



IP Telephony

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IP-Enabled Contact Centers: Lowering Costs, Raising the Customer Experience

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Section 1: Executive Summary

Lowering the cost of raising the customer experience is a major imperative for most, if not all, businesses today. As a result, enterprises of all sizes are investing in multisite contact centers to improve the customer experience and reduce operating costs while addressing redundancy and business continuity.

This paper explores how Internet Protocol (IP) can be leveraged to lower the cost of enhancing customer service via the contact center. IP is a critical enabler for multisite contact centers, providing the underlying technology that enables enterprises to cost-effectively extend their contact centers to locations anywhere around the world — from regional satellite and branch offices to offshore outsourcers, hosted solutions and at-home agents — and deliver consistent, high-quality service.

As contact centers mature and take on more complex, high-touch customer transactions, enterprises are turning to IP as a cost-effective method of simplifying their operating environments and reducing total cost of ownership (TCO) while gaining a competitive advantage. The latest multisite contact center architecture accomplishes this by flattening multiple layers of routing logic and technologies into one simple layer; consolidating automatic call distributor (ACD) functionality and supporting applications; and extending the architecture to any location on an IP network.

For companies such as **ebookers.com** and **Delta Airlines**, contact center migration from a traditional TDM-based environment to IP has had tangible benefits — typically resulting in enhancements to contact center management, financial management and IT management. In addition to providing a look at how ebookers.com and Delta have successfully leveraged IP in their contact centers, this paper offers a checklist that can help other enterprises determine if IP is a viable solution for their contact centers.

Finally, the paper offers insight into some of the advantages that Avaya brings to the table when an enterprise is considering migrating to or expanding its use of IP in the multisite contact center environment.

Section 2: How IP-Enabled Contact Centers New Create Opportunities for Enterprises

IP, a communications technique for transporting data between two locations, is altering the technology landscape for multisite contact centers around the world. What's exciting about IP is that it can cost effectively move any transaction type — data, voice, video, email, etc. — anywhere in the world, enhancing business flexibility and eliminating the physical and geographical restrictions that previously limited how and where enterprises could use their contact centers.

Corporations have been using IP technology for close to 15 years. Serious adoption in contact centers began at the end of 2004, when vendors introduced functionally rich solutions to meet the needs of the most demanding end users. IP-enabled contact center applications provide enterprises with vastly simplified and flexible architectural alternatives for servicing customers. They reduce operating expenses and enhance organizational agility, enabling companies to respond rapidly to changing market dynamics and improve customer and agent satisfaction. These solutions usually have a payback of less than 12 months.

A Historical Perspective

Contact centers have matured rapidly during the past 30 years. The automatic call distributor (ACD) was introduced in the early 1970s to help enterprises route calls efficiently, to ensure that customers were serviced on a first come/first served basis, and to reduce the number of lost calls. ACDs were originally designed to handle a single site with all agents in one location. By the early 1980s, the limited physical

processing capacities of these single-site switches forced companies to build multisite environments, now called phone centers, where ACDs were interconnected via T1 lines provided by network carriers. The T1s were expensive, but provided a mechanism to allow two or more phone centers to share agents. The main challenges were ensuring that the T1 capacity between ACDs was adequate and addressing the routing complexity whenever more than three switches were interconnected.

By the mid-to-late 1990s, computer telephony integration (CTI) had matured as a service offering from the network carriers. Phone center technology had given way to more sophisticated call center solutions that provided advanced skill-based routing capabilities and could scale from 400 to 1,000 agents with a single ACD. The network carriers offered enhanced routing services that improved interoperability between different sites. However, each site still operated on a stand-alone basis and required a full set of call center systems, including: the primary infrastructure for routing and queuing (ACD), CTI for screen pops, interactive voice response (IVR) for customer self-service, logging functionality to record all of the calls, quality assurance (QA) applications to allow supervisors to evaluate agent performance, workforce management (WFM) for agent forecasting and scheduling, and many more. Economies of scale could be realized by sharing agents between sites, but certain routing and queuing inefficiencies were inherent in multisite operating environments. Additionally, network management costs and carrier fees were very expensive for companies that required these services to allocate calls among their physically dispersed sites.

By the end of 2004, IP contact center solutions had become viable for contact centers of all needs and sizes, anywhere around the world. With a single, fully integrated environment for routing and queuing voice transactions, IP-enabled contact centers eliminate the need for expensive network and carrier services. This new approach optimizes routing and agent performance by managing all representatives as one group, regardless of their actual physical location. It eliminates scalability limitations, allowing enterprises to interconnect as many diverse switches as they'd like, from anywhere in the world. Moreover, IP-enabled contact centers enhance efficiency by using only one set of applications for routing and queuing, CTI, IVR, recording, QA, WFM, reporting, etc., as data for all locations run through a centralized hub that directs traffic for all sites. (See Figure One.)

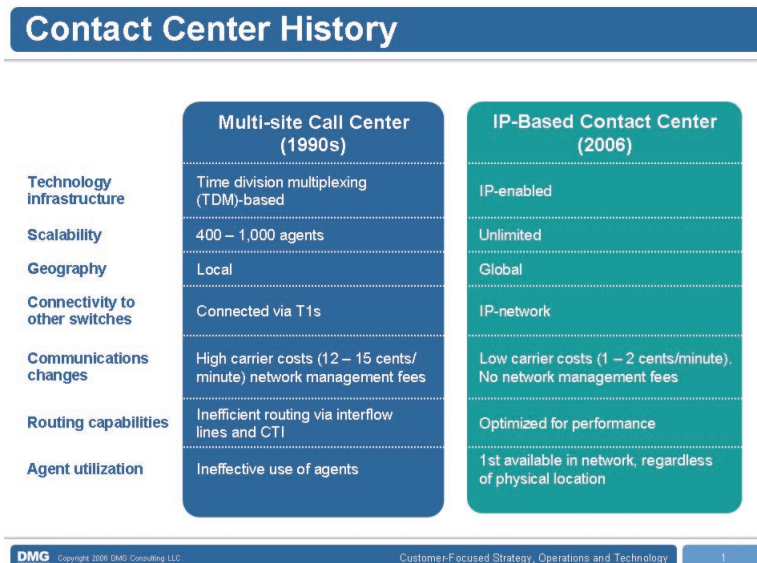


Figure One: The Evolution of Multisite Contact