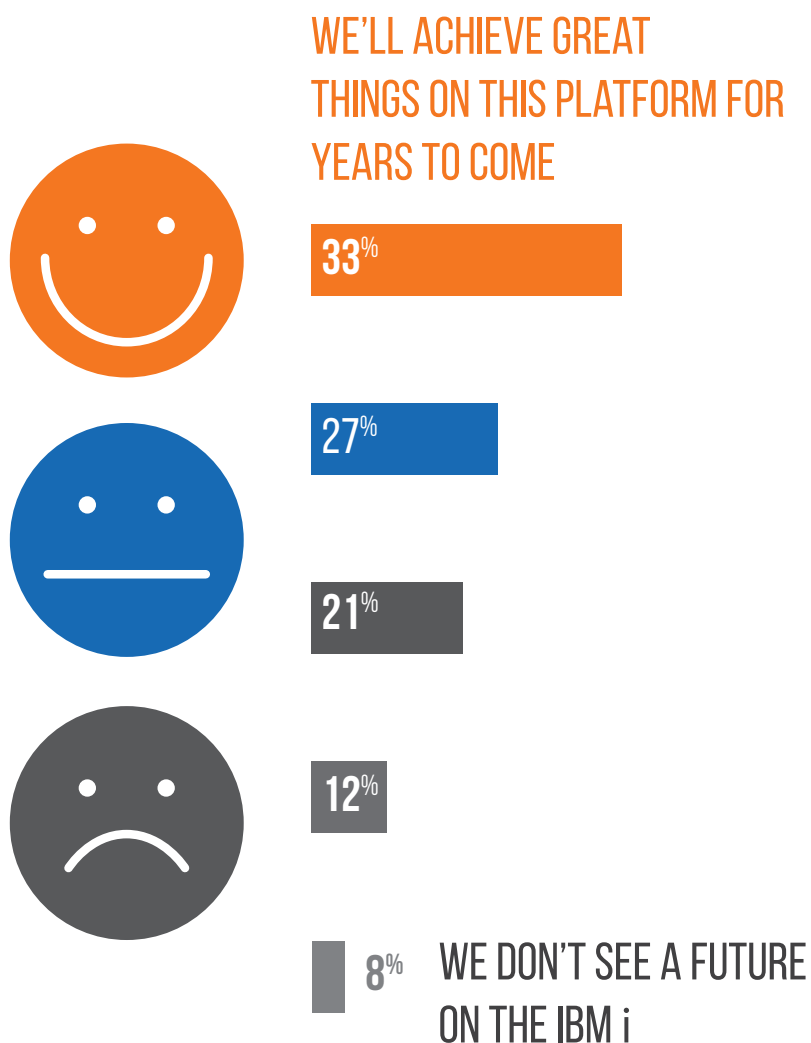"To improve efficiency and decrease maintenance"

FINDINGS:

- "Stay competitive" is a new option we added this year and turned out to be one of the major driving forces for modernization.

- Compared to the previous survey, 13% fewer respondents believe that the need to modernize is based on a negative perception of the platform.

FUTURE OF IBM i IN THE BUSINESS

How optimistic are you about the future of the IBM i in your business?

WE'LL ACHIEVE GREAT THINGS ON THIS PLATFORM FOR YEARS TO COME

33%

27%

21%

12%

8% WE DON'T SEE A FUTURE ON THE IBM i

FINDINGS:

- Although close, results are less promising than last year.

- Fewer companies see a future on the platform - confidence has slipped and tipped the scales toward "No future" by 3%.

- Still, more than half of all respondents believe that their IBM i has a bright future in their business.

ABOUT THE SURVEY

The 2017 State of IBM i Modernization survey ran in early 2017 and was promoted through email, Website ads, and articles in trade publications such as IT Jungle and MC Press Online. The goal of the survey was to take the "temperature" of the current attitude toward the platform in businesses, and what, if any, plans the respondent's business have for modernizing the platform.

