



WHITE PAPER

Simplifying IT to Drive Better Business Outcomes and Improved ROI: Introducing the IT Complexity Index

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June 2014

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EXECUTIVE SUMMARY: REDUCING IT COMPLEXITY LEADS TO BETTER BUSINESS OUTCOMES

We live in a world of complex IT environments. There are many pressures leading to IT complexity, including merger and acquisition (M&A) activity bringing in new applications and environments, "pockets" of IT scattered throughout the enterprise making independent decisions about their environment, and the need to support demanding and rapidly changing business requirements with increasingly sophisticated yet flexible solutions.

IT complexity is not always a symptom of "things gone wrong"; sometimes it is simply the reality of the situation, part of the cost of doing business. Delivering more sophisticated solutions to increasingly sophisticated customers often requires increased complexity. Maintaining high levels of application availability is more difficult and more complex than delivering services with lower service-level agreements (SLAs). And simplifying the user experience often requires "hiding" greater levels of complexity behind the scenes – the simpler an application is for the user, the more complex the underlying IT infrastructure must often become.

Companies in our study realized annual benefits of \$3,610 per user through IT simplification initiatives.

Complexity brings a number of challenges, both for IT and for the business as a whole. Challenges for IT include increased operational costs and burden, reduced flexibility, and reduced ability to provide high levels of service to the business. The strategic nature of IT to the enterprise and its reliance on business applications complexity can lead to reduced enterprise agility and innovation, reduced customer and user satisfaction and productivity, and increased competitive disadvantage.

Whatever the source of their complexity, organizations must work to contain it and simplify their IT infrastructures. Given the explosion of complexity at all layers, there is accelerating urgency surrounding this task. Simplification drives a number of benefits, including improved user expectations, reduced costs, and improved operations. But perhaps the most compelling reason to simplify IT infrastructure is that for most enterprises, IT is not their core business. By simplifying their IT infrastructure, organizations can devote more of their resources to providing better services to customers and users, enabling innovation and increasing productivity for workers throughout the enterprise.

IDC developed an economic model describing the benefits of reducing IT complexity, and it shows that companies in our study were able to realize annual benefits of \$3,610 per user (defined as employees using IT services) through their IT simplification initiatives. These came through improved business outcomes, including the ability to align IT services better to business needs, to fold new corporate acquisitions in more quickly, and to consolidate business operations including warehouses and call centers. They also came via improved IT operations and efficiencies, including IT infrastructure cost reductions, lower costs for IT management and operations, and delivering IT services faster with better quality. Table 1 provides a KPI performance summary.

TABLE 1

KPIs Associated with IT Simplification Projects

KPI	Before Simplification Initiative(s)	After Simplification Initiative(s)	% Improvement
Mean time to deploy new services (days)	24.3	12.5	48.6
Percentage of IT staff time required to "keep the lights on"	65	37	43.1
Time to develop new apps (months)	24	21	12.5
Time to deliver new customer-required services (months)	3.23	1.14	64.7
Time required to fold in a new company (months)	4	2	50.0

Source: IDC, 2014

There are many ways to simplify IT infrastructure. These include consolidation and deduplication of applications and platforms in the datacenter, modernization of legacy applications, use of automation and integration tools and technologies, adoption of converged and integrated systems, and simply outsourcing the complexity to a third-party provider. But battling complexity is a never-ending cycle; organizations go through waves of simplification initiatives only to once again experience the pressures such as M&A cycles and waves of application deployments that once again lead to IT complexity. As David Rudzinsky, SVP Information Services and CIO of Hologic – one of the users interviewed for this study – put it, "There's no magic answer to the complexity problem in IT. It grows every day as business complexity advances."

"There's no magic answer to the complexity problem in IT. It grows every day as business complexity advances."

To help businesses understand the degree of the challenge they are facing, IDC developed an IT Complexity Index. It examines a variety of characteristics, including number of application instances, number of OS environments, and percentage of apps/data/compute outsourced. IDC also developed a Simplification Road Map to help companies understand ways to reduce their complexity. This consists of starting at the top, taking an entrepreneurial approach, outsourcing to third parties, and taking an agile approach to IT projects.

The challenge is not trivial, but the benefits are clear. Businesses must simplify their IT infrastructures.

