

## White Paper

# The Quantified Business Benefits of Modernizing IBM Z and IBM i to Spur Innovation

Sponsored by: Rocket Software

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## IDC OPINION

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This IDC White Paper was initiated to objectively determine whether businesses that run mission-critical workloads on IBM Z and IBM i and that are trying to make a strategic decision about their future technologies should remain on these platforms and modernize them leveraging all the innovative tools that exist today to do so or whether they should replatform by moving to an alternative on-premises solution or to the cloud.

IDC executed this study by investigating more than 440 businesses around the world that have either modernized on IBM Z or IBM i or replatformed and by then comparing them on a large number of factors. What we found across the platforms is that "modernizers" incurred lower costs for their modernizing initiative than replatformers for their replatforming effort, even if they invested the same amount in new hardware; that modernizers were across the board more satisfied with the many new capabilities of their modernized platform than replatformers; and that modernizers achieved a new baseline in which they paid less for hardware, software, and staffing while substantially increasing their revenue.

These results demonstrated unequivocally that businesses that remain on what are sometimes referred to as "legacy" platforms and that take advantage of the plethora of hardware and software innovations that have been made available for those platforms have an overall better outcome, quantitatively and qualitatively, than those that move off them.

## METHODOLOGY

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IDC conducted a survey across multiple countries in April 2020, with a total of 446 respondents – 207 of them represented businesses that have moved off a legacy platform and replatformed and 239 of them represented businesses that remained on their legacy platform and invested in modernization, including in new hardware generations of the platform. The survey was conducted across the following countries: Australia, India, New Zealand, the United Kingdom, and the United States. The respondents' businesses represented 31 different industries. Table 1 represents the number of survey respondents per platform and total.

Company sizes were fairly evenly distributed among midsize and larger companies, but there were fewer respondents from the smallest and the very largest companies (500-999 or more than 10,000 employees). Respondents were CTOs or CIOs, executives, or directors in IT or application development. The survey was branched into two segments of businesses that modernized on or replatformed off an IBM Z ("mainframe") or IBM i (sometimes referred to as AS400).

For each platform, respondents who modernized had to have at least three specific modernization initiatives in progress or completed. Respondents reported that their initiatives were, on average, 65% completed. Replatformers had to indicate which replatforming strategy they had followed. For both IBM Z and IBM i, the most common replatforming approaches were hardware emulation with lift and shift to vendor emulator software (50.7%) and middleware emulation with adaptation and recompilation of code/programs/applications to a third-party emulator (30.4%).

IDC also conducted in-depth interviews with five businesses that had either modernized on or replatformed off their IBM Z or IBM i.

**TABLE 1**

**Respondents per Platform**

	Modernizers	Replatformers
IBM Z	144	109
IBM i	95	98
Total	239	207

Source: IDC, 2020

**SITUATION OVERVIEW**

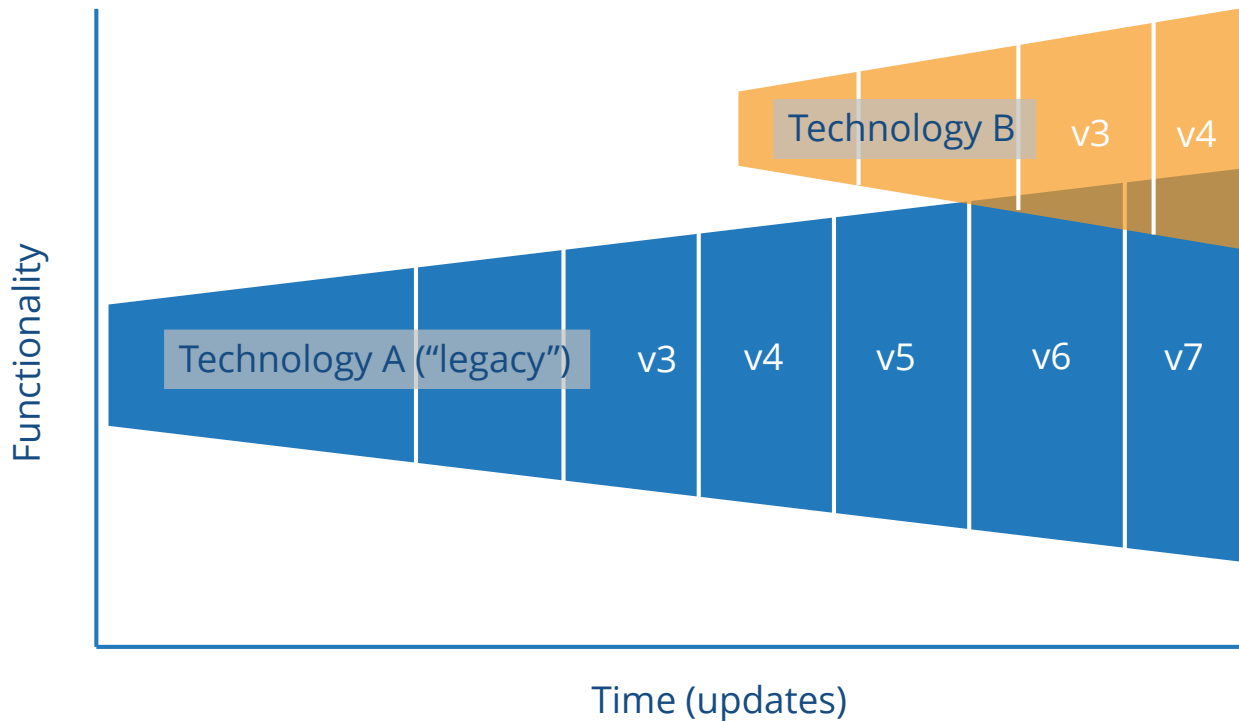
**What Is a "Legacy" Platform?**

This study discusses modernizing versus replatforming on the following two platforms: IBM Z and IBM i. These platforms are routinely referred to as legacy platforms. IDC, however, considers the term *legacy* as somewhat confusing in this context. Legacy is used to refer to a technology that is still operational despite the fact that a logical descendant of that technology exists. It implies that new technology B is an update of existing technology A, incorporating and expanding on the functionality of A. Nowadays, however, legacy is often used to refer to A even though B is not a logical descendant of A. For example, an IBM Z is described as being legacy in relation to a younger compute platform, even though the functionalities of the younger system are quite different (and more limited so that they cannot serve all the needs that an IBM Z fulfills, such as transaction volumes and security requirements).