TECHNICAL OPERATIONS
51%

**BUSINESS/ STRATEGIC MANAGEMENT**
**6%**

BOTH TECHNICAL AND BUSINESS OPERATIONS
43%

501 professionals responded to the survey. 51% of respondents identified as being mainly involved in development or technical operations regarding the IBM i. 43% identified themselves as being involved in both technical and business operations, and 6% identified themselves as being mainly involved in business and strategic management.
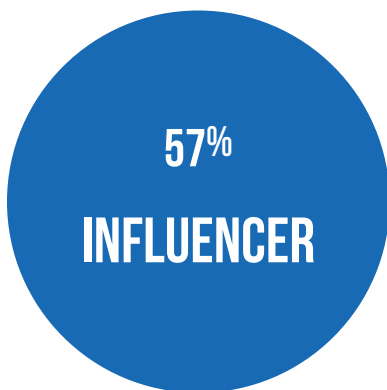
When asked about their role in the software purchasing process, the majority of respondents indicated that they were an "influencer" (57%), followed by "decision-maker" (21%), and "no role" (17%).

57%
INFLUENCER

17%
NO ROLE

21%
DECISION MAKER

26% of this year's respondents fell into the SMB category, coming from companies with 1-100 employees, and 24% with 100-500 employees. 16% indicated they came from a company with 500-1000 employees, and 34% from companies with 1000-5000+ employees.
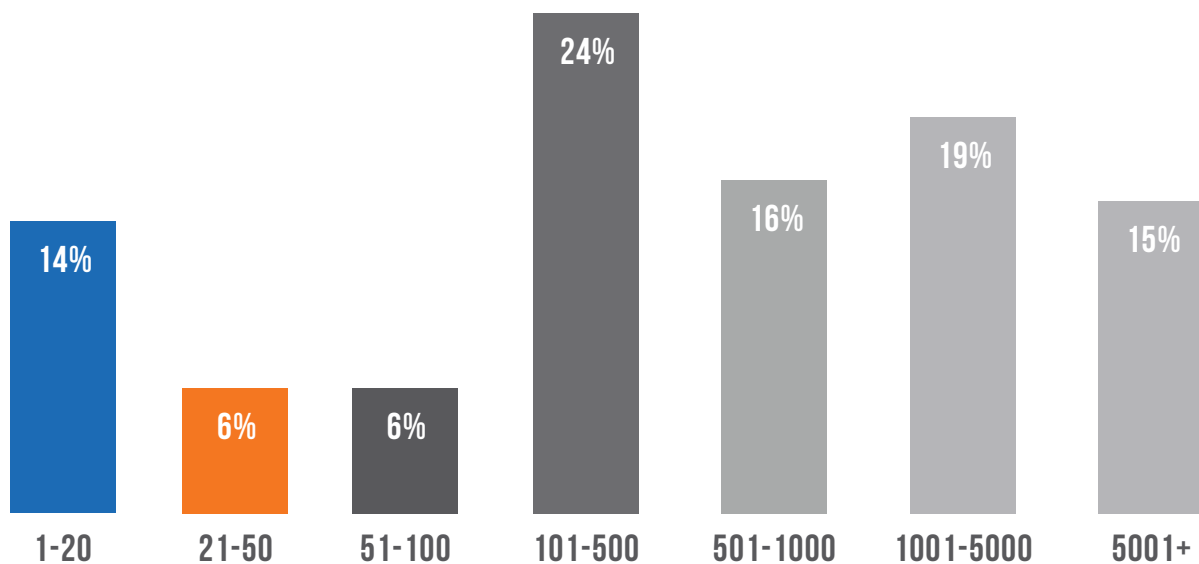
About Profound Logic Software

At Profound Logic, our mission is to provide the most innovative and native solutions for IBM i application development and modernization. For over 15 years, we have helped thousands of customers around the world transform legacy interfaces and source code; develop modern desktop and mobile applications; and optimize enterprise systems. Our developers are true IBM i experts, fluent in modern languages that include RPG, PHP, HTML5, and Node.js.

We have offices in Ohio, California, and Mississippi, in addition to partners located around the world. Learn more at www.profoundlogic.com or contact us at 877-224-7768.

For questions regarding this survey, please contact info@profoundlogic.com.

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