

A Forrester Consulting Thought Leadership Paper Commissioned By IBM

Systems Of Engagement Demand New Integration Solutions — And A New IT

IT's New Opportunity For Business Relevance Lies In "The Age Of The Customer"

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FORRESTER

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Executive Summary

Mobile apps and other “systems of engagement” are essential to meeting customer expectations for personal attention, immediate response, and self-service. Do enterprises have the technology foundations to deliver this new generation of customer-engagement applications? Who will provide systems of engagement, and how? In January 2013, IBM commissioned Forrester Consulting to find out. Forrester’s hypothesis: New systems of engagement will require new technology investments — particularly in integration technologies — and corporate IT’s role in delivering these systems is not yet assured. We crafted survey questions to test this hypothesis and fielded them to 423 IT and marketing decision-makers in the US, France, Germany, and the UK.

The survey reveals that integration with back-office systems is the biggest barrier to consumer-facing systems of engagement, and yet most enterprises aren’t investing to remove that barrier. Rather, security, CRM, and analytics are the top-priority investments. Further, the survey strongly suggests that IT’s role in delivering systems of engagement will be as much solution and resource broker as end-to-end delivery organization.

The survey results strongly suggest that a rising tide of systems of engagement will soon rearrange the landscape of IT organizations, technologies and architectures, budgeting and funding, and governance. IT leadership can and should help guide their organizations through the transition in partnership with their colleagues in marketing, sales, and customer support.

As one respondent told us, integration challenges never end and always change: “As we build more customer-facing systems, our integration needs grow.”

Key Findings

Forrester’s study yielded three key findings:

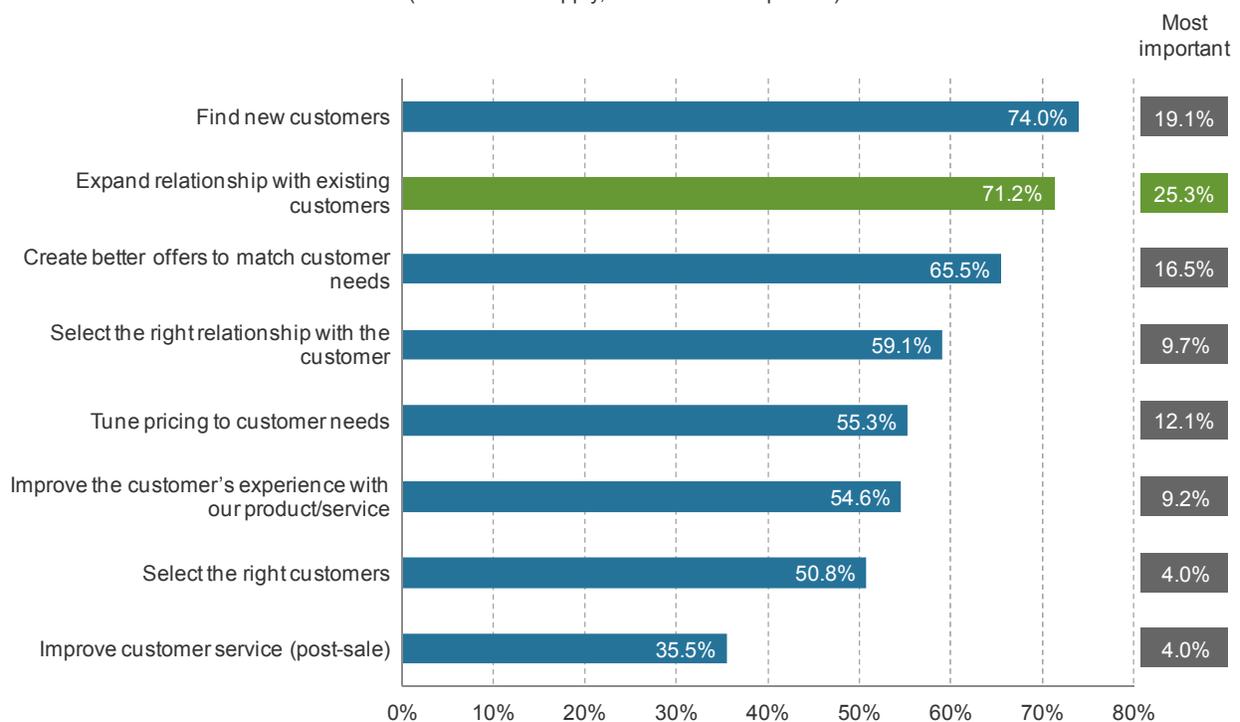
- **Improving the online experience is a high priority among customer initiatives.** Customer expectations are both rising and changing, and these expectations are now requirements driving systems of engagement. Consumer demands for individual attention and B2B buyers’ needs for self-service can only be satisfied through a combination of websites, mobile applications, self-service sites, and other applications fostering individualized, contextual customer interactions.
- **Enterprises need the right technology investments for customer interaction systems.** The Web, mobile, and cross-channel apps that enterprises build to attract, service, and retain customers are the front ends of “systems of interaction” that also include back-office business applications. Enterprises need several key technologies for these systems of interaction, and back-office integration should be at the top of the priority list.
- **IT will likely broker and guide — but not own — end-to-end systems of engagement delivery.** IT leaders can (and should) position themselves to advise on strategy and technology, organize projects, provide key shared services, and select partners to deliver systems of engagement. But IT will not own all aspects of systems of engagement and interaction. External agencies and consultants will do much of the delivery, and business leaders will control much of the funding for systems of engagement projects.

IT At The Dawn Of The Age Of The Customer

Welcome to the “age of the customer.” Finding vast pools of new customers is unrealistic, and so business growth depends primarily on expanding your relationships with the customers you already have (see Figure 1). New customers are welcome, but your best chance of growing revenue is getting more from those customers who know and love your firm.

Figure 1
Making Today's Customers Happy Is The Top Priority

“Which phases of the customer life cycle is your organization trying to improve with its new customer investments?”
(Check all that apply, indicate most important)



Base: 423 IT/marketing professionals

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, Q1 2013

Those customers — both consumers and B2B buyers — are as empowered with information, networks, and devices as you and your people are. Indeed, your customers may hold a technology advantage over you as they demand value and personal attention, quick responses, fun and direct online experiences, and the ability to help and serve themselves.

