

The ROI of Cloud ERP

By Barbara Zimmerman and Robert A. Kelley, CFA



Most U.S.-based distributors have either moved to a cloud-based ERP platform or intend to do so within the next few years. Key drivers of this trend include always-current feature-forward technology, better IT staff efficiency, and the promise of better uptime and security.

We expect that cloud-based ERP will be nearly universally adopted within the next decade, with the rare exception of companies serving the defense industry or those who require a niche-ERP solution that can only be deployed on-premises or in a hosted environment.

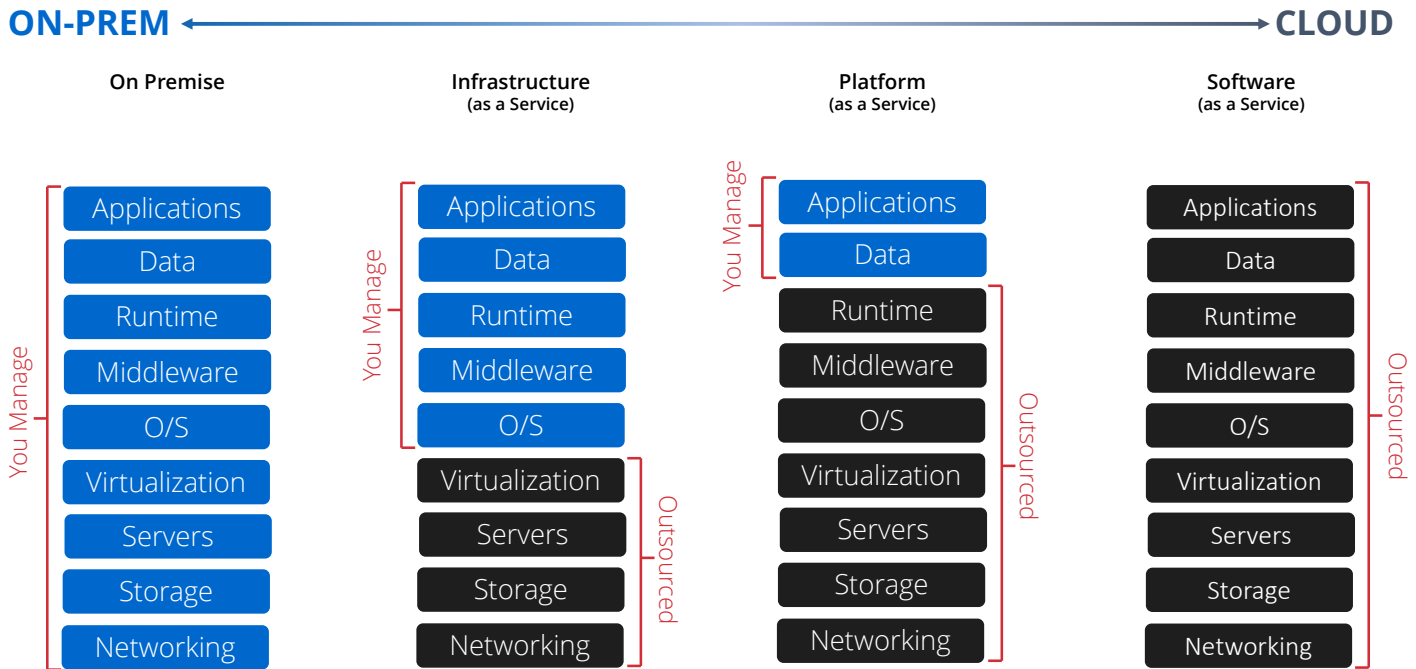
Companies that outsource the entirety of their ERP technology stack to the cloud yield a compelling financial reward of over \$1,500 per user. This cloud-based cost avoidance combined with other functional ERP benefits can realistically drive an annual return on investment (ROI) of more than \$3,000 per user. ERP has quickly grown from a necessary evil to a competitive advantage for most of our clients.

The Meaning of Cloud

The best way to grasp the concept of 'cloud' is to understand the separation of responsibilities with respect to ERP computing. The left-hand side of Chart 1 on page 3 shows the environment we have all lived within for the past 15 to 20 years, where your company is responsible for every component of the IT environment necessary to run an ERP system.