Figure 1 shows the evolution of technology A over time (x-axis), going through updates that broaden its functionality (y-axis), and the launch and evolution of technology B. Technology B has some overlapping functionality with technology A, and it has some new functionality, but it does not incorporate all of A's functionalities. Technology B is therefore not a logical descendant of A, and A is not legacy in relation to B. Indeed, technology A continues to evolve in parallel with B, adopting many of the same functionalities as B. Note that Figure 1 also illustrates the implicit risk element of replatforming. Rather than the functionality expansion continuity with technology A, the jump to technology B involves abandoning functionalities, switching functionalities, and adding new functionalities on a new platform – three factors that contribute to the overall higher risk factor of replatforming.

FIGURE 1

The Evolution of "Legacy" and "New" Technologies



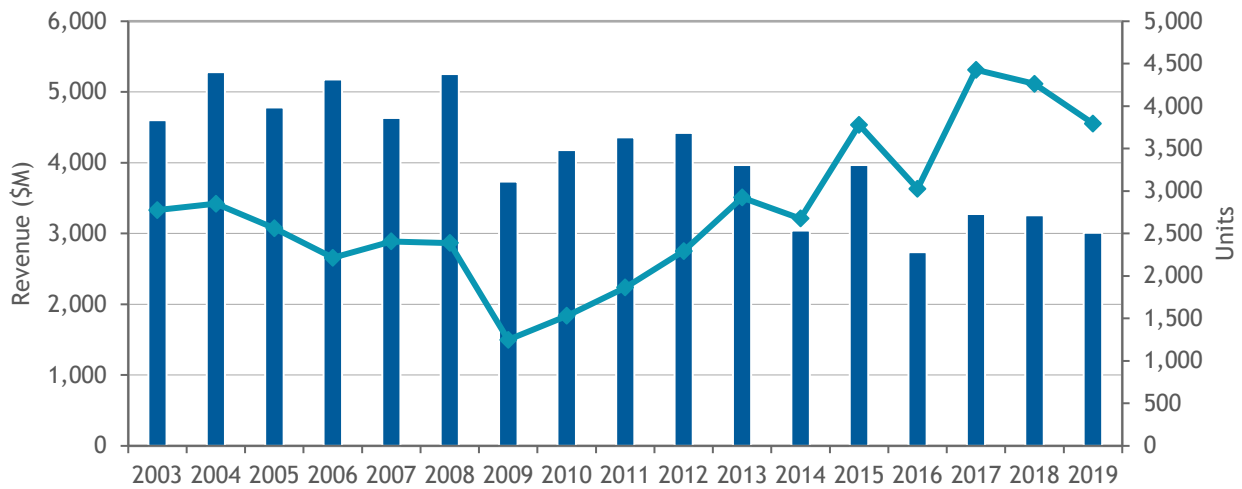
Source: IDC, 2020

Another common use of legacy is for platforms with a longer history that have seen a sales decline. It is, mistakenly, assumed that this correlates with a relevance decline. Technology A may have seen a sales decline, but its functionality may well have expanded and its relevance – for a smaller market segment – increased. The impending death of the mainframe, for example, has been predicted as early as in the 1990s (see "Just How Dead Is the Mainframe?" *The New York Times*, June 28, 1992). Thirty years later, IBM Z is a modern platform that delivers workload capacity, scale, and security for massive inventory, financial, and other volume transactions that still no other solution can match, including SaaS. Indeed, IBM in 2Q20 earnings results reported a 68% year-over-year revenue increase for IBM Z.

The assumption that there is a sales decline for a legacy system is often mistaken. Figure 2 shows the – highly cyclical – sales trajectory of IBM Z since 2003, with the line depicting unit sales. With every new generation (which is about every two years), the platform has reached a new high in terms of unit sales, at a lower price point – to the benefit of customers.

**FIGURE 2**

**Worldwide IBM Z ("Mainframe") Market Revenue and Units, 2003-2019**



Source: IDC, 2020

In summary, IDC does not consider the IBM Z and IBM i platforms – which are the subject of this study – as legacy systems. Rather, they are modern systems with a long history that continue to evolve.

It should be noted, however, that IDC has found that there is a significant degree of unawareness in the market regarding the modern characteristics of these platforms. One IBM Z replatformer stated that the company was unaware of the IBM Z hybrid cloud capabilities, for example. Another business that replatformed off IBM i said it had never upgraded its IBM i from 2007 to 2017 and that it had not stayed up to date on new IBM i technologies. The company was unaware of how the platform evolved over those 10 years and based its replatforming effort on. As one representative stated: "The perception is that this is old technology; it's time has passed."

"IBM Z is very important (...). To kind of shock and reload or to reinvent the wheel would have been extremely costly and time prohibitive for us."  
 – IBM Z modernizer

## Two Modern Platforms and How They Are Used Today

### IBM Z

IBM Z is an enterprise-class hybrid cloud platform for extremely high-volume, high-performance online transaction processing (OLTP) and online analytical processing (OLAP) with maximum levels of security and availability. The latest generation – IBM z15 – can run up to 19 billion encrypted transactions per day, which is close to 220,000 transactions per second. The platform runs its own operating system (OS) z/OS as well as Linux and supports a host of open source solutions, including Ansible and Red Hat OpenShift with Cloud Paks, which are software products prepackaged in containers and integrated into OpenShift services for easy deployment. Security is achieved with pervasive encryption built into the chip and with Privacy Passports that secure the data when it moves "off platform." High availability is such that the system is considered to be a rare Availability Level (AL) 4 by IDC, the highest designation and the equivalent of fault tolerance even in the event of a physical disaster. IBM Z continues to be at the heart to the world's financial, retail, healthcare, and transportation industries.

## IBM i

IBM i is based on a radically different approach to designing an OLTP platform, in that the virtualization software, the transaction software, the database, and the application servers are an integral part of the operating system. The OS takes care of installing, integrating, deploying, optimizing, and managing the applications. As a result, the IBM i platform is extremely low maintenance even as it runs critical applications for banks, financial services, and other industries that need to securely process large data volumes. Thanks to an integrated security module in the OS, it is nearly impossible for malicious code to affect the applications. The majority of open source code can run unchanged on IBM i, and there is an open source community that compiles open source software for the platform. The IBM i hardware is based on IBM Power Systems, a high-performance, high-availability hardware platform built around the same POWER9 processors as used for Summit and Sierra, number 2 and 3, respectively, of the global TOP500 supercomputers.

"We have done modernization on the IBM i – analytics and AI on a hybrid cloud, using it for IoT, microservices, mobile enablement, and open source."  
– IBM i modernizer

## Misconceptions About Modernizing on or Replatforming off the Two Platforms

This IDC study measures the implications of either modernizing on an IBM Z or IBM i versus moving off that platform. Owing to the pressures of digital transformation (DX), many businesses – that for years have been served well by these platforms – have to decide whether they should update them, adopting the latest hardware, functionalities, and ecosystem capabilities such as hybrid cloud with OpenShift and Ansible, AI, and modern open source languages to these platforms, or look to acquire similar functionalities on a different platform. As discussed previously, replatforming will typically yield new functionalities while losing (or having to compensate for) existing ones; modernizing, on the other hand, means retaining existing functionalities while expanding to adopt new functionalities (refer back to Table 1). The results of the study debunked two common misconceptions.