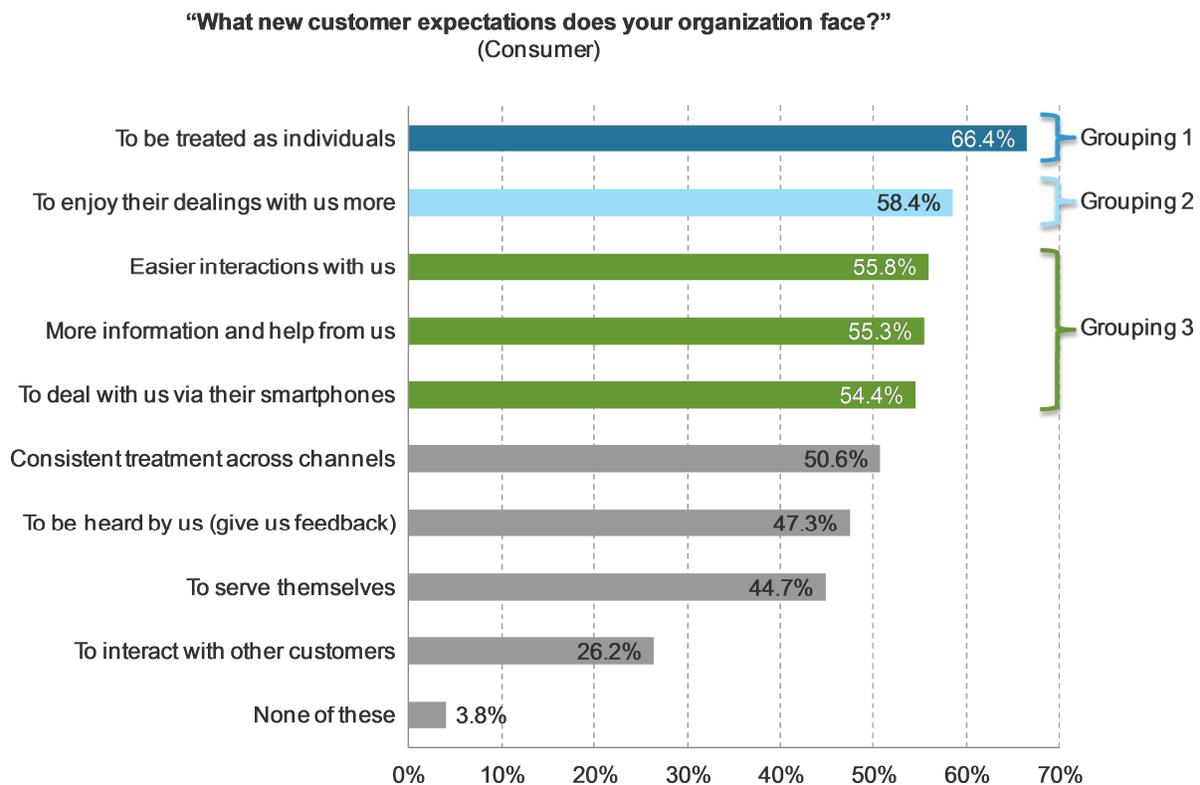
And consumers can easily switch to a competitor if your enterprise doesn't live up to their expectations. The image of the fickle, ever-demanding consumer in Western societies may be a cliché, but our survey results say it is real.

Respondents told us exactly what kinds of new customer expectations they face:

- Consumers: Interactions should be all about me.** This may be the second “Me Decade.” Respondents reported that the top new expectation from consumers is recognition of them as individuals (see Figure 2). Next on the list is fun: Consumers expect their interactions with companies to be enjoyable. Third on the list is utility: Interactions (and presumably transactions) should be easy to accomplish, contain all of the information needed, and be available on smartphones (for convenience and immediacy).

Figure 2

New Consumer Expectation: Treat Me As Me (Not A Member Of A Segment)



Base: 423 IT/marketing professionals

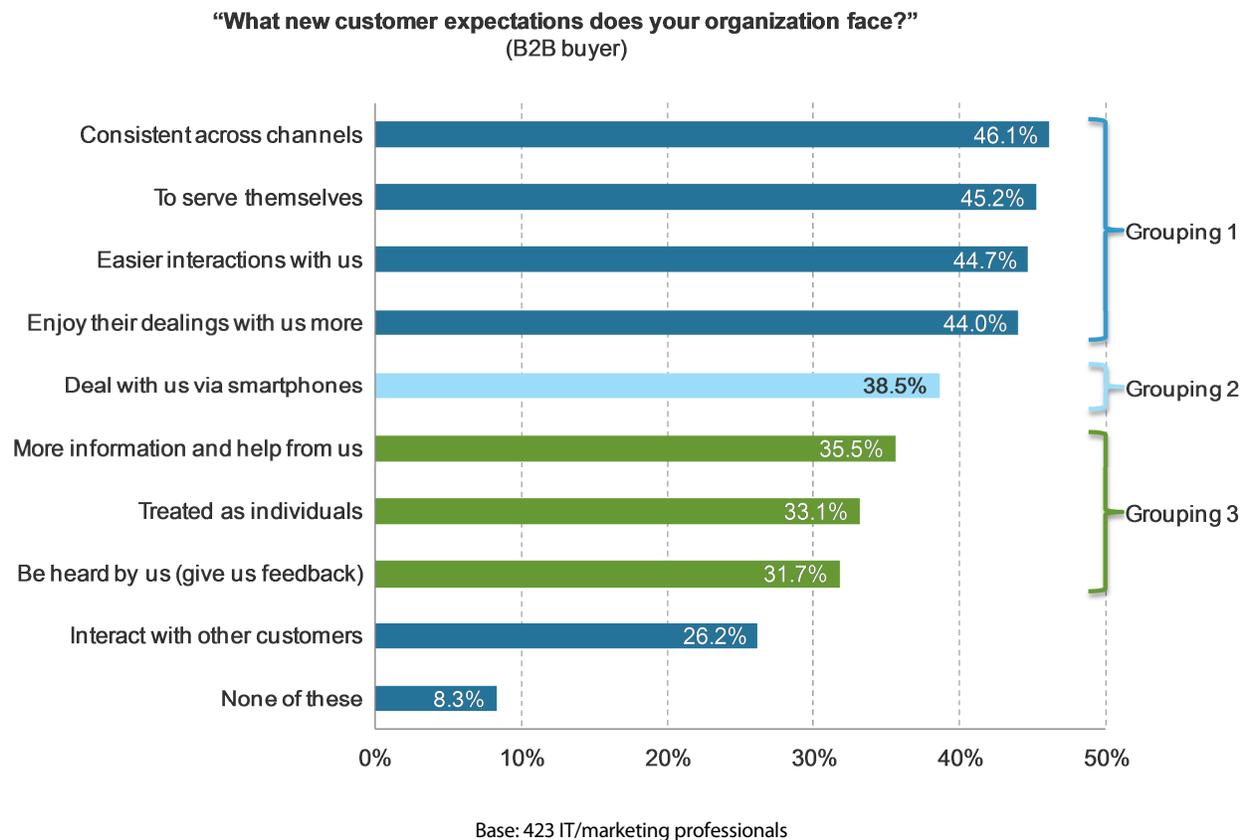
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, Q1 2013

- B2B buyers: Interactions should be convenient and efficient.** Respondents reported that their B2B buyers have new expectations of self-service and easy efficiency (see Figure 3). The top concern was consistent treatment across channels, indicating that many B2B customer relationships are now conducted through several modes of interaction, each of which should contribute to a common context. Note that B2B buyers, like consumers, want business interactions to be enjoyable.