IN THIS WHITE PAPER

This white paper presents the findings of recent IDC research to identify the degree of complexity in IT environments today and the benefits associated with simplifying those environments. It is based on in-depth interviews with senior business and IT executives in nine separate enterprises that span a variety of industries, including financial services, ecommerce, medical/life sciences, retail, defense/aviation, and government. The interviews also spanned a number of geographic regions, including the United States, Europe, and Latin America. The interviews were conducted in February and March 2014. For respondent details, see the Appendix: Interviews Conducted section.

THE MANY PRESSURES LEADING TO IT COMPLEXITY

IT Complexity Defined

IDC defines IT complexity as the state of an IT infrastructure that leads to wasted effort, time, or expense. This could be caused by factors including a heterogeneous environment, use of previous-generation or legacy technologies, server or application "sprawl," lack of sufficient management tools and automation, noncentralized IT "pockets" scattered around different portions of the broader organization, or other symptoms that would lead to wasted time and effort.

Note that this definition was strongly validated during the customer interviews.

Pressures Leading to IT Complexity

There are many factors that cause IT complexity, and respondents spoke about that at length in our interviews. They include:

- **Corporate M&A activity.** Mergers and acquisitions have been a key driver of business growth for the past several decades, but they create complexity in the IT infrastructure as new datacenters, applications, and environments are added to the mix. Most interviewees spoke of the leading role of M&A activity adding complexity to their environment. "We bought other retailers in the past and maintained them independently," said the VP of Infrastructure for a major U.S. retailer. "Only in the past few years are we rationalizing and consolidating them both organizationally and in their IT infrastructure."
- **Decentralization of the business.** Many enterprises have decentralized structures, with business units making their own IT decisions and many having their own pockets of IT. Business units running different applications and systems can cause problems at the corporate level when the enterprise attempts to provide a unified set of financials, meet enterprisewide compliance requirements, or identify a single version of the truth across a broad set of performance metrics.
- **Need to support greater business demands.** Business demands on IT are greater than ever, with expectations of real-time access to data, access to applications across multiple devices, improved user experiences, availability of social collaboration tools, and greater levels of application uptime. Addressing these demands usually requires more sophisticated systems and infrastructure, which in turn can drive up complexity. In the words of the major U.S. retailer, "Making a system do things it was not designed for leads to complexity."

"We bought a lot of other retailers in the past. Only in the past few years are we consolidating them both organizationally and in their IT infrastructure."

- **Continued use and importance of legacy systems.** Several executives described the role of legacy systems in their organization. Whether financial systems, customer databases, or supply chain management, many critical applications reside on legacy systems that "can't be touched." But adapting these systems to support today's needs (e.g., extending a system designed for batch operations to provide continuous, real-time interactions) often requires adding new integrations, modern user interfaces (UIs), or auxiliary applications. "We are trying to gain a level of longevity from our core IT systems to optimize costs and limit the risks of change," said Chris Rawson, COO of VocaLink. "Replacing legacy is expensive, and there are no switchover windows available to us."
- **Disparate systems and standards.** Many businesses' systems and data repositories were implemented at different points in time for different purposes but are now required to communicate with each other. Reconciling different systems and standards creates complexity. This is a challenge for Lieutenant Colonel William Saxon, Force Management Enterprise Division Chief of the U.S. Army, who told us, "We have the challenge of bringing together disparate, disoriented, disjointed data from multiple sources into our system."
- **Supporting fast pace of change.** Even for leading-edge organizations, meeting business demands can cause a great deal of complexity. Web-based organizations in particular are under pressure to launch new products and services on a rapid release cycle, which places greater levels of stress on them than if new applications were expected to be rolled out quarterly or annually.
- **Full mobility/BYOD support.** Supporting different endpoints, applications, and devices across multiple platforms and network types creates new levels of complexity. This is exacerbated when employees are allowed to bring devices and apps of their choosing, which may or may not conform to corporate standards.

"Replacing legacy is expensive, and there are no switchover windows available to us."

IT Complexity Is Part of the Game

While some may consider IT complexity an evil that could be avoided with superior planning and execution, our research found the reality is much more nuanced. In fact, complexity is often a necessary price of entry, if you will. IT organizations that support demanding business requirements often find they need to support greater levels of complexity. Bill Hayfer, VP of Business Systems at INC Research, said, "The system is becoming more complex, but the value to the organization is growing because we are taking the manual efforts out of it."