### *Misconception 1: Replatforming Will Result in a Much More Capable Platform*

IDC found that businesses that replatformed were, across the board, less satisfied with the functionalities of the new platform. Before discussing these satisfaction rates, it is useful to understand what the destinations were for the replatformers:

- The top 3 destinations of IBM Z replatformers are distributed x86 servers in their datacenter, scale-up x86 servers in their datacenter, and distributed x86 servers at a managed services provider (SP).
- The top 3 destinations of IBM i replatformers are distributed x86 servers in their datacenter, scale-up x86 instances in IaaS at a public cloud SP, and distributed x86 instances in IaaS at a public cloud SP.

Note that average satisfaction ratings with mature technologies such as those being discussed here typically fall somewhere from 3 to 4.5 on a scale of 1-5. Ratings lower than 3 mean that the customer will abandon – or most likely already has abandoned – the technology. Table 2 provides the explanation of satisfaction ratings.

**TABLE 2****Satisfaction Ratings and Interpretation**

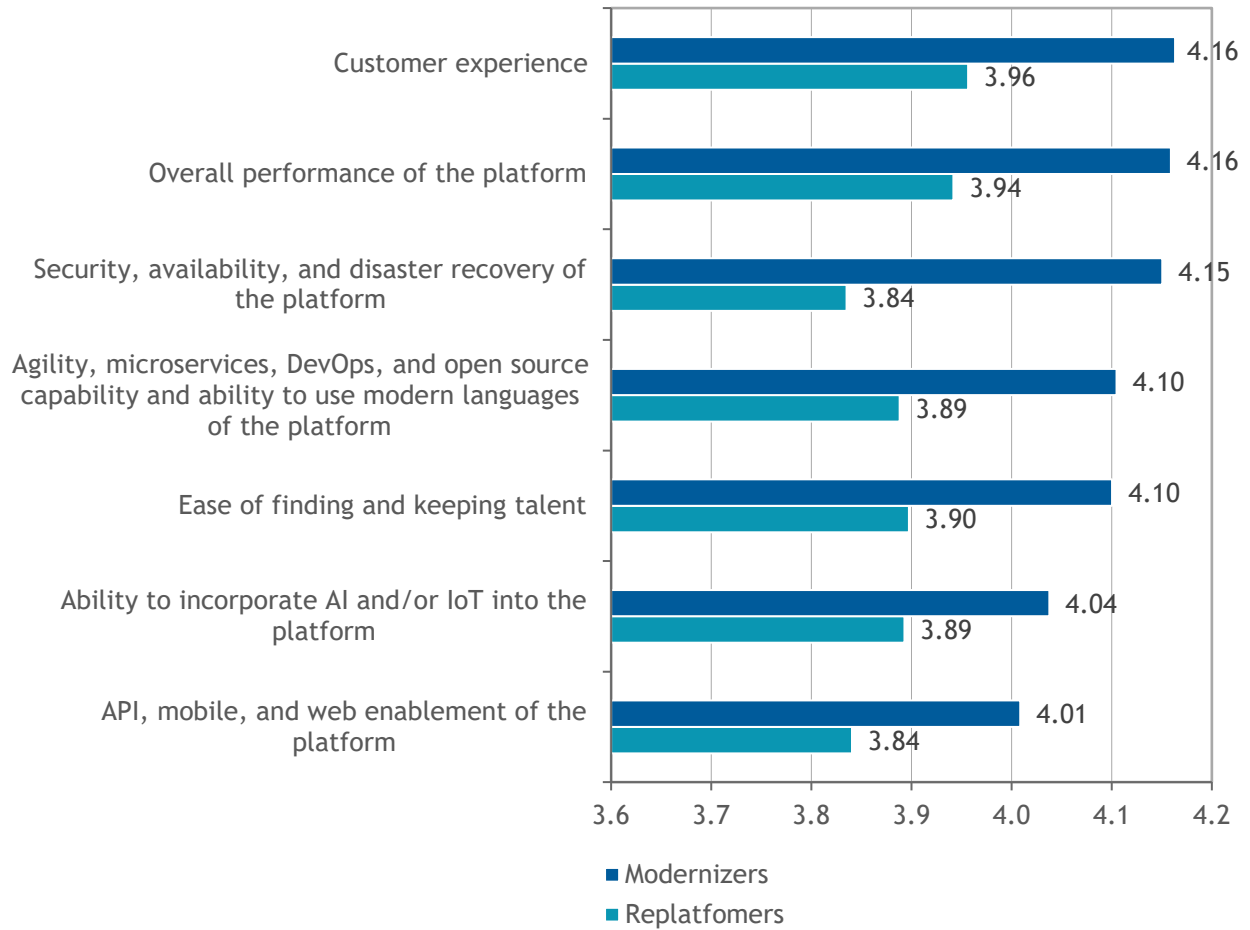
Rating	Interpretation
<3.0	Extremely low — customer will abandon the technology
3.0–3.5	Very low and problematic for a vendor
3.5–3.7	Low and demands attention from the vendor
3.7–3.9	Decent
3.9–4.1	Good
4.1–4.3	Very good
>4.3	Excellent

Source: IDC, 2020

IDC found that modernizers rate the customer experience achieved with their updated platform as "very good" (4.16), while replatformers judged this critical metric for their new platform as being just on the edge of "good" (3.96) and very close to "decent." This is a significant difference on a metric that expresses the ultimate goal of every business today, namely how well it serves its customers. For the overall performance of the platform, the difference was similarly significant, with modernizers being more satisfied than replatformers, and regarding security, availability, and disaster recovery capabilities, modernizers rate their platform as "very good" (4.15), while replatformers' rating entered "decent" territory (3.84). It is noteworthy that modernizers also rated modern functionalities higher than replatformers, including API, mobile, and web enablement; AI and Internet of Things (IoT) capabilities; and open source capabilities, DevOps, and agility. Modernizers rate those as "good" or "very good"; replatformers rate those functionalities as "decent" on their new platforms. Figure 3 shows the satisfaction ratings of various characteristics of the platform. Note that the x-axis was set to start at 3.6 for clarity.

**FIGURE 3**

**Satisfaction Rating with Various Characteristics of the Platform After Modernizing or Replatforming**



Note: Satisfaction ratings were on a scale of 1-5.