The survey results tell us that consumers and B2B buyers have different expectations, which makes life that much more difficult for enterprises that have both kinds of customers. There is no one-size-fits-all solution to satisfying new consumer and B2B buyer expectations.

Figure 3

B2B Buyers: Give Me Easy Self-Service



Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, Q1 2013

Your Marketing Partners Respond By Working Smarter And Faster

Enterprise marketing, sales, and customer-support leaders must, of course, adjust their strategies to address these new customer expectations. Our survey indicates that these adjustments won't occur twice a year or even once a year, but increasingly, once a month. What's scary for IT about this trend: Equipped with the ability to rapidly revise customer segment models, respondents then will demand faster changes to their enterprise's operational procedures and systems:

- **Customer-segment analysis and revision is speeding up.** Among survey respondents, 21% reported that today they revise their customer segments *within a month*. During the next 12 months, this percentage shifts to 41%, and during the next two years, the percentage rises to above 50% (51%).
- **Faster customer-segment revisions will drive faster systems change.** Today, 7% of respondents reported being able to change procedures and systems within a month. Within two years, 33% expect to be able to do so.

The age of the customer requires both new kinds of IT systems and new, faster responsiveness by IT groups to evolve those systems to keep pace with customer expectations.

Challenge: New Systems For Customers Required

Enterprises will build new IT systems to satisfy the new expectations of their customers. Sometimes, they'll extend existing applications and systems to address demands, as well.

Two concepts describe these new IT systems:

- **Systems of engagement.** Systems of engagement are a category of IT applications. Geoffrey Moore coined the term to describe IT systems that support communication and collaboration with customers. Moore contrasts systems of engagement with “systems of record,” the IT systems that maintain the integrity of core business data and processes.
- **Systems of interaction.** Systems of interaction is an architectural approach to systems of engagement. This term is used to describe an engagement app that is fully integrated with back-office systems and processes. Most systems of engagement depend on transactions, processes, and content managed by back-office systems and are, therefore, built as systems of interaction.

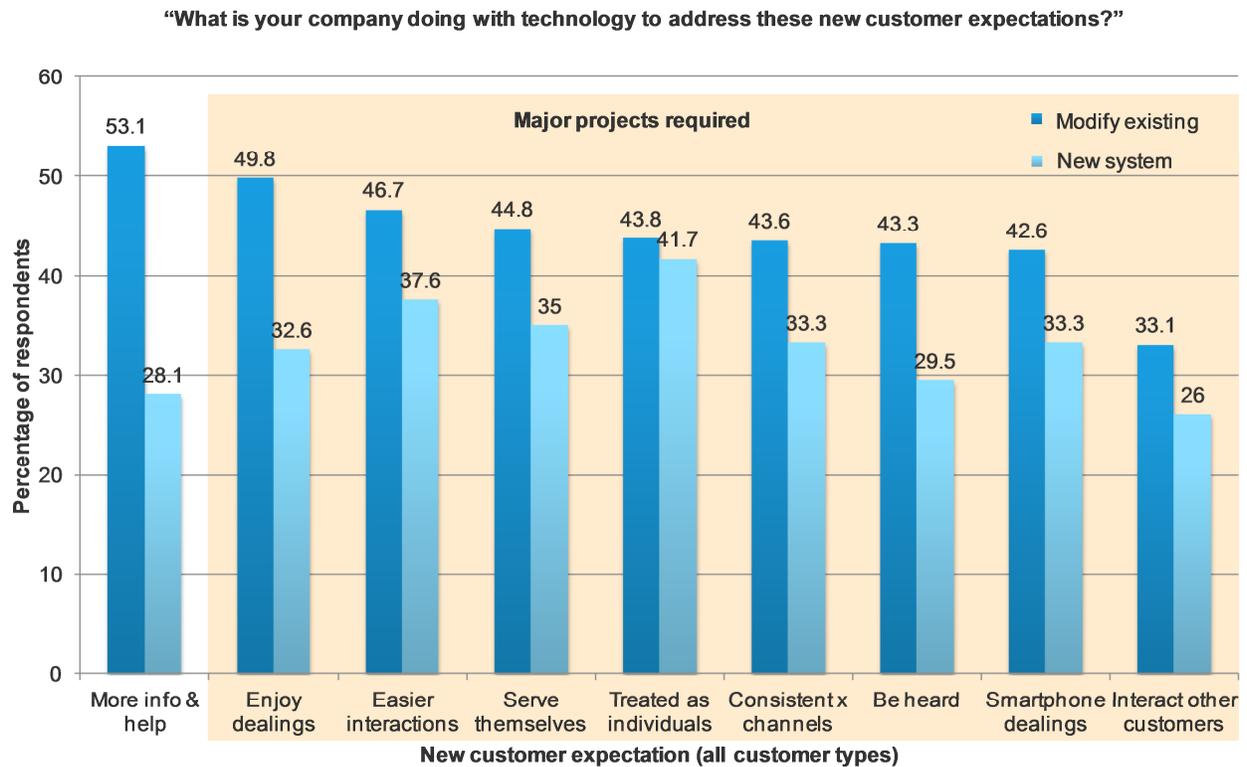
Our respondents strongly suggest that spending on systems of engagement — particularly those built as systems of interaction — is rising and will continue to rise during the next several years.

New IT Systems To Address New Customer Expectations

Of the nine kinds of new expectations, most require substantial modifications of existing applications (see Figure 4).

Figure 4

Many New IT Systems Are Required To Satisfy New Customer Expectations



Base: 423 IT/marketing professionals

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, Q1 2013

For many firms, five of the new customer expectations demand brand new systems:

1. **Expectation: “to be treated as individuals.”** Targeting individuals and even microsegments of customers requires expanded (often vastly expanded) collections of both historical and real-time information, as well as advanced analytics to determine the customer’s behavior now (and predict future behavior), as well as the customer’s context.
2. **Expectation: “easier interactions with us.”** We find that to make interactions simpler, enterprises often must replace their eCommerce and portal front-end applications, as well as reorganize some of their back-office integration systems.
3. **Expectation: “to serve themselves.”** We find that customer self-service applications are almost always either new development or new packaged applications. Why? The logic behind these applications is much more extensive than the average web-access system.

4. **Expectation: “to deal with us via their smartphones.”** Smartphones — indeed, all mobile devices — are distinct technical environments, requiring new code. This is especially true when firms rely on native mobile applications for their customer interactions, but less true when they use mobile web designs.
5. **Expectation: “consistent treatment across channels.”** Cross-channel systems identify customers and their context, and coordinate session state, content, and master data. Each of these activities calls for new IT investments — in identity management, event collection and analysis, content and master-data management, and application servers and gateways. In some cases, cross-channel systems will require enterprises to undertake many new projects.