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Greater levels of solution sophistication and integration often require more sophisticated systems, which can lead to greater levels of complexity. This was the case with Atlanta 311. Joann Butler, CRM Director, said, "We have pieced together the best of the best, which requires customization. It was complex, but we got them to work together." Integrating data and processes from disparate systems into a unified user experience leads to complexity, and providing always-on infrastructures requires more complex systems than systems designed to support less demanding levels of uptime. As the VP of Infrastructure at the U.S. retailer put it, "The need for real-time operations – or at least the semblance of them – creates complexity."

Further, simplicity in the user experience doesn't necessarily imply lack of functionality; in fact, some of the simplest, most elegant user experiences require some of the greatest levels of sophistication behind the scenes. "If you take an inward view looking out, complexity has increased," said Rawson from VocaLink. "But from the customer's perspective, it has to be simple: simple APIs, plug and play, one click – the external perception demands simplicity."

IT COMPLEXITY BRINGS CHALLENGES FOR THE BUSINESS AND FOR IT

The study found that whatever its cause, IT complexity creates challenges, both for IT and for the business as a whole. Key business challenges include:

- **Reduced flexibility and time to market.** Complex infrastructures can be more difficult to manage and to adapt to changing business demands. "Everything takes longer than I hoped it would to deliver because of complexity," stated Saxon of the U.S. Army. Another respondent told us how, by simplifying his IT infrastructure and treating it as a resource pool, he can provide resources to application development teams immediately rather than forcing them to wait weeks or even months to spin up a new environment, greatly reducing time to market for new innovations and applications.
- **Decreased ability to support innovation.** With complex infrastructures, more IT staff time is required for maintenance and troubleshooting. Freeing up IT staff members enables them to spend more time with the business to provide better platforms for innovation.
- **Missed opportunities and competitive disadvantage.** Since IT and applications are the lifeblood of most enterprises, having more agile, responsive, and better performing applications can lead to happier customers, greater revenue, and improved competitive advantage. "The real challenge of those redundant systems is managing our own business," said Hayfer of INC Research. "Trying to get multiple environments to speak to our financial systems is a challenge to providing all the services we want to our customers."

"Everything takes longer than I hoped it would to deliver because of complexity."

"The real challenge of those redundant systems is managing our own business."

IT challenges include:

- **Operational cost and management overhead.** Complex infrastructures are more difficult and time consuming to manage on a day-to-day basis. They are more difficult to perform change management against, and there is greater risk associated with change. This additional IT staff burden translates directly to increased operational costs.
- **Ability to provide services required by the business.** Reduced staff time and less flexible infrastructures make it more difficult for IT to respond to the needs of the business.
- **Vendor management.** Several respondents pointed out that simplifying their infrastructure gave them fewer vendors to manage. This reduced their overall management burden in terms of negotiating and managing contracts and made it easier for staff who have fewer platforms and environments to learn.
- **Increased software licensing cost.** Multiple instances of redundant apps increase the software licensing burden. One respondent told IDC he was able to reclaim 30 vendor licenses over the past two years, reducing both the licensing costs and the need to manage them.

Why Simplify IT?

There are multiple reasons organizations should invest in simplifying their IT infrastructures. One is the explosion of complexity at all layers of the IT infrastructure and of data and application silos. If organizations don't get on top of these trends, their costs will continue to skyrocket and their competitiveness will suffer. John Monczewski, director BI/EPM of General Dynamics, said, "If you can't simplify, you can't remain competitive." Ed Smith, CTO of AutoTrader, said, "Our CFO just said 'I need this to run the company' because he understands that complexity chokes out room for growth, and common platforms provide a foundation to scale the business."

"If you can't simplify, you can't remain competitive."

Another key driver is user expectations, including the use of social tools and accessing enterprise applications via mobile devices with a high-quality user experience. Public social networks, modern Web sites, mobile applications, and popular Android and iOS mobile devices (smartphones and tablets) have created the expectation of simplicity in all user experiences while moving complexity "behind the scenes" and out of the way of the consumer experience. Line-of-business (LOB) users are placing greater demands than ever on their applications; they not only need their applications to get the job done but also expect a great user experience that mimics that of their personal Web and mobile experience. This even extends to the idea of providing information inline and in the context of the user activity, providing embedded analysis of the relevant data. It is difficult to deliver a top-quality experience with an overly complex infrastructure.