Source: IDC, 2020

## Misconception 2: If You Add New Hardware Costs, Modernizing Is More Expensive than Replatforming

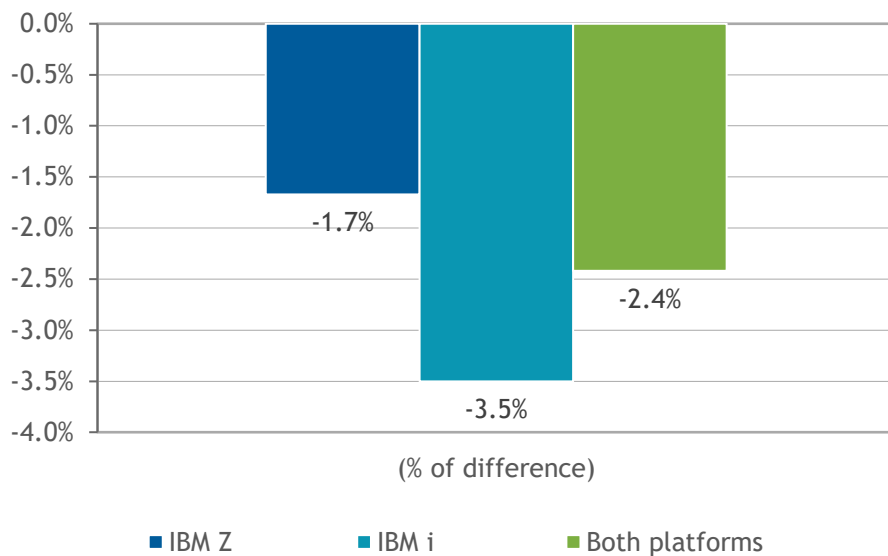
Businesses understand that, in the short term, modernizing on a legacy platform might be more affordable than replatforming since the latter involves investment in either new on-premises hardware and/or public cloud instances. However, there is a common misperception that if and when a modernizing effort does involve new hardware (as it inevitably will in the long run), then replatforming will be much more cost effective. In other words, businesses ask: "Yes, modernizing on IBM Z or IBM i is cheaper than replatforming, but won't we then blow our budgets when we move from a z13 to a z15 or from IBM i on POWER7 to POWER9?"

IDC data shows that this is not the case. Indeed, Figure 4 shows that the opposite is true. Figure 4 shows the percentage difference between modernizers and replatformers for software, staffing, third-party consulting, and disruption costs when both spend *the same amount on new hardware* within the \$400,000 to \$2 million range. Note that not included in Figure 4 is the fact that many replatformers will also incur new opex from spinning up cloud solutions during the replatforming initiative.

"For every \$1 we spent on the IBM, it would have been at least \$2 to go with a different solution."  
— IBM Z modernizer

FIGURE 4

### Difference Between Modernizers and Replatformers with a Similar Hardware Investment



Note: Hardware investment is within the \$400,000 to \$2 million range.

Source: IDC, 2020



The data shows that if both modernizers and replatformers invest the same amount in new hardware within the 400,000 to \$2 million range, then modernizers pay less for software, staffing, consulting, and disruption than replatformers. Modernizers on IBM Z that invest the same amount in new hardware as part of their modernization initiative as replatformers pay 1.7% less for the other expenses; modernizers on IBM i pay 3.5% less than replatformers.

Much of this can be explained with the support, expertise, and built-in software that comes with a new IBM Z and IBM i hardware purchase, something that replatformers onto distributed environments do not enjoy and therefore need to pay extra for. Furthermore, maintenance costs on modernized platforms tend to go down as the platforms become increasingly automated, including with AI-based predictive analytics.

These advantages for modernizers could have been even more pronounced if it weren't for the fact that some modernizers have higher than necessary disruption costs during their modernization initiative due to the fact that they do not upgrade their platforms as often as recommended – some operate with 10-year or more refresh cycles. When these businesses do finally upgrade, they have a more complex and more costly modernization initiative to manage than businesses that operate with shorter refresh cycles (which shows that there are benefits to remaining up to date).

## Types of Initiatives and Financial Impact of Modernizing on IBM Z and IBM i

In this section, we discuss the types of initiatives that businesses undertake to modernize and the financial impact (cost and revenue) from those efforts on the two platforms.

### *Modernizing on IBM Z*

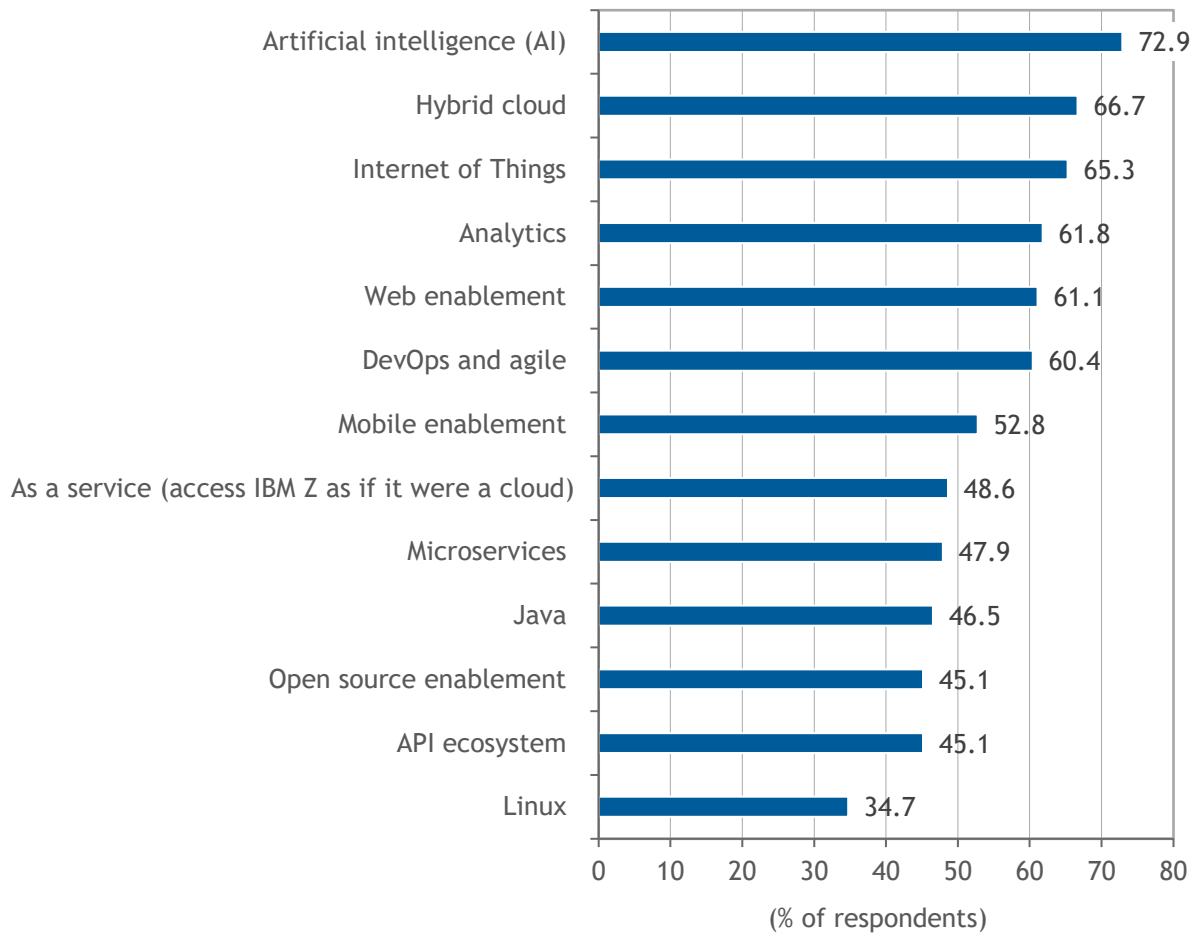
Modernizing on IBM Z involves a variety of initiatives that enable the platform as the hub on which an enterprise's most valuable data are leveraged for new business insights, customer applications, and product innovations. Figure 5 shows the degree to which businesses invested in various modernization initiatives on their IBM Z.