Biggest Barrier To Systems Of Engagement: Inadequate Back-Office Integration

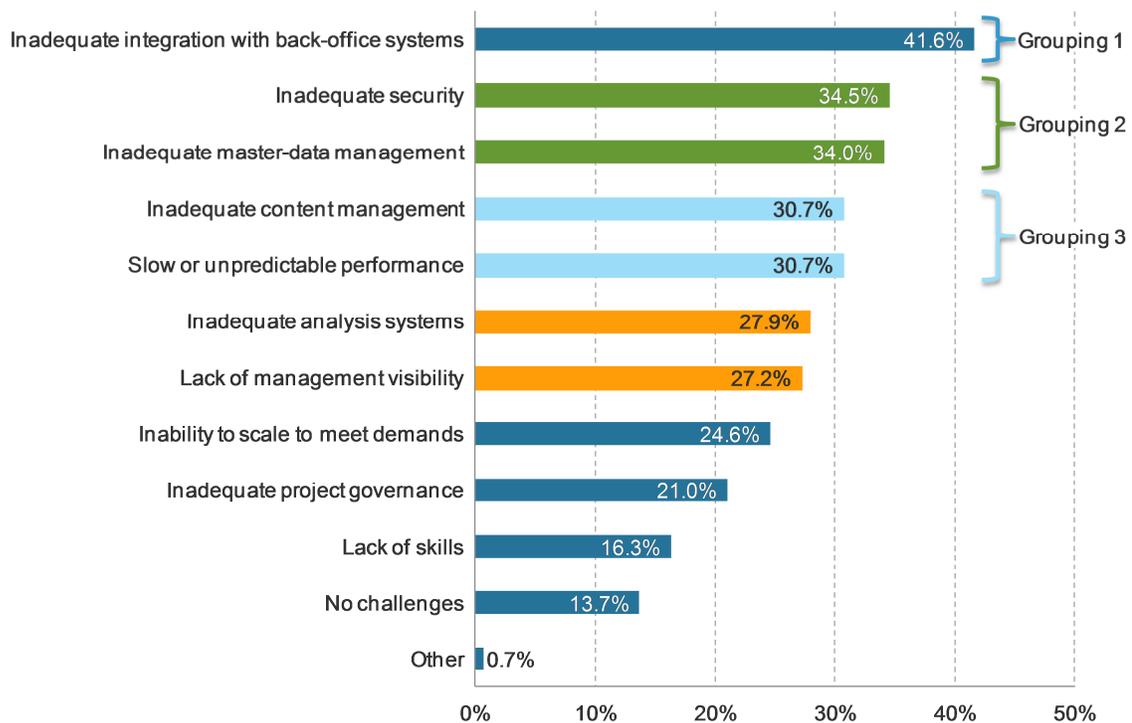
Among the nine expectations we surveyed, these five seem to require new development most often. And each of these five illustrates that satisfying any individual new customer expectation requires appropriate technologies. But which technologies will be most important? To answer that question, we asked respondents for their biggest barriers to creating systems for their customers.

For consumer-facing systems, the top barrier by far is integration with back-office systems (see Figure 5). Despite 20 or more years of investment in messaging, integration brokers, SOA and ESBs, operational data stores, and all the rest, integration with the back office remains the top issue. It isn't that these prior integration methods have failed, but that systems of engagement require three new forms of integration. Specifically:

- **Collection, analysis, and delivery of information in “real time.”** In this context, *real-time* means *immediately* or *as it happens*. Most back-office integration solutions are built to handle historical information. Many address bulk or batch access only.
- **Information delivery to and communications with new devices.** In systems of engagement, the “client” is often a phone or other portable device rather than a PC or a desktop browser.
- **Management of interactions across channels.** Consumers often start an interaction with your enterprise through one device (say, a smartphone) and want to continue that interaction through a different channel (say, in one of your stores). Many consumer-oriented organizations today deal with their customers through at least three or four channels — web browsers, stores, call centers, smartphones, and other mobile devices.

Figure 5**Top Barrier: Inadequate Integration With Back-Office Systems**

“For your key audience, what are the biggest technical barriers to creating effective customer-facing systems?”
(Consumer)



Base: 423 IT/marketing professionals

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, Q1 2013

Also, systems of engagement will add new requirements for messaging, integration brokers, SOA and ESBs, and operational data stores. Integration requirements never stop flowing, due to mergers and acquisitions, ongoing changes and upgrades to back-office systems, and emergence of new business-process requirements for integration that existing solutions don't address.

The other top barriers to consumer-facing applications are also familiar, but still require new investment. Security is always a concern, and risks always evolve. Master data management (MDM) is key to creating unified views of customers. And content management solutions organize the documents, images, media, apps, and other forms of content required to support customer interactions. Enterprises have made major investments in security, MDM, and content management for years, yet must now extend those investments.

Systems of engagement for B2B buyers don't exactly fit this pattern. For those applications, performance, security, and MDM are the top concerns, but integration with back-office systems barely registers. Why?

- **Most B2B applications employ standardized data and message formats.** These formats make satisfying their integration requirements straightforward. Many systems of interaction for B2B buyers are also mature and change much more slowly than consumer-facing systems.
- **Most B2B applications manage sensitive, time-critical information.** Your B2B systems of interaction are often on your customer’s critical path to complete a business process. Slow or unreliable responsiveness in your B2B systems can compromise or even prevent your customer’s transactions with its customers.

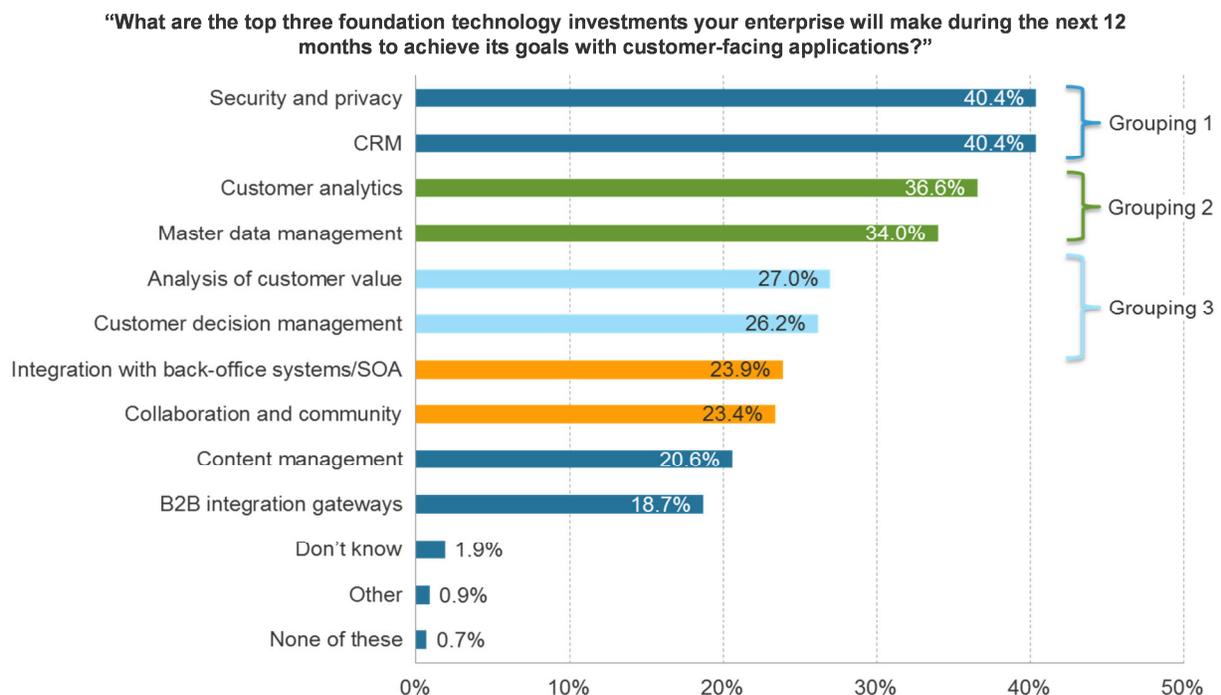
Investment Priorities May Not Eliminate The Biggest Hurdle