You own and manage everything from the application and database down through any middleware, fully encompassing the servers, storage and facility space within which the system resides.

Chart 1: Cloud vs. On-Premises Separation of Responsibilities



Over time, more of this stack has been eligible for outsourcing, as represented by the middle columns on the illustration. In 2021, true cloud is now mainstream, and distributors can hold an outside party accountable for the installation and maintenance of their entire ERP system.

ROI Fundamentals

Historically, executives considered ERP a cost of doing business. They viewed the idea that one could achieve a healthy ROI from an ERP system change with skepticism. However, over the past 10 years, business leaders have become more likely to express enthusiasm for an expected payback from ERP. We attribute this to the core benefits of cloud, combined with other advances in functional capabilities and data mining.

The prospect of calculating an ROI can be intimidating. But the numbers are not a secret, and ROI formulas involve simple algebraic equations. You can generate the financial payback in relatively short order provided you are willing to guesstimate an improvement here and there and apply some general assumptions.

Chart 2: Benefit Drivers

5 Payback Elements

Boost Revenue

Productivity & Cost Savings

Improve Quality & Performance

Reduce Capital Requirements

Cloud Savings

There are five key elements that fund the payback (Chart 2): boosting revenue, cost savings, improving quality or performance (i.e., cost avoidance), capital-requirement reductions and cloud savings. In years' past, the brass ring was always to achieve a reduction in your inventory investment. While inventory reduction equates to a big one-time influx of cash, a revenue, productivity or performance improvement is the gift that keeps giving, year after year.

When we develop an ROI, we start with three to six key benefit drivers of quantitative financial gains, which is usually more than enough. Then the qualitative improvements and smaller conveniences are icing on the cake. Soft benefits include ease of use, improved quality of work life, happy customers and so on.