The data shows that AI, hybrid cloud, and Internet of Things are the top 3 functionalities that businesses invest in on IBM Z. Further:

- Investments in AI go hand in hand with organizations' increasing ability to train AI algorithms for their industry's most important use cases (including IT automation), infuse the IBM Z applications with inferencing capabilities on those AI algorithms, and leverage the new capabilities to move their business toward what IDC calls an "intelligent enterprise."
- Hybrid cloud is the preferred cloud strategy for most enterprises and serves as a critical enabler for all other initiatives. Organizations are increasingly leveraging IBM Z data in cloud solutions while keeping the data on the IBM Z for security, SSOT, and regulatory reasons.
- Internet of Things investments are targeting the data volumes that are coming from devices at the edge, which can be plants, local sites, franchises, and so forth. Incoming data streams, which are not necessarily structured data, are ingested, analyzed, and leveraged for real-time decision making.

**FIGURE 5**

**Modernization Initiatives on IBM Z**

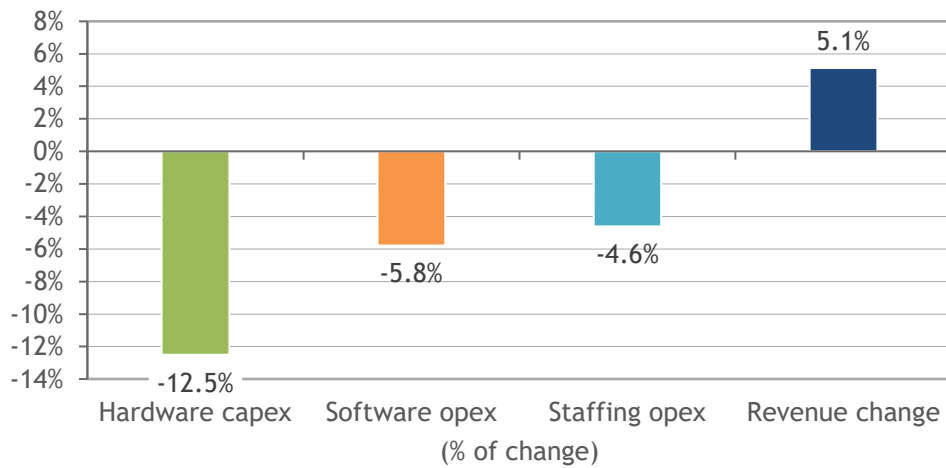


Source: IDC, 2020

As a direct result of the modernization initiatives on IBM Z, organizations were able to run more cost efficiently while growing their business (see Figure 6). Organizations incurred lower costs in terms of hardware capex (-12.5%), software opex (-5.8%), and staffing opex (-4.6%) while generating more revenue (5.1%).

**FIGURE 6**

**Annual Costs and Annual Revenue from Modernizing on IBM Z**

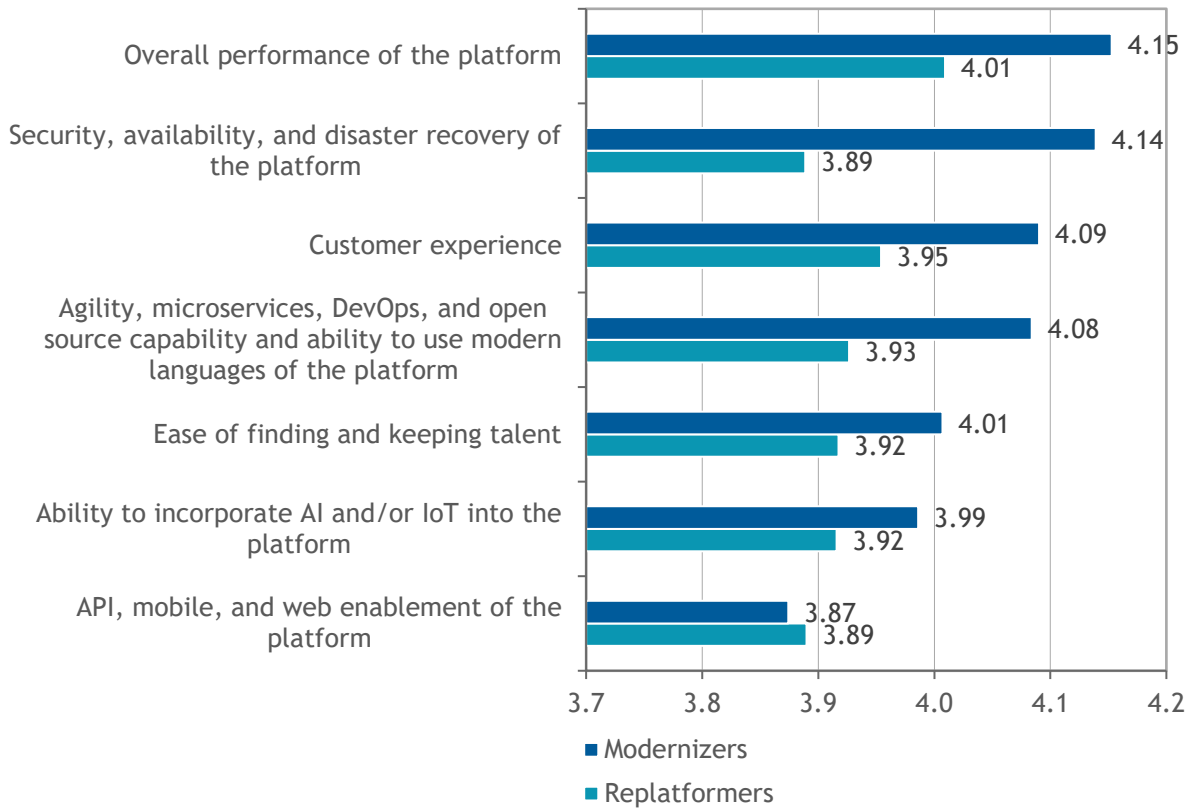


Source: IDC, 2020

As to how satisfied businesses were with their modernization efforts on IBM Z, the satisfaction ratings were mostly higher among modernizers than among replatformers (see Figure 7), with overall performance; security, availability, and disaster recovery; and customer experience standing out. Only API, mobile, and web enablement was rated slightly lower by modernizers – these functionalities were seen as "decent" on the edge of "good" by both modernizers and replatformers (refer back to Table 2 for the explanation of satisfaction rates).