Survey respondents cite their biggest barriers, but do today’s investments for systems of engagement address those barriers? Only partially. Respondents ranked “integration with back-office systems (including SOA)” seventh on a list of 10 potential investments (see Figure 6). You’d think back-office integration would be top of the list. Security ranked first and MDM fourth on the list of top priorities, but CRM, analytics, and decision management appeared much higher on the list than back-office integration.

The findings suggest that many enterprises are enamored with advanced analytics — which is a hot IT category — and are underinvesting in basic integration projects. These priorities may also represent respondents’ belief that relatively low investment is required to solve their back-office integration inadequacies.

Figure 6

Top Three Investment Priorities Misaligned With Biggest Barrier



Base: 423 IT/marketing professionals

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, Q1 2013

Enterprises May Starve Systems Of Engagement Of Funding

Funding is a key challenge for systems of engagement. Firms have many IT projects, not all of which produce systems of engagement. The key for any organization is to sensibly shift the balance of funding from systems of record to new systems of engagement. Our survey suggests that the shift to these customer-facing systems may be happening too slowly:

- **Much less than 25% of IT spending goes to customer-facing systems today.** Today, almost half of respondents (45%) report that their organizations are devoting between 10% and 25% of their *IT spending* (not just their IT budgets) to systems of engagement (“customer-facing systems”). Only about 31% of respondent organizations devote in excess of 25% of their IT spending to systems of engagement today.
- **Spending on systems of engagement will grow, but perhaps not fast enough.** The trend toward devoting a greater portion of IT spending to systems of engagement is strong, with 57% of respondents expecting to devote in excess of 25% of their IT spending to systems of engagement. That’s a big rise in 12 months (from 31%), but given the optimistic view that reported plans usually represent, there is cause for worry about underinvestment in systems of engagement.

The “systems of interaction” concept is helpful in designing spending priorities for new customer-facing systems. Much of the focus in systems of engagement today is on the front end, leaving back-end services to go begging. In fact, sustaining an ongoing program of great customer experiences requires substantial investment in back-end integration and services. By keeping the focus on systems of interaction, you can ensure funding decisions take into account the entire picture, not just the front end.

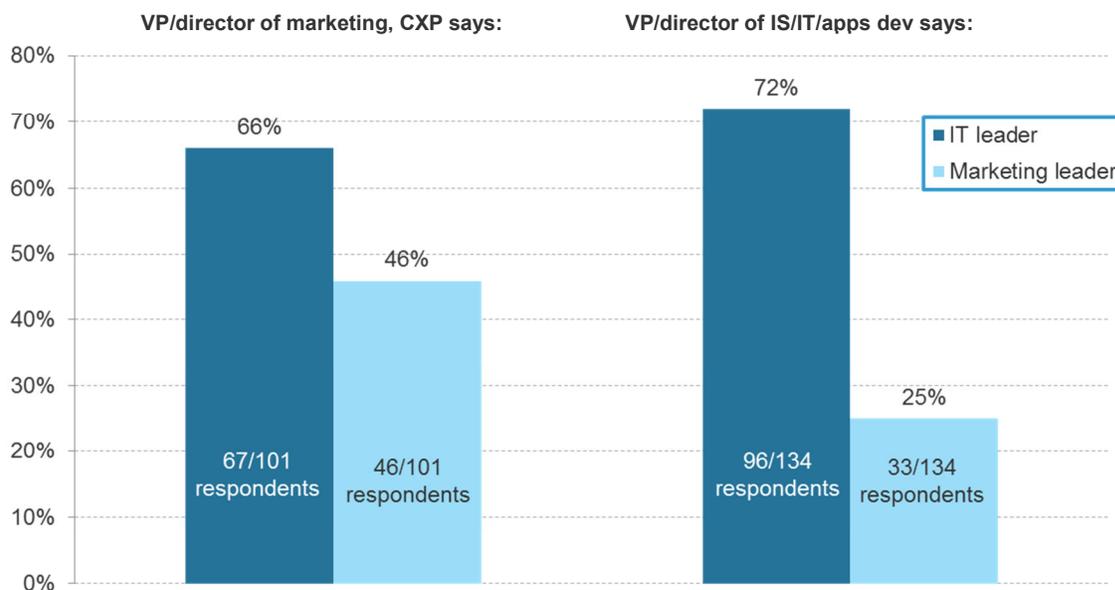
IT’s Traditional Organizations Aren’t Aligned For Systems Of Engagements

The last challenge for IT in the age of the customer is organizational. What will IT’s role be?

Our survey findings on who owns technology decisions for systems of engagement illustrate IT’s transitional position. IT leaders and marketing leaders disagree on who owns these decisions, with marketing leaders claiming ownership more often than IT gives them credit for (see Figure 7). We believe the difference represents the episodes in which marketing leaders, frustrated with IT’s inability to serve their needs, take their IT spending on systems of engagement to outside agencies and consultants.

Figure 7**IT And Marketing Leaders Disagree On Who Owns System Of Engagement Technology Decisions**

“In delivering these new customer-facing applications, please indicate the influence of the following role players in selecting technology solutions and providers for them.”
(Who owns?)



Base: 423 IT/marketing professionals (all respondents), 134 VP/DIR IS/IT app development, 101 VP/DIR marketing/CXP

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, Q1 2013

Solution: Make The Right Investments In Tech, Organizations

The age of the customer introduces deep changes to the ways organizations deal with their customers and to the systems enabling those interactions. Every organization needs a strategy that recognizes the shifts from past technologies, funding priorities, and organizational structures to models aligned with the imperatives of customer-focused organizations.

Technology Investments And Priorities Aligned With Systems Of Interaction

First, a technology strategy for the systems of engagement must prioritize investments *and focus on systems of interaction* as the primary architectural approach. There are so many technology investments to be made, and they can't all be made at the same time. Where to begin?

For most enterprises, the systems of interaction technology strategy must address several types of applications. Technology solutions only applicable to, say, your organization's mobile applications will promote duplicate investments for, say, your web applications. Redundant investments will waste resources. Respondents' list of priorities

suggests a list of technology investments that will support multiple types of customer-facing systems (see Figure 8). Improving integration with back-office systems is at the top of most lists.