Finally, organizations must ask themselves if they really want to be in the datacenter business. Every business has scarce resources that it must decide how best to use. Consolidating applications down onto fewer servers, or even better, outsourcing complexity entirely to a third-party provider such as a cloud service provider or other managed service provider is the answer of choice for an increasing number of enterprises, which can then apply precious in-house resources to more critical aspects of the business.

Organizations Are Taking Multiple Approaches to Reducing Complexity

Organizations are taking multiple approaches to reducing complexity, many of which were described by interviewees in our survey. Some of the primary approaches are:

- **Consolidation and rationalization of applications, systems, and datacenters.** Reducing the physical server, network, and storage footprint reduces the number of systems IT staff must manage and the corresponding burden. Use of converged and integrated systems can further reduce complexity by providing a single, integrated solution combining server, network, and storage onto a single appliance. The same is true for applications, where duplication of functionality can provide opportunities for consolidation on the best existing alternative application or even moving into a modernization-type project.
- **Application modernization.** Replacing legacy applications and the layers of integration and customizations that often surround them can greatly simplify the infrastructure and reduce the IT management burden. Modernization also offers the opportunity to move to cloud-based applications, which in turn provide the opportunity to reduce or eliminate datacenter operations.
- **Unification of operating environments.** Managing multiple operating systems and environments increases staff burden and complexity; streamlining down to a single environment greatly reduces complexity.

- **Outsourcing to third parties and cloud computing providers.** Outsourcing complexity to third parties, including managed service providers and cloud providers, can eliminate the complexity problem.
- **Better automation and integration tools and technologies.** Even shy of making fundamental changes to the underlying infrastructure, organizations can often gain great benefits by implementing state-of-the-art automation and integration tools.

Battling Complexity Is a Never-Ending Cycle

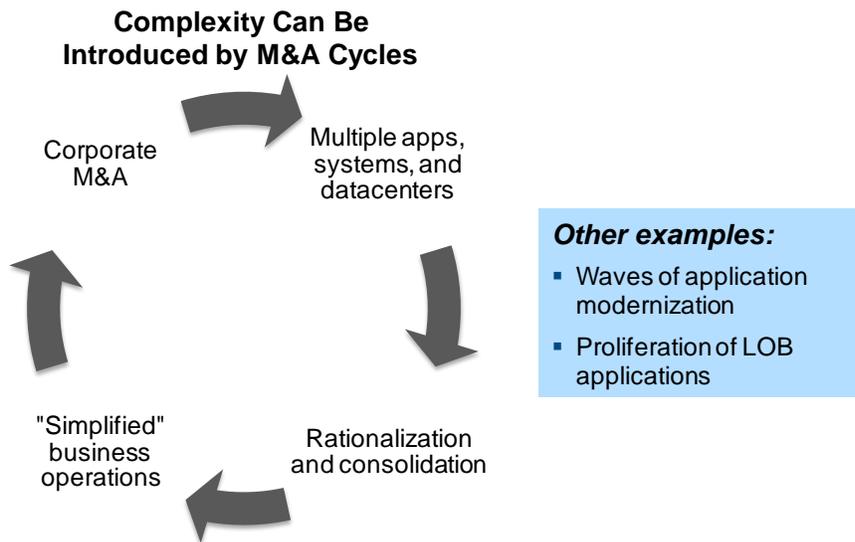
With businesses constantly going through corporate M&A activity, waves of application modernization, and proliferation of LOB applications, the pressures of complexity are always on. Eliminating or reducing this complexity is not a one-off proposition; rather, it is a continuous, cyclical process. Companies embark on simplification initiatives, successfully reduce complexity, and enjoy the benefits of that simplification for some period of time only to come across new pressures that lead to additional complexity. Several respondents commented on this phenomenon, including AutoTrader: "We are always looking for ways to simplify how we deliver technology solutions," said Smith. "Balancing consolidation while leveraging new technologies – SAS, Big Data, and self-service – is the art of running a large technology organization."

"We are always looking for ways to simplify how we deliver technology solutions."

Figure 1 shows a graphical depiction of how M&A cycles can lead to continuing waves of simplification.

FIGURE 1

Complexity/Simplification Cycles



Source: IDC, 2014

THE IT COMPLEXITY INDEX

Based on research conducted for this white paper, IDC developed an IT Complexity Index, which is designed to help companies identify and quantify the level of complexity in their IT environment. The IT Complexity Index is designed to help companies assess the amount of complexity in their infrastructure across a broad range of IT areas. A description of the components that go into the IT Complexity Index is shown in Table 2.