FIGURE 7

### Satisfaction Rating with Various Characteristics of the Platform After Modernizing on IBM Z or Replatforming



Note: Satisfaction ratings were on a scale of 1-5.

Source: IDC, 2020

### Modernizing on IBM Z – Case Study

A United States-based company in the healthcare industry with \$700 million in annual revenue stated the following three top considerations for modernizing on its IBM Z:

- **Staying up to date with current technology.** "Customers require it, depend on it, and expect it from our business."
- **Cost.** The company determined that it is easier and more cost efficient to maintain the IBM Z than to replace it.
- **Staff retention.** The company found that it is easier to retain IBM Z staff when they have an opportunity to work on leading-edge technology.

The IBM Z has played a major role in the company and continues to do so. "We will stay with IBM Z, and it's nice that you can modernize it without having to reinvent the wheel," said a representative. The company did a deep cost analysis comparing modernizing on IBM Z against replatforming with various alternative platforms and found that for every \$1 invested on the IBM Z, it would have to spend at least

\$2 to replatform to a different solution. In terms of time, modernizing took three to six months, compared with an anticipated one year for replatforming.

Digital transformation was a prime motive for the modernization, but at the same time, the modernization further drove the company's DX. "It made things easier for the end user – the consumer – and for our in-house end users." Similarly, implementing a hybrid cloud strategy drove the modernization, but then the IBM Z hybrid cloud capabilities further drove its cloudification, which it leveraged for expanding its IoT capabilities. Plus, the company successfully integrated the IBM Z into its DevOps culture.

Regarding staple IBM Z features, here too the company experienced distinct advantages. Downtime, processing time, and security further improved while maintenance costs declined. Manageability became somewhat more complex, the company said, because of the many new capabilities that it adopted.

In total, the company spent around \$1 million on the modernization initiative, including hardware, software, staffing, and third-party consulting. This was about 20% more than had been budgeted, but the company said it was satisfied with this outcome, and it expects to make five-year return-on-investment (ROI) target. The toughest portion of the process was, according to the representative, reconciling all the different visions for the modernization project.

### ***Modernizing on IBM i***

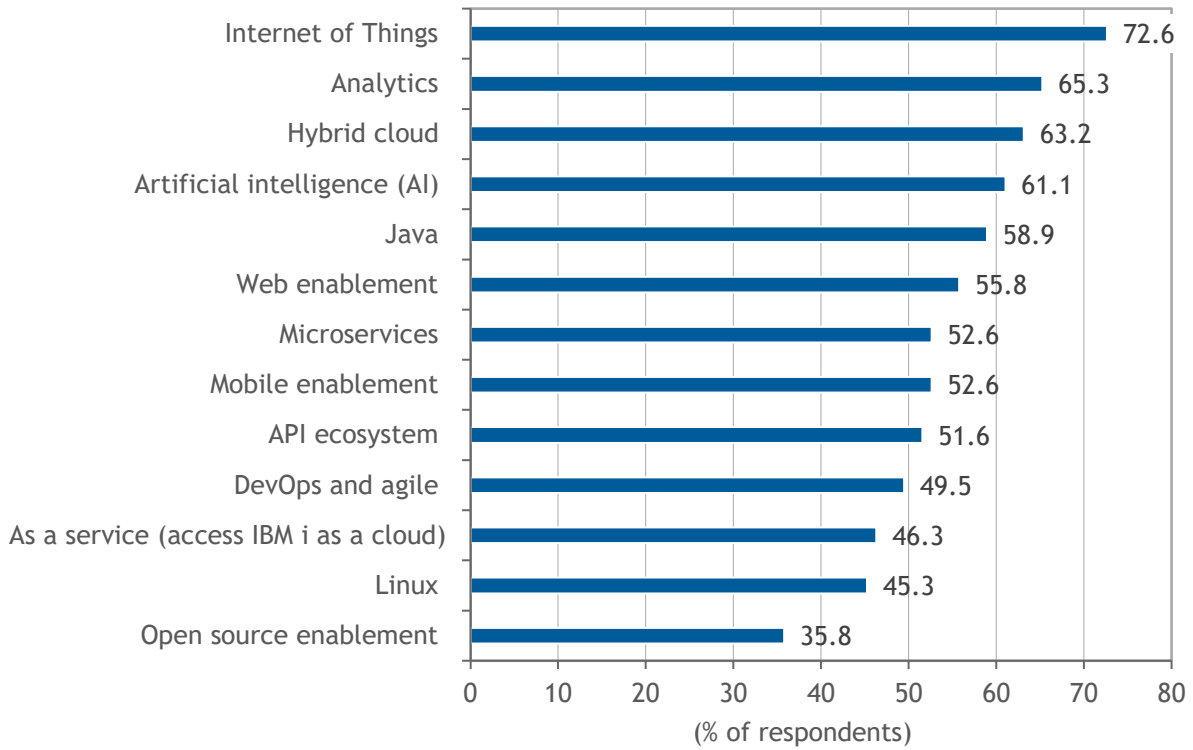
Modernizing on IBM i involves a similar set of initiatives as on IBM Z. Figure 8 shows the degree to which businesses invested in a range of modernization initiatives on their IBM i platform.

Traditionally a preferred platform for running the operations of franchises in the banking industry, retail chains, and other types of businesses that are geographically dispersed with a central headquarters, the most often cited modernization initiative on IBM i is Internet of Things, followed by performing advanced analytics on the platform and integrating the IBM i into a hybrid cloud deployment model.

As a direct result of the modernization initiatives on IBM i, organizations said that they were able to run more cost efficiently while growing their business (see Figure 9). They incurred lower costs in terms of hardware capex (-6.8%), software opex (-2.0%), and staffing opex (-1.0%) while generating more revenue (4.1%). The staffing opex reduction is noteworthy as staffing is typically limited for IBM i, given that the platform is designed to run with low maintenance requirements; yet even when bringing a multitude of new capabilities to the platform, businesses were still able to reduce their staffing costs.