Figure 8
Build Your Technology Investment List From Services Needed By Your Key Scenarios

“On the list below, indicate which challenges are most difficult (challenges) for each kind of application listed.”
(Numbers indicate how respondents ranked each issue)

Gap	Type of application			
	Mobile	X-channel	Web	B2B
Integration with back-office	1	1	4	8
Security	2	3	2	3
MDM	3	4	1	4
Content management	4	2	6	10
Performance	5	6	5	2
Scale	6	8	7	7
Management visibility	7	7	3	5
Analysis	8	10	6	6
Project governance	9	5	9	11
No challenges	11	9	8	1

Base: 423 IT/marketing professionals

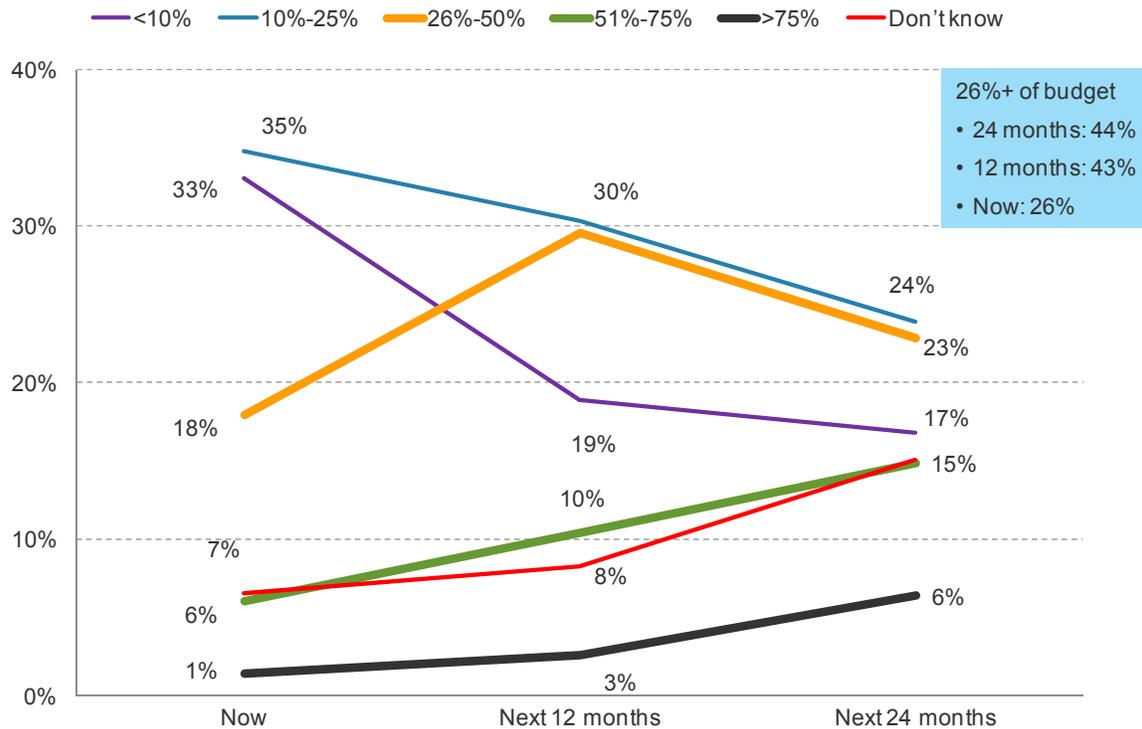
Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, Q1 2013

Funding And Budgets Aligned With Systems Of Interaction

Many enterprises today fund their systems of engagement from two sources — the IT budget and external spending often associated with “rogue IT.” Our respondents, which include a large percentage of IT professionals, expect more and more funding for systems of engagement to come from outside the IT budget (see Figure 9).

Figure 9
Funding For Systems Of Engagement From Outside Of IT Will Grow

“What portion of your enterprise’s spending on IT for customer-facing systems is funded outside of the IT budget? How will this change in the future?”



Base: 423 IT/marketing professionals

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, Q1 2013

This is not a new pattern; business leaders have always funded applications outside of the IT budget. But given the amount of IT work to be done to enable the age of the customer, two disconnected pools of IT spending invites waste, slow response, and failure.

Respondents we contacted were well aware of this issue and felt their organizations were doing a fairly good job of managing the risk that outside-of-IT spending would spin out of control. Still, as the amount of funding flowing into systems of engagement rises, so do the risks of disconnected initiatives and investments.

IT And Business Organizations Aligned For Systems Of Interaction

Our survey suggests that most IT and marketing organizations are not well aligned. In addition to our finding of different opinions about the ownership of technology decisions, we also found divergence in views of which customer expectations should be addressed first and on how much of the IT for systems of engagement is funded outside the IT budget (IT leaders believe their budgets contain more of this spending).

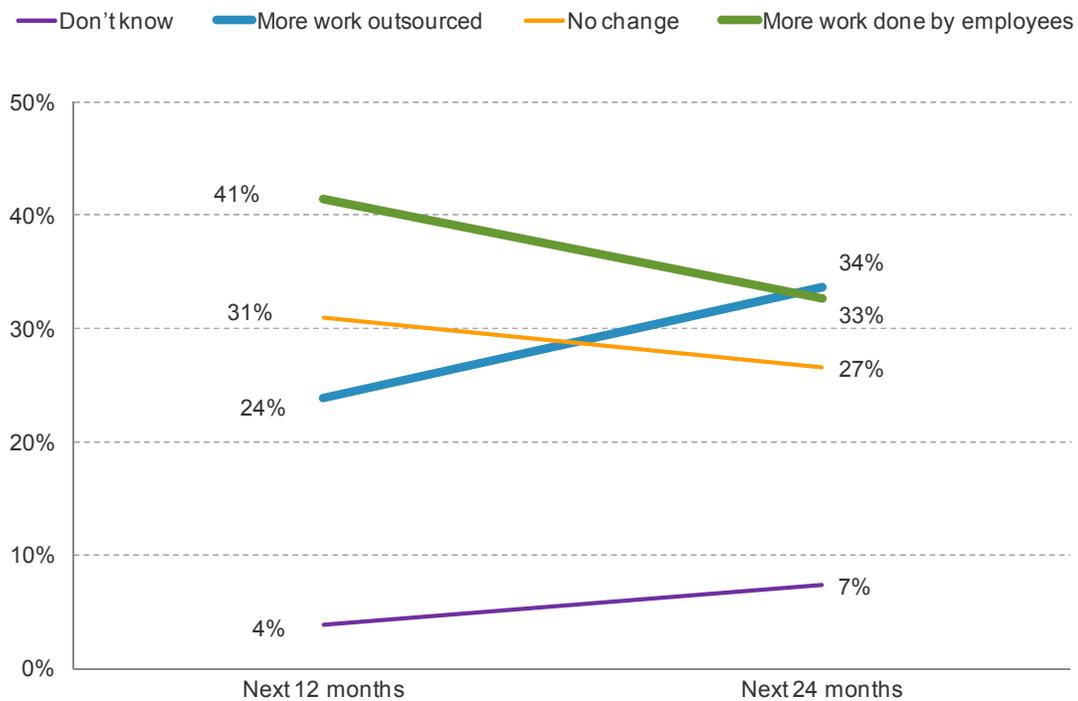
Alignment between IT and the business in the age of the customer will be different from what it was in past eras. Our survey findings illustrate the major differences:

- **IT will be a systems-of-interaction broker.** Our findings suggest that IT leadership's primary role in systems of engagement will be as a broker (see Figure 10). The broker role is different from IT's traditional end-to-end ownership of all technology-based projects. Brokers find and help select resources, employees, and consultants to support systems of interaction. IT leaders should, for example, advise on the best external-hosting partner for a given project. IT leaders should help evaluate packaged solutions and services (e.g., video transcoding services) and propose innovative new uses of technology to achieve customer goals.

Figure 10

Ever More Systems Of Engagement Work Will Be Outsourced

“In delivering new customer-facing applications, what portion of the work is done by your enterprise's employees? What percentage is done by external parties, including consultants, agencies, and systems integrators? How will this change . . . ?”



Base: 423 IT/marketing professionals

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, Q1 2013

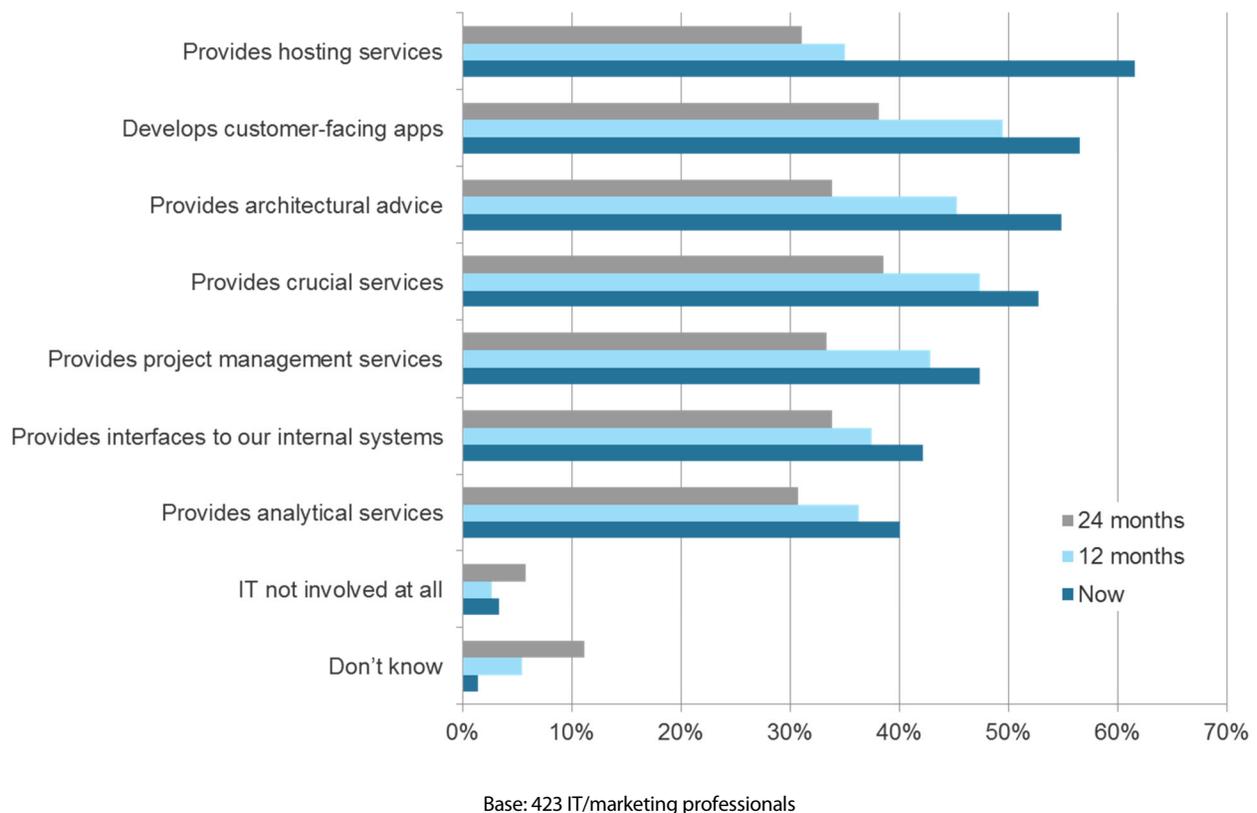
- **IT will own foundation services and perform selected development tasks.** In addition to brokering resources and people to support systems of interaction, IT will perform crucial technical work. Chief among these responsibilities will be providing integration, security, content management, and other foundation services, as well as project management support. IT will also continue to provide application development and delivery

services. But that development work will often be shared or split with external agencies and consultants (see Figure 11). IT's role as a data-center provider (hoster), as an architectural advisor, and as a development shop will decline.

Figure 11

IT's Work On Systems Of Engagement Will Shift From Hosting To Providing Services

“Which of the following statements best describes your corporate IT department’s role in the creation of new customer-focused information systems?”

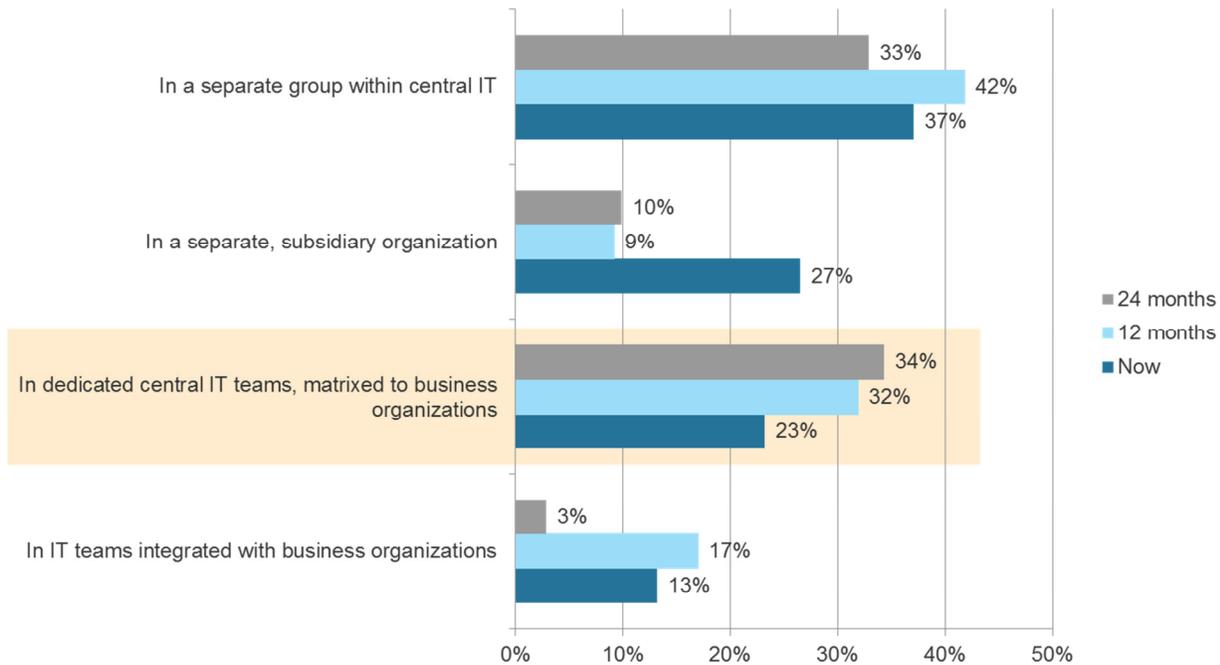


Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, Q1 2013

- IT can expand its leadership role.** Today, most IT leaders have their greatest influence over systems of record. The rise of systems of engagement and systems of interaction presents an opportunity to expand IT's historical leadership. Someone has to guide and perform the IT work required by systems of engagement and interaction — and there are many good reasons to seek this leadership in-house. IT leaders who are isolated must end that isolation to attain a broader leadership role. Many respondents expect to see “matrixed” organizations that explicitly connect IT and business teams (see Figure 12). But there's still little agreement on this point.

Figure 12**Matrixed IT-Business Teams Will Rise**

“How does your enterprise organize its IT employees who work on customer-facing applications? Will your enterprise adopt a new model in the future?”
(Check as many as apply)



Base: 423 IT/marketing professionals

Source: A commissioned study conducted by Forrester Consulting on behalf of IBM, Q1 2013

- IT must design faster, more flexible delivery processes.** Application delivery processes optimized for system integrity miss the key need of systems of engagement — fast delivery and adaptability. Systems of engagement projects move faster, from idea to initial delivery to first update, than other kinds of IT projects. Traditional requirements processes are too slow to keep up, and requirements are fuzzier than ever.

As one customer-information leader told us: “There’s no such thing as 360-degree view [of the customer] because I’ve created new data today that I didn’t have requirements for when I designed the solution. We have too many legacy environments that are only good for the original problems they were designed to solve. They are too big and too slow to deliver.”

Shared responsibility with business leaders is the overriding model in the age of the customer, and that shared responsibility must guide IT leaders on which work to keep and which to outsource, which new talents to acquire, which cultural norms to adopt and which to lose, and which technology services to provide and when. Yes; this is a lot of change to manage. But it is your path to continued and growing business relevance.

KEY RECOMMENDATIONS

First, help to determine what your enterprise needs to succeed in the age of the customer. Many IT organizations have found themselves caught short by a drastic shift in priorities within their organizations. However, it is never too late to start making contributions — particularly when the top barrier is integration with the back-office systems IT owns. Bring your knowledge of the business and its customers along with your technical “chops” to help your leadership determine its real goals for customers, its most pressing new expectations, and the most important systems of engagement. IT leaders should identify and put in place shared processing and storage, content delivery services, integration, and analytic foundations that will help reduce the cost of accommodating many systems of interaction on a common base:

- **Plot your technology strategy for systems of interaction.** You likely need more additional integration investment than you realize. Our findings suggest that for consumer-facing systems of engagement, back-office integration must be the top priority. The findings also suggest that many enterprises don’t recognize this is their reality. Commentary from survey respondents further suggests that the very approach to integration must be much more adaptable to accommodate new needs than it has been in the past. Back-office integration covers many solutions categories, ranging from enterprise service buses (ESBs) and message brokering to web API management.
- **Security and MDM should be high priorities as well.** Security is a close second among reported barriers to success with systems of engagement, followed by MDM. One respondent said that she reads about new security breaches and new kinds of security vulnerabilities in the news daily (or so it seems). Security is a moving target, and we can never relax our efforts to achieve it. MDM creates trusted sources of oft-used data about customers and products typically. And these sources of data are ever-changing. Content management leads the list of next priorities. Content management is crucial for mobile, web, and cross-channel applications. For some organizations, though, improving operational management visibility (and we presume control), performance, and scalability are almost as important to many enterprises.
- **Plot your funding strategy for systems of interaction.** Funding will inevitably be split between the IT budget and various line-of-business budgets. Design governance to ensure that these investments add up to a whole greater than the sum of their parts. Several of the respondents we spoke with rely almost exclusively on line-of-business funding for systems of engagement projects, with the IT budget funding the salaries of pros who build business cases, recommend and select technology, broker solutions with external providers, and provide shared services like security.
- **Plot your organizational strategy for systems of interaction.** Design an organizational structure that places your IT pros (and contractors as well) in close contact with the business leaders that conceive, justify, and ultimately fund your enterprise’s systems of engagement. The “matrixed” model that assigns IT pros to work in teams with business experts is likely to grow in popularity, but establishing separate groups devoted to systems of engagement within central IT is also a popular model. The most important attribute that any organizational approach must have: End IT’s isolation from business leaders.
- **IT must find and adopt methods that enable ongoing speed of delivery.** The pressure on IT to quickly adapt systems will be unrelenting. Every aspect of your IT group’s work on systems of interaction must be quick and flexible. The shared services you offer must be quickly adaptable to fast-evolving requirements. And the APIs you provide to integrate mobile apps and other engagement experiences must also be adaptable to new devices, channels, and use cases. Optimize everything your organization does for responsiveness.

Appendix A: Methodology

In this study, Forrester conducted an online survey of 423 quantitative respondents who work in companies with 5,000 employees or more in the US, the UK, France, and Germany. Survey participants included decision-makers with the following titles: CIO, vice president or director of IS/IT or application development, vice president or director of marketing, VP or director of customer experience, chief customer officer, chief experience officer, chief client officer, VP or director of eCommerce, eBusiness, VP or director of web/interactive/digital products, VP or director of fraud, VP or director of risk management and in the following industries: retail, financial services, healthcare, travel and hospitality, media and leisure, telecom, public sector, consumer products, and business services.

The purpose of the survey was to gather information about the challenges businesses face in evolving their existing systems to serve the needs of customer-facing applications using new mobile, social, and web channels. Respondents were offered a cash incentive as a thank you for time spent on the survey. The study began in January 2013 and was completed in February 2013.

Forrester also interviewed five survey respondents who completed the online survey. They were offered a cash incentive as a thank you for time spent speaking with Forrester. The interviews were completed in March 2013.

Appendix B: Supplemental Material

Online Resources

More information about Geoffrey Moore's systems of engagement term is available at <http://blogs.wsj.com/cio/2012/06/21/geoffrey-moore-the-next-decade-will-be-about-systems-of-engagement/>.