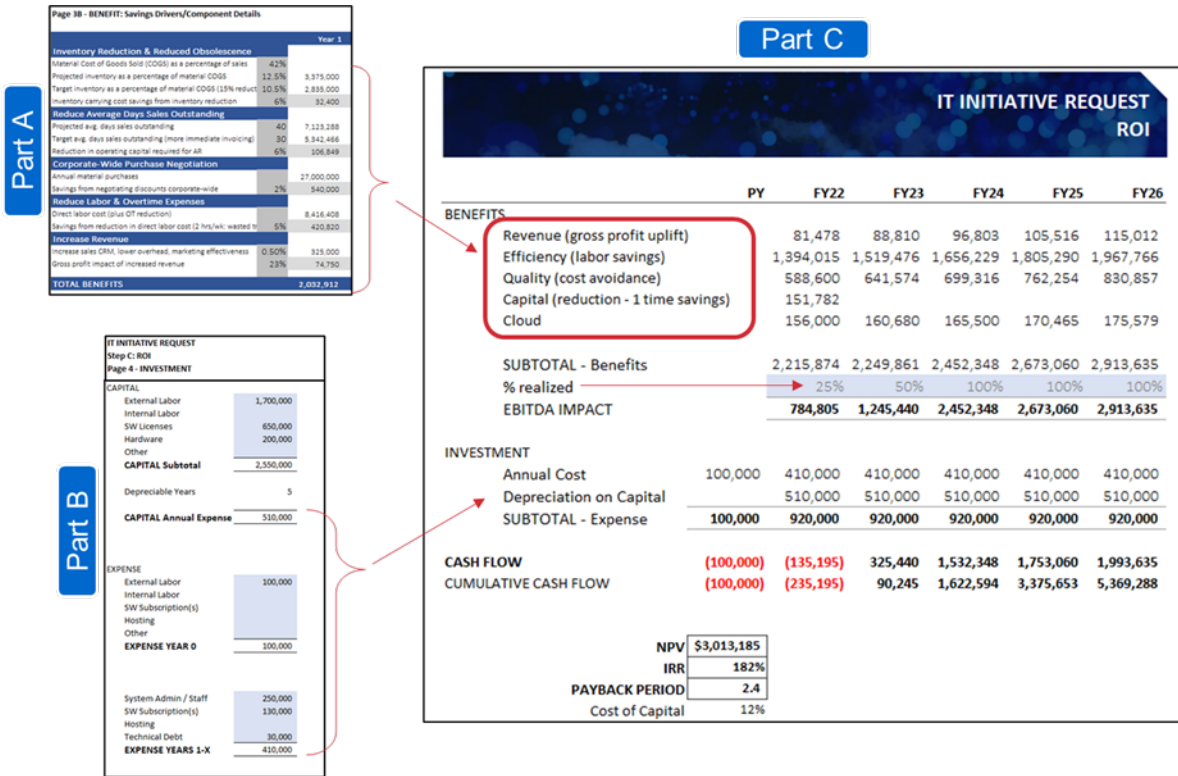
ROI Model for Cloud ERP

The output of an ROI model is typically broken into three parts, as shown in Chart 3 on page 5:

- **Part A** is the product of the quantitative payback calculations discussed above.
- **Part B** illustrates the costs such as the upfront initial capital investment, annual subscription charges and staffing expenses minus support fees eliminated with retirement of the prior ERP system.
- **Part C** combines the costs and benefits for the purpose of calculating the net present value (NPV) and return on investment (IRR) over a five-year horizon, as well as the estimated number of years to reach breakeven (i.e., payback period). Take note of the blue row in the center.

It may take time to achieve full adoption and the mastery required to realize anticipated benefits. Therefore, the model would generally incorporate a reduction in benefits by a factor between 25%-75% in the first couple of years after cutover. It is reasonable to assume the organization would hit full stride around year three.

Chart 3: ROI Model



Cloud Benefit – Data Center

A switch from an on-premises licensed application to a cloud-based ERP subscription eliminates the need to buy hardware. This is no small matter. There are servers, storage and virtualization tools, network routers, switches and firewalls, uninterruptable power supplies and system-optimization tools. Surrounding this hardware lies the facility space, utilities, power, climate control and internet bandwidth.

The cloud provider is responsible for managing platform risk. Consider both services and tools to ensure system stability, plan for disaster recovery, apply security protocols and obtain penetration testing and monitoring. A seasonal spike in any ERP subscriber’s usage is either minimized with virtualization or the provider is responsible for scaling with incremental capacity increases when the system workload approaches a preset trigger point.

The cloud ERP provider is a high-volume customer to hardware vendors and Colo data centers. They are in a better negotiation

position than an individual ERP subscriber. These costs are more affordable to your cloud ERP provider so you benefit from their economies of scale.

Cloud Benefit – Support and Speed

When a distributor signed a new ERP license 20 years ago, there was typically a one- to three-month wait to procure the hardware and install the new ERP software in preparation for implementation. In 2021, a new cloud ERP subscription is provisioned in less than one week. Contract signing is often a pinnacle where your company's implementation team is excited and anxious to roll up their sleeves and get started. It would be a shame to let that peak energy dissipate.

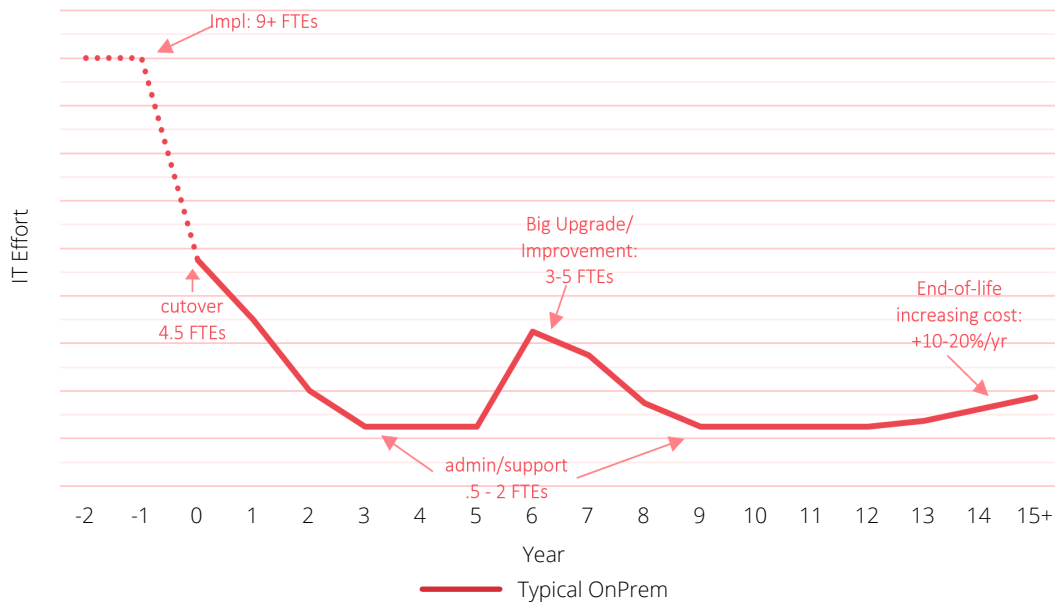
Baked into a cloud ERP subscription are the provider's services to monitor system performance, apply operating system and database patches, manage infrastructure lifecycles, and refresh the componentry on a regular cadence. They employ full-time specialists such as information security professionals, database administrators, data scientists and network engineers. Any individual company with 50 to 100 users could not afford access to these dedicated specialists.