**FIGURE 8**

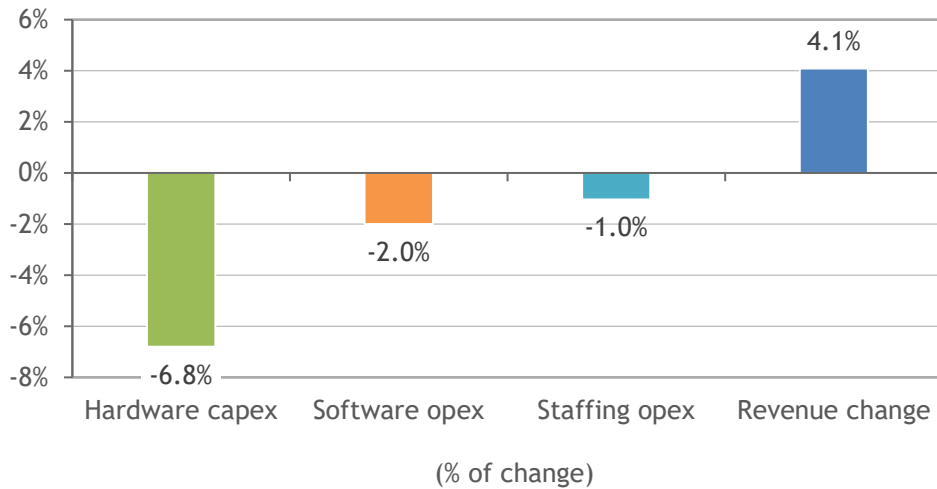
**Modernization Initiatives on IBM i**



Source: IDC, 2020

**FIGURE 9**

**Annual Costs and Annual Revenue from Modernizing on IBM i**

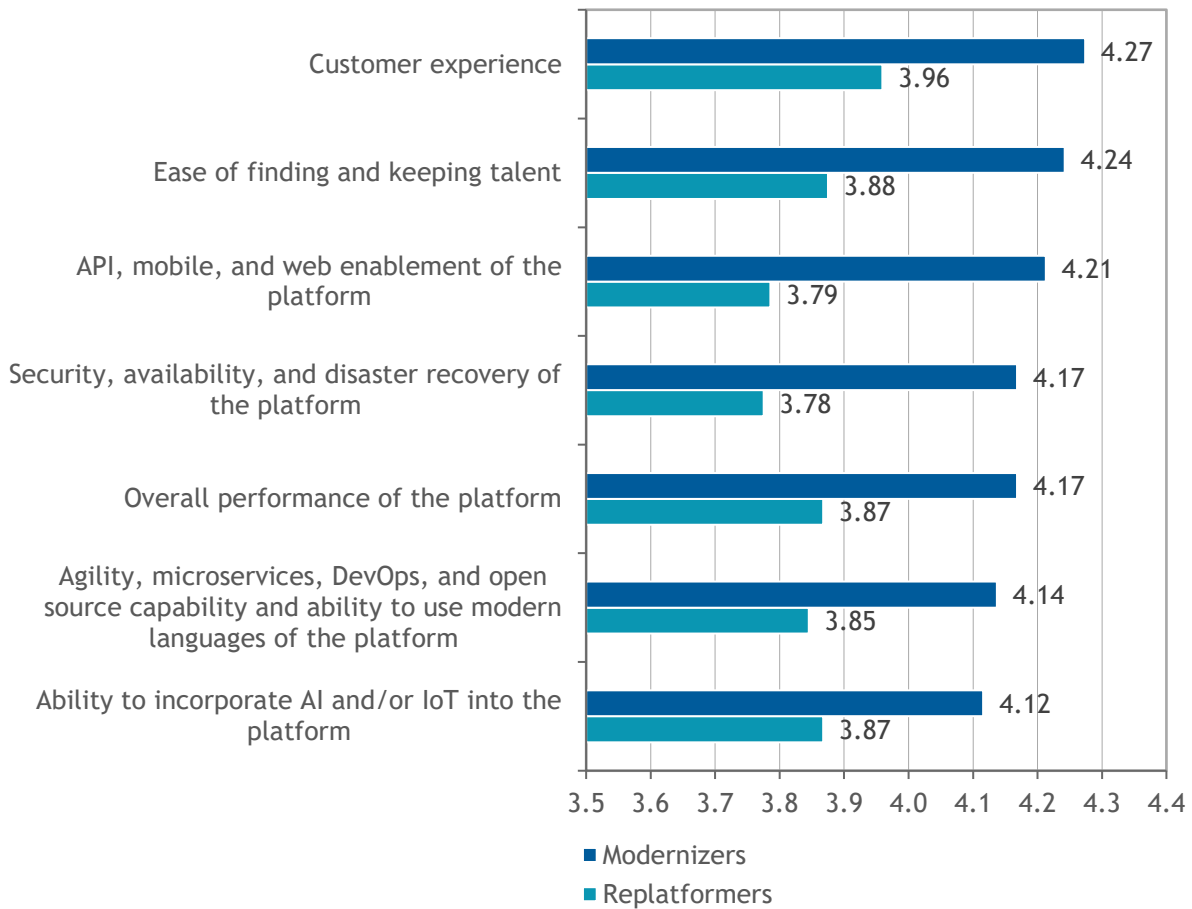


Source: IDC, 2020

Satisfaction ratings were across the board higher among modernizers on IBM i than for replatformers, with customer experience, ease of finding and keeping talent, and API, mobile, and web enablement being rated as "very good," even close to "excellent" (see Figure 10). Replatformers rated API, mobile, and web enablement and security, availability, and disaster recovery as "decent" but very close to the danger territory for the vendors of their new platform (refer back to Table 2 for the explanation of satisfaction rates).

**FIGURE 10**

**Satisfaction Rating with Various Characteristics of the Platform After Modernizing on IBM i or Replatforming**



Note: Satisfaction ratings were on a scale of 1-5.

Source: IDC, 2020

## Modernizing on IBM i – Case Study

A global business-to-business company in the life science industry has acquired multiple smaller companies and is now consolidating as a manufacturing business with dispersed sales organizations. The company's IBM i platforms contain the master data for its SAP ERP system, and it has modernized on the IBM i to bring more analytical capability and AI to it, deploy the platform as a hybrid cloud, and use IBM i for IoT and mobile. The company has also invested in enabling open source software on the platform.

These initiatives are part of what the company calls "aggressively transitioning to maximize the digitalization of all processes." This includes deploying sensing technologies and launching machine learning feasibility studies to augment the company's applications with AI. Drivers for its modernization on IBM i are performance, standardization across the business, flexibility, security, and ROI.

One of the reasons why the company chose not to replatform to a cloud deployment is that it has different KPIs than cloud providers. Instead of measuring uptime, throughput, and processing response, the company looks at its IT solutions in a more granular way, namely as memory-intensive, processing-intensive, and storage-intensive applications. On those metrics, IBM i was more suitable.