TABLE 2

Components of the IT Complexity Index

Measure	Low Complexity Characterized by:	High Complexity Characterized by:
Use of third-party/cloud providers	Use of external service provider(s) for a large percentage (or all) of IT service delivery	Delivery of the majority of (or all) IT services by in-house IT resources
Application consolidation	Enterprisewide use of a single instance for key enterprise applications (ERP, CRM, HR, financial systems, etc.)	Use of multiple different apps for multiple types of enterprise applications (ERP, CRM, HR, financial systems, etc.)
Virtualization	High percentage of (in-house) workloads run in a virtual environment	Low percentage of (in-house) workloads run in a virtual environment
Use of converged/integrated systems	High percentage of (in-house) IT servers, storage, and networking provided by converged/integrated systems	Low percentage of (in-house) IT servers, storage, and networking provided by converged/integrated systems
Datacenter environment homogeneity	Highly homogeneous datacenter environment based on a single operating system and running equipment from a minimum number of vendors	Highly heterogeneous datacenter environment running multiple operating systems and equipment from multiple different vendors
Mobile/endpoint homogeneity	Use of a limited number of types of mobile devices and endpoints throughout the organization	Use of multiple different types of mobile devices and endpoints from different vendors and running different operating systems throughout the organization
Use of modern versus legacy applications and tools	Consistent use of state-of-the-art tools and applications throughout the IT organization	Consistent use of legacy tools and applications throughout the IT organization
Automation	Widespread use of state-of-the-art automation tools for app/dev/test and IT system management	Little or no use of automation tools for app/dev/test and/or IT system management
Datacenter replication	Use of a single datacenter or multiple datacenters without data replication between them	Use of multiple datacenters with high degrees of data replication between them
Vendor consolidation	Equipment from a limited number of vendors in use in the IT infrastructure	Equipment from a large number of vendors in use in the IT infrastructure

Source: IDC, 2014

ROI OF REDUCING IT COMPLEXITY

Building Better Business Outcomes

Overall, IDC found that companies in the study were able to achieve a number of benefits – both to their business operations and to their IT operations – through IT simplification projects. They were able to build better business outcomes as more efficient and reliable IT is able to deliver services better aligned with business needs, resulting in better outcomes (see Table 3).

TABLE 3

Business Performance KPIs

KPI	Before Simplification Initiative(s)	After Simplification Initiative(s)	% Improvement
Time to deliver new customer-required services (months)	3.23	1.14	64.7
Time required to fold in a new company (months)	4	2	50.0

Source: IDC, 2014

More reliable IT services drove better operational processes, saving \$520 annually per IT user (defined as employees using IT services). IT infrastructure standardization and optimization enabled the organizations in the study whose business model was built on growth through acquisition to more quickly fold in new companies and launch new services. Simplified IT led to more efficient use of corporate assets, resulting in the consolidation of warehouse space in one case or call centers in another and reducing tax liability in yet another, which saved \$480 annually per user. Finally, better use of management tools to simplify the IT operations spilled over into business operations, generating millions of dollars in additional revenue for some of the companies and thus contributing another \$690 per user in annual profit (refer to Figure 3 for a complete breakdown of annual cost savings).

Specific ways that respondents were able to deliver better business outcomes include:

- **Providing a single view of the customer, enabling greater levels of integration and cross-selling (especially challenging in acquiring industries/companies).** Study participants grew software revenue by 20% and media revenue by 15%. "Our ability to cross-sell is critical to our acquisition strategy," said Smith at AutoTrader. "That only works when you can service your customer consistently and bundle products. For this, you need common systems – one CRM, one billing, one order management system, etc."
- **Speeding time to market.** Study participants were able to do so by a factor of two.

"Our ability to cross-sell is critical to our acquisition strategy. That only works when you can service your customer consistently and bundle products."