Cloud Benefit – Application Lifecycle Continuous Updates

The nature of cloud changes a company's ERP application lifecycle. Chart 4 on page 7 shows the progression of an average company's effort to administer their on-premises ERP system over time (assuming a 15-year life before wholesale replacement with another ERP vendor).

In the 12-24 months leading up to cutover (dotted line), the company commits an equivalent of nine employees to the implementation setup, data conversion and rollout of the new system. At cutover, internal resource support hours are down to half of peak implementation levels. As the new ERP is stabilized and individual users adopt the new business processes,

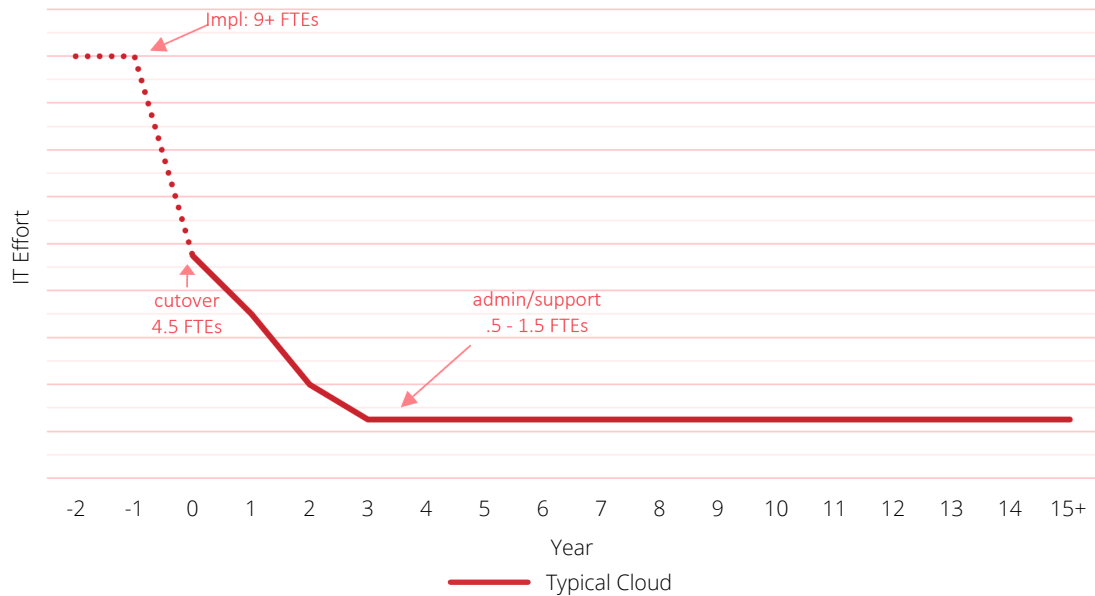
Chart 4: On-Premise Application Lifecycle



administration levels drop to a much lower run-rate. However, around year six, the on-premises ERP deployment requires a material software upgrade, and aging infrastructure demands a hardware refresh.

This is represented by the red hump midway through the ERP system's lifecycle. Upon re-stabilization support levels return to normal, until the final third of the system's lifecycle at which time support costs increase due to the difficulties involved with maintaining interfaces between multi-generational systems.