DX was a major driver for the company's modernization on IBM i, including the need for flexibility. As one representative said: "We need to ensure data governance and security and be able to flex – expand and contract – based on demand, as there is seasonality to our business." The greatest improvements that the company said it experienced from modernizing are transaction performance, data latency, availability, programmability, and manageability. The company saw a 30% reduction in both capex and opex, thanks to its IBM i modernization initiative.

"We're big believers in Industry 4.0. We are transitioning to maximizing the digitalization of all of our processes."  
– IBM i modernizer

## ROCKET SOFTWARE SOLUTIONS

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Rocket Software provides a vast portfolio of software solutions to support businesses with their mission-critical infrastructure and to help them modernize on that infrastructure in order to put a solid foundation under their digital transformation initiatives. The company offers application life-cycle management (ALM) solutions; data management solutions; data sharing and electronic data interchange (EDI) solutions; integrated database and application development environments such as Rocket D3, Rocket U2, Rocket UniData, and Rocket Universe; automated content search and publishing solutions; modernization solutions such as APIs for IBM Z, IBM i, and MultiValue Databases; application development and efficiency improvement tools for IBM Z; data protection solutions; clustering solutions; and network monitoring solutions.

### For IBM Z

Rocket Software is at the forefront of helping businesses modernize on their IBM Z. For example, Rocket is a founding member of the Zowe initiative, which is an open source project that offers modern interfaces to interact with z/OS, allowing developers to work on z/OS as they would on cloud platforms. Rocket Software offers a wide range of solutions for IBM Z, including data management, performance optimization, catalog and system management, disaster recovery, storage management, and security. The company's IBM Z team has deep knowledge of IBM Z technologies including z/OS, Db2, IMS, and CICS. To support businesses' modernization efforts, Rocket Software offers Rocket BlueZone Web for



secure browser-based access to IBM Z. The company's open source languages and tools for z/OS offering allows developers to use more than 30 popular open source languages and tools to develop on IBM Z. And Rocket LegaSuite and Rocket API help developers leverage the logic in 3270 screens for use in the cloud, on mobile devices, and for self-service applications.

## For IBM i

For IBM i, Rocket Software is focused on helping businesses leverage the technologies that drive digital transformation, including web, mobile, cloud, and analytics. The company's solutions empower IT with modern user interfaces, web services, and APIs while reducing IT workloads through automation for application and data management. Rocket BlueZone Web, for example, provides browser-based emulation for accessing IBM i applications to desktops, laptops, tablets, and other mobile devices. Similarly, Rocket LegaSuite Web allows businesses to web enable their back-end applications so they can be accessed from web browsers and mobile devices. And Rocket API turns an IBM i system into a modern API-enabled platform using SOAP or RESTful services, empowering developers to integrate core IBM i business functionality into web or mobile applications. Finally, Rocket Aldon optimizes software development with modern open source development tools and processes.

## CHALLENGES/OPPORTUNITIES

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### For Businesses

All over the world, vast amounts of some of the most valuable and mission-critical data is processed by platforms such as IBM Z and IBM i. These platforms have remained unmatched in their transaction capability, availability, and security, but they were initially slow to catch up with technologies to open them up for business end-user and/or consumer applications. In the mid-2010s, this changed, when especially IBM but also large software vendors doubled down on their platforms and began pouring massive amounts of R&D investment into enabling them for the very latest technology requirements.

Today, these platforms have evolved from siloed to integrated to transformative, meaning that they do not just assist in DX, but they actually drive it. For many businesses, the biggest challenge is to comprehend this transformation and shed their previous misconceptions about the platforms as being legacy. These are indeed some of the most capable and modern platforms in the market today, and any business considering their IT infrastructure strategy should be wary of throwing the baby out with the bathwater by replatforming. IDC has found that one of the most common mistakes leading to replatforming is unawareness of the innovations available on IBM Z and IBM i. At minimum, businesses should do a deep analysis of not just cost avoided but also functionalities gained from modernizing on their platforms.

### For Rocket Software

For Rocket Software, the greatest challenge the company faces is tightly linked to the one customers face, namely undoing the misconceptions around IBM Z and IBM i as legacy, helping customers understand the modern capabilities of these platforms and helping them take advantage of those capabilities.

IDC is seeing a new trend toward mission-critical platforms now that they have been opened up for hybrid cloud and modern application development. As quintessential purpose-built systems, they used to stand out in the homogeneous, general-purpose datacenter of the past 15 years. But datacenters are changing and becoming increasingly heterogeneous, with purpose-built platforms for specific workloads becoming more and more common. Take AI, for example, which has brought a large variety of purpose-built systems into the datacenter.

Different processor architectures are no longer frowned upon, and different operating systems are hidden by new abstraction layers such as containers and container management tools. For Rocket Software, and for its competitors and partners in the IBM Z and IBM i markets, this is an opportunity to help customers rediscover the purpose-built mission-critical platform that plays well with the rest of the datacenter.

## CONCLUSION

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In this study, IDC compared businesses that modernized on their existing IBM platforms with businesses that replatformed to other systems. We measured and compared the associated cost with such a modernization or replatforming initiative in terms of hardware, software, third-party consulting, and disruptions. We also measured the results achieved in terms of satisfaction with the platform's characteristics after either modernizing or replatforming. Finally, we determined the cost and revenue impact of modernizing on the two IBM platforms.

IDC has found that businesses that modernized were, across the board, more satisfied with the functionalities of their improved IBM platform than those that replatformed to a different system. Furthermore, we found that when modernizers and replatformers invest the same amount in new hardware, modernizers experience lower software, staffing, disruption, and consulting costs associated with the initiative than replatformers.

On IBM Z, modernizing yielded lower costs in terms of annual hardware capex (-12.5%), software opex (-5.8%), and staffing opex (-4.6%) while generating more annual revenue (5.1%). Satisfaction ratings were higher for modernizers on IBM Z than for replatformers for six out of seven platform characteristics.

On IBM i, modernizing yielded lower costs in terms of annual hardware capex (-6.8%), software opex (-2.0%), and staffing opex (-1.0%) while generating more annual revenue (4.1%). Satisfaction ratings were significantly higher for modernizers on IBM i than for replatformers on all platform characteristics.

This study also found that there are manifest misunderstandings about the IBM Z and IBM i among IT staff who are in a decision-making role regarding infrastructure strategies. There is a lack of understanding of the accumulation of modern, open capabilities on these two platforms in the past several years. IDC believes, therefore, that for businesses that are running on these IBM platforms today, it is critical to fully comprehend the transformation that they have undergone and recognize the fact that their latest generations belong to the most capable, modern, and open platforms in the market today.

## About IDC

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