- **Providing critical data to the business faster, enabling competitive advantages and generating up to millions of dollars in new business.** "Before, people were getting labor utilization information two weeks into the month, too late to impact the month," said Monczewski at General Dynamics. "Now people are getting it twice per month, and they can make intermonth adjustments – that makes a big difference."
- **Making smarter, real-time inventory and Web fulfillment decisions.** IDC estimates that by allowing a company to avoid adding inventory fulfillment warehouse, it's possible to save up to \$250 million. "Online channel orders used to be fulfilled from a handful of warehouses," said the VP of Infrastructure at the U.S. retailer. "Now, with our unified systems, they can be fulfilled from those plus several hundred stores. That lets us ship from a store where it's not selling well, so I don't have to mark down inventory in those locations. That's valuable for us."
- **Reducing staffing needs/head count in the lines of business.**
- **Improving system performance, which in turn drives improved customer satisfaction and user experience/productivity.**
- **Shifting more IT staff to transformational areas of the business.**

Delivering Savings and Benefits to the IT Organization

By optimizing IT operations and services, companies were able to create a more scalable, efficient IT infrastructure while reducing costs by 10-30%. This saved almost \$900 per user annually. A more efficient infrastructure allowed IT staff to lower operations costs for IT by as much as 50% (\$860 per user on average) as well as deliver IT services faster and with better quality. Unplanned downtime was reduced by 40-70%, increasing productivity by a value of \$160 per user per year.

Organizations in the study benefited by having their highly skilled IT labor forces move from spending 65% of their time "keeping the lights on" to only 37% of their time, thus freeing up hundreds of hours to focus on more business-enabling activities (see Table 4).

TABLE 4

IT Performance KPIs

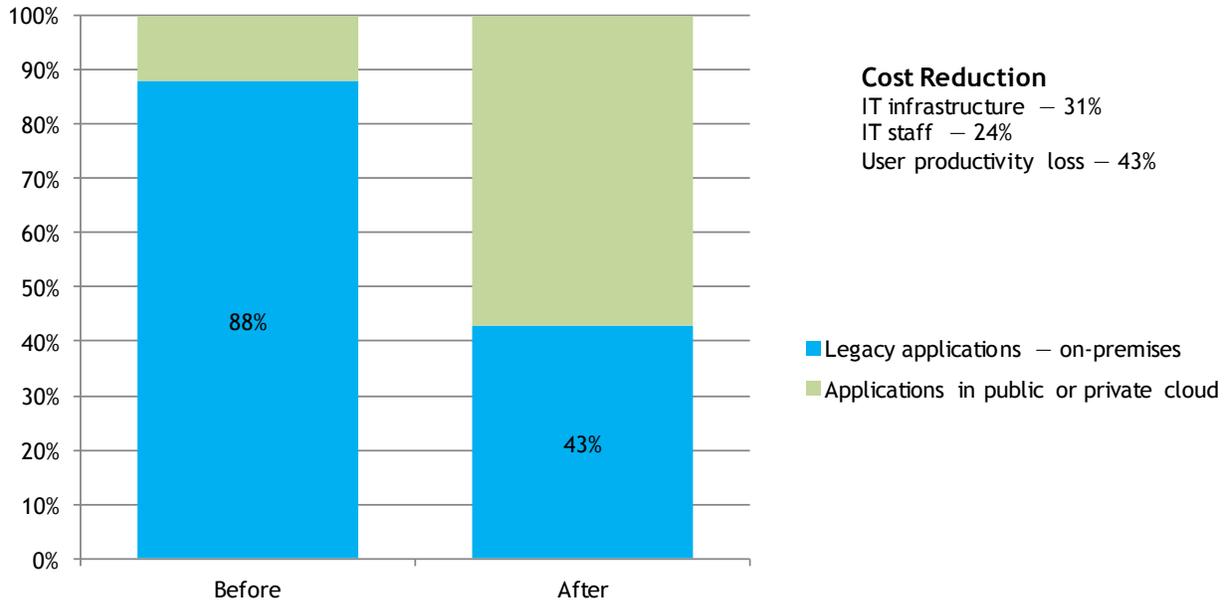
KPI	Before Simplification Initiative(s)	After Simplification Initiative(s)	% Improvement
Mean time to deploy new services (days)	24.3	12.5	48.6
Percentage of IT staff time required to "keep the lights on"	65	37	43.1
Time to develop new apps (months)	24	21	12.5

Source: IDC, 2014

In particular, IDC analyzed the benefits of application modernization in IT simplification initiatives. As shown in Figure 2, in areas affected by simplification initiatives, study participants shifted their mix from 88% legacy/on-premise applications to 43%, leading to cost reductions of 31% to manage IT infrastructure, 24% on IT staff, and 43% in lost productivity due to system downtime.

FIGURE 2

Simplification Strategy – Modernizing Applications



Source: IDC, 2014

Additional IT benefits/cost reductions among our respondents include:

- **Reduced staffing needs/head count in IT.** This can also manifest itself in deferred hiring, so IT can support business growth while keeping head count level. Smith at AutoTrader said, "We've shifted more [IT staff] to growth initiatives and transformational projects versus just keeping the lights on."
- **Reduced server footprint by consolidating on an engineered platform such as Oracle Exadata.** This can reduce server infrastructure costs by \$98 per user per year and avoid another \$280 in server management in annual costs per user.
- **Changing server mix to lower-cost hardware.**
- **Vendor consolidation/reduced licensing expenses.** "I have been able to consolidate vendor licenses, which leads to cost avoidance," said the VP of Infrastructure at the U.S. retailer.
- **Improved system performance.** Rudzinsky at Hologic observed, "Our ERP system is 60% faster on Exadata than in our other environment."

"We've shifted more [IT staff] to growth initiatives and transformational projects versus just keeping the lights on."

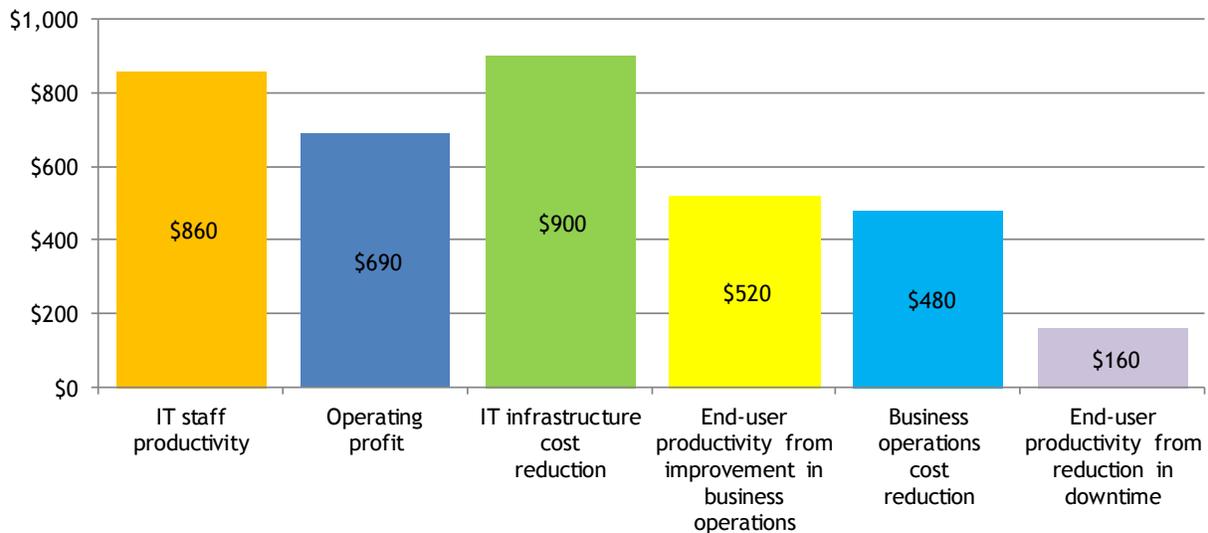
- **Easier change management due to having fewer moving parts.**
- **Better scalability due to having one pool of resources to pull from rather than having pockets of IT.** "Running on consolidated systems gives us better scalability," said the VP of Infrastructure at the U.S. retailer. "I used to have pockets of capacity I could draw from; now, I draw from a pool of resources. That gives me the ability to respond to business needs better."

Overall Benefits

Overall, IDC estimates that the nine organizations in the study were able to realize average annual benefits of \$3,610 per user through their simplification initiatives (see Figure 3). Note that while this figure represents the average estimated benefit across the nine organizations in this study, the benefits will vary by specific organization and industry, and in fact, one of the companies in this study had significantly higher benefits per user. And given that the average number of users in the nine companies we interviewed is 23,000, the estimated average annual benefits were around \$83 million.

FIGURE 3

Annual Benefits per User



Source: IDC, 2014

THE IDC SIMPLIFICATION ROAD MAP

Complexity is part of the IT landscape, with many causes and sources. And while complexity is often necessary to drive sophisticated solutions and meet demanding user requirements, it can also be a source of cost and competitive disadvantage. The core competencies of most enterprises are not in datacenter operations, and they should look to simplify their infrastructure so they can put their primary focus on driving competitive differentiation, productivity, and innovation.

But what steps should an organization take to simplify its IT infrastructure? IDC has developed a Simplification Road Map designed to help companies attempting to reduce complexity in their IT infrastructure. Key components of the road map include:

- **Secure strong executive support.** This advice was provided by nearly all companies interviewed. Successful simplification projects require deep-seated change, not only in the IT organization but also often among users and lines of business. Success requires that projects be driven from the top, with active executive engagement throughout. It is not enough for executives to simply show up at the kick-off meeting and assume implementation-level staff can take it from there. "If you start at the top, it's much easier to get buy-in around the organization," observed Rawson at VocaLink.
- **Take an entrepreneurial approach.** While a few of the companies we interviewed followed an incremental approach to simplification projects, most found it best to use an entrepreneurial approach consisting of replacing outdated infrastructure or building out new IT infrastructure to support new business opportunities. IDC observes that you can't simplify infrastructure by adding new layers of integration, UIs, or applications. This is akin to adding more spit, tape, and Band-Aids to an already suboptimal solution or, to use another analogy, adding new layers to the onion. The problem is that the onion has too many layers already, and to truly simplify IT, most organizations found they needed to replace their outdated infrastructure entirely with a simpler, consolidated, modern infrastructure that was better adapted to suit today's demands. This could consist of simply consolidating applications onto fewer servers or could mean the use of converged and integrated systems.
- **Migrate to third-party service providers and/or the cloud.** Most enterprises are not in the datacenter business. Just as they don't generate their own electricity, build the vehicles in their fleet, or shoot and produce their advertisements, for most businesses, it may not make sense to own and operate the bulk of their IT infrastructure. Sourcing these services from companies with the necessary scope, scale, and expertise not only can free up valuable resources to focus on core operations but also can improve the quality of services for end users. "Our traditional IT services are becoming less complex as we use cloud services and cloud applications," said Rudzinsky of Hologic. "We are taking something complex and moving it outside."
- **Perform "agile" software development and rollouts.** Agile development replaces the old waterfall development cycles with a more incremental approach, leveraging adaptive planning and rollout cycles and taking advantage of expertise and input from cross-functional teams. It enables organizations to respond more quickly to changes in the market and keep pace with more rapid change. Key success factors include getting down to the user level and documenting specific processes and pain, collaborating with customers and end users, and adapting quickly to changing circumstances.

"If you start at the top, it's much easier to get buy-in around the organization."

"Our traditional IT services are becoming less complex as we use cloud services and cloud applications. We are taking something complex and moving it outside."

CONCLUSION

Complexity is a fact of life in today's IT infrastructure. While it is often a necessary price to pay to provide sophisticated solutions and high-quality user experiences, it is also something that can be avoided or minimized using a variety of tactics, including consolidating and modernizing applications, using better automation and integration tools, adopting converged infrastructures, and outsourcing the complexity to a third-party provider.

Oracle customers – interviewed by IDC – that engaged in simplification initiatives achieved a variety of benefits, including improved IT staff productivity, reduced operating costs, and reduced IT infrastructure costs. Using the new IDC Complexity Index, organizations can assess the state of their own IT complexity, and following the IDC Simplification Road Map, they can chart a course to begin achieving similar savings of their own.

APPENDIX: INTERVIEWS CONDUCTED

Table 5 provides details of the interviews conducted for this project.

TABLE 5

Organizations Interviewed for This Project

Organization	Name	Role	Sector	Region
Aeromexico	Benjamín Hernández Sepúlveda	CIO	Aviation	Latin America
Atlanta 311	Joann Butler	CRM Director	Government	United States
AutoTrader	Ed Smith	CTO	eCommerce	United States
General Dynamics	John Monczewski	Director BI/EPM	Defense	United States
Hologic	David Rudzinsky	SVP Information Services and CIO	Medical devices	United States
INC Research	Bill Hayfer	VP of Business Systems	Biopharmaceutical support services	United States
Major U.S. retailer	Anonymous	VP of Infrastructure	Retail	United States
U.S. Army	William Saxon	Lieutenant Colonel, Force Management Enterprise Division Chief	Government	United States
VocaLink	Chris Rawson, David Gilmore	COO, Service Operations Director	Financial services	Europe

Source: IDC, 2014

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