Chart 5: Cloud ERP



In contrast, once deployed, cloud applications (Chart 5) are architected under a smaller yet more frequent update cycle, and the infrastructure environment expansion/refresh cycle is invisible to the customer's ERP users.

Cloud Benefit – Artificial Intelligence

Technological advances employed by these newer cloud ERP applications are often overlooked when a company is considering whether to deploy an on-premises vs. cloud-based ERP solution. The data-aggregation opportunities are one of the most exciting developments to come out of the “utility-based computing for shared benefit” model. This benefit is on the cusp of delivering revolutionary insights to ERP customers.

One relatable illustration of data aggregation comes from the HR/Payroll application market; the leading HR vendor serves over 50% of large employers in the U.S. As such, they run big-data algorithms and offer a tool to their subscribers that can predict with 70% accuracy when an employee is about to quit. A combination of personnel attributes, positional factors and overall market trends provide early indicators or signals that someone is considering a move. This type of artificial intelligence is already in practice today.

Likewise, there is a race among ERP vendors to deploy these types of tools and discover actionable intelligence, which their customers can use to gain a competitive advantage or improve effectiveness and decision-making.

Cloud Benefit – Response Time and Security

Another state-of-the-art advancement relates to security and system response time. Distributors continue to express concerns about cloud application response time and the potential risk of a security breach. Cloud ERP vendors have an opportunity to partner with content providers to bridge this gap now that edge computing is becoming more widely available.

Edge computing for better speed and security involves a concept called containerization. Conceptually, while the bulk of an application's source code and data reside in the data center, one can relocate a small portion (a virtual package) onto data centers at the edge of major metropolitan areas (i.e. closer to you or any individual who may try to login). Latency is diminished when the portion of an application your users interact with is nearby. Thus, users experience a more rapid response time.

Likewise, this approach also leverages edge computing to put distance between the black hats and your application. The distance between the package on the edge and the bulk of your ERP system within the primary data center can buy the ERP provider's information security resources valuable time with which to detect intrusion and block it before suffering from any incursion or infection.

Cloud Benefit – Other State-of-the-Art Support Capabilities

Whether deployed on-premises or in the cloud, any ERP user needs to test the system every time there is a new release or upgrade. With a cloud ERP, regression testing requirements are diminishing. Access to a full installation of the ERP system makes it easier to do a proof of concept with a new module or trial before you buy. Often, cloud ERP vendors also provide out-of-the-box support for third-party application connectors and app-store add-ons. Lastly, when updates are deployed, all those changes and new features are served up in inactive mode. As a result,

users don't experience the previous level of upgrade disruption with cloud ERP and companies can elect when to activate new features.

Cloud ROI

When you translate a few of these cloud-specific benefits into hard dollars, the savings are material. The example in Chart 6 reflects the real-world savings for a \$100 million distributor with eight sites and 100 ERP system users.

Earlier we discussed the need to procure and maintain a data center in the case of an on-premises ERP system. In addition to the upfront hardware costs, over an estimated 12-year anticipated life, the system would require one complete refresh and upgrade of the hardware, which equates to \$10,000 per year on an annualized basis.

You must power a data center, cool it, contract for both disaster recovery and information security support. The data center must be staffed to provide appropriate infrastructure operations and support activities.

In our experience, the best way to benchmark any ERP ROI metric is to factor it by individual user. Specifically, what is the savings per user? This approach allows for comparison between dissimilar companies. A 500-user company would have higher costs and

Chart 6: Cloud-Related Lifetime Savings

ROI Driver	Annual Savings	12-Year Cumulative
1. HW infrastructure, expansion & 1 complete refresh	\$10,000	\$120,000
2. Data center (facility, AC, power, internet)	25,000	300,000
3. Disaster recovery	6,000	72,000
4. Infrastructure operations	100,000	1,200,000
5. Upgrade support/services (2x)	15,000	180,000
Total	\$156,000	\$1,872,000
Savings per user per year	\$1,560	

benefits than a 100-user company. But when those figures are translated back to the individual user, they tend to be reasonably comparable -- generally, within +/- 20%.

The bottom line is that cloud ERP savings are material over on-premises. At over \$1,500 per user, this savings goes a long way towards mitigating any added annual costs related to ERP subscription fees.

Distributors' Views on ERP

As part of our research for this report, we conducted a survey that gathered results from distributors from under \$10 million annual revenue to over \$1 billion with the majority between \$10 million and \$500 million.

Overall, most respondents were more satisfied than dissatisfied with their ERP solutions (Chart 7 on page 13). However, the percentage of respondents who indicated they were Very Satisfied or Mostly Satisfied ranged from as low as 30% for costs and complexity of enhancements and customization to a high of 72% for stability, reliability and uptime, which we would expect for most situations.

The highest levels of dissatisfaction stem from costs and complexities of enhancements, customization, the ability to adapt to changing business requirements and support. Almost a quarter (22%) are dissatisfied with the ability to keep current, which cloud ERP providers may be able to offer improvements over on-premises implementations due to modern agile software development and production technologies used by cloud application vendors.

Another quarter of respondents were dissatisfied with core features and functionality, as well as useability and interactive performance of their solutions. Because of the way infrastructure and applications are developed, we anticipate that Cloud ERP vendors are well-positioned to provide better user interfaces, enable faster feature enhancement and leverage the flexibility

of cloud infrastructure to match performance with dynamic customer requirements. The following are some additional observations from the survey responses:

About half of ERP implementations among the respondents' organizations are over 10 years old with another 20% between 5 and 10 years old. Traditionally ERP lifecycles have been over a decade because of the costs involved in major systems and process changes. Depending on time to implement and achieve productive results with ERP solutions, many customers may choose to delay migration to newer Cloud ERP solutions unless they are evolutions of existing implementations with some data and process compatibility. Mostly likely the newer ERP implementations (29% were under 5, with 17% under 2 years old) are already cloud-based.

About half of respondents indicate that they are already cloud-based or are in the process of implementations or planning to implement within the very near future. Based on the survey data, cloud ERP is already in the "late majority" of the technology adoption curve; cloud ERP is inevitable for most distributors. However, we expect there may be some niche distributors that remain with on-premises ERP implement due to the highly customized or proprietary nature of their business. Because of the many additional benefits provided by cloud ERP, we would expect that laggards in cloud ERP adoption may suffer or fail to survive.

Distributors' Expected Benefits of Cloud ERP

Platform benefits:

- Better access to data and visibility of information
- Significantly better ease of use and user adoption of ERP capabilities across the organization
- Better interfaces with users and other systems that streamline processes and facilitate automation

ERP direct benefits:

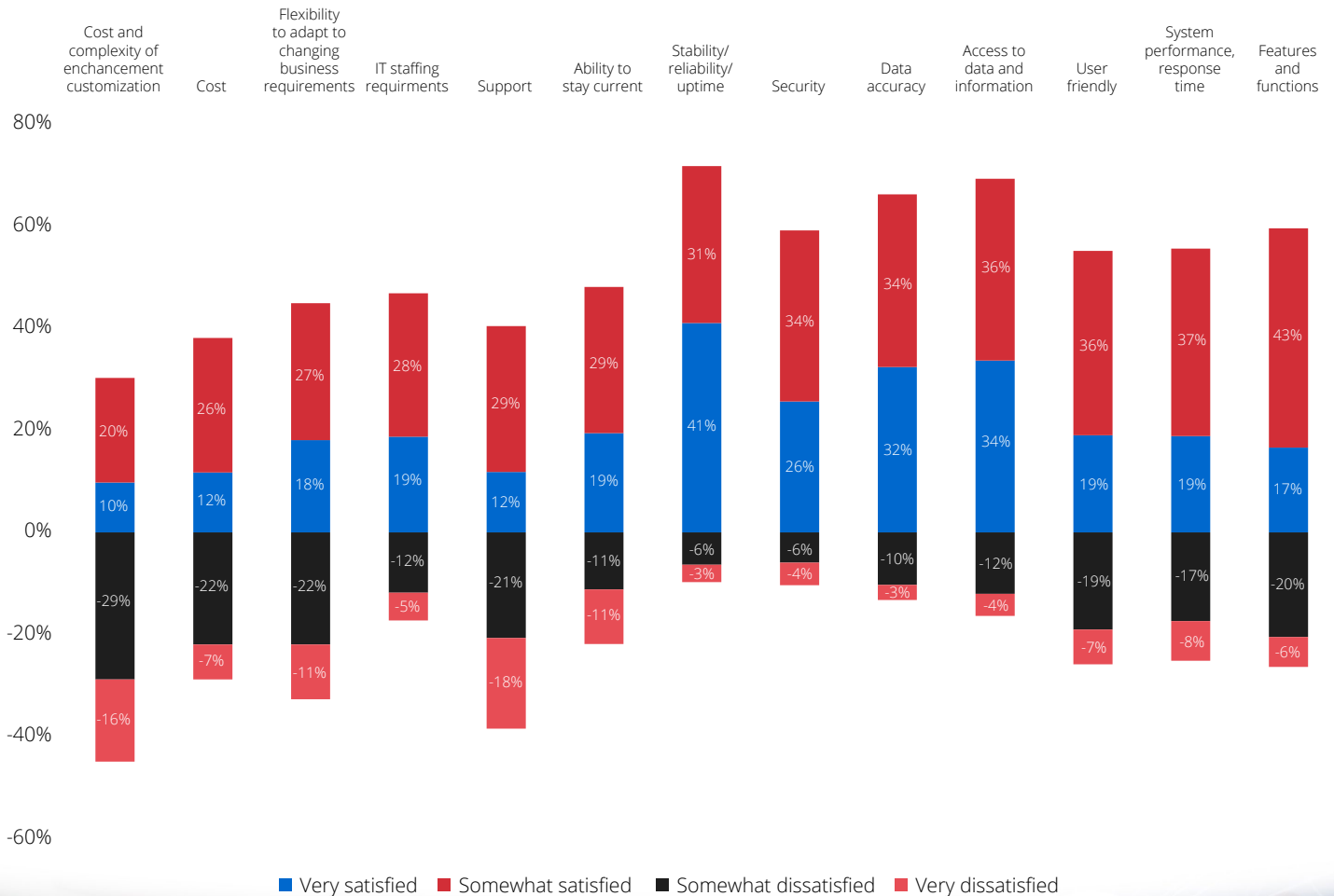
- Warehouse operations optimization
- Material availability/shortage visibility
- Error reduction
- Improved quoting/pricing/margins

- Improved stocking levels/reduced stockouts
- Reduced inventory investment/obsolescence
- Sourcing and purchase negotiation

HR and Personnel benefits:

- Mobility/remote work
- Labor savings from information access
- Communication and coordination internally and with customers
- Workflows, agility and automation, e.g. duplicate data-entry elimination
- Work-life balance/employee satisfaction

Chart 7: How satisfied are you with the following aspects of your current ERP?



Expectations of Cloud ERP Advantages Compared with On-Premises

The most significant areas where respondents believed cloud would be better than on-premises (Chart 8) solutions include:

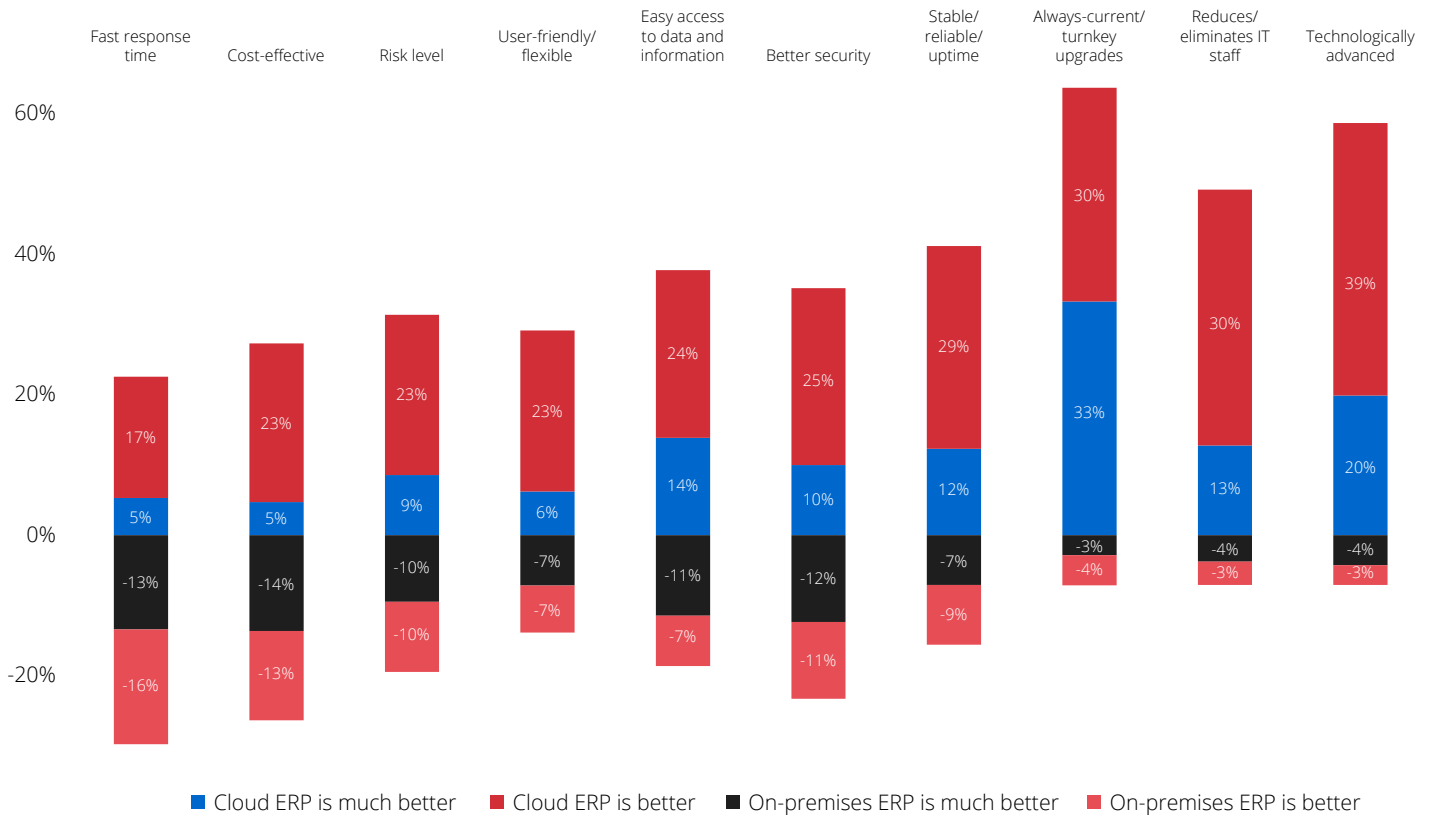
- stay on current releases with turnkey or automatic upgrades (64%)
- operate on the most technologically advanced solutions (59%)
- reduce or eliminate IT staffing requirements (49%)

Respondents were most skeptical about the ability of cloud implementations to:

- provide fast response times (30%)
- match overall cost-effectiveness of on-premises implementations (26%)
- provide the same levels of security (23%)
- reduce risk (20%)

Interestingly, more respondents believed that cloud ERP was slightly better at cost-effectiveness (27%), risk reduction (31%) and security (35%) than the skeptics.

Chart 8: What do you believe are the advantages of Cloud ERP compared to on-premises ERP?



The cloud is fast becoming the standard for implementing ERP capabilities and promises to be in deployment across the industry over the next few years if it isn't already. Cloud ERP is a strategic business platform, a foundation for integrating other enterprise functionality such as CRM, warehouse management, logistics and ecommerce, as well as pricing management, analytics, marketing automation and other specialized applications.

About the Authors

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Robert A. Kelley, CFA, is a Partner with Distribution Strategy Group. Robert has had an extensive career with high-growth companies from venture-capital backed high-technology startups to large public corporations. At Distribution Strategy Group, Rob creates quantitative analytics models and software applications used for pricing optimization, economic value models, competitive analysis, customer profiles and market segmentation. Rob is a Chartered Financial Analyst (CFA) and has worked in mergers and acquisitions, strategic investments and regulatory valuations.

About This Research

Distribution Strategy Group conducted a survey on ERP effectiveness and plans of 248 respondents comprising mainly executives, senior management and operations leadership. Distributors ranged in size from under \$10 million annual revenue to over \$1 billion with the majority between \$10 million and \$500 million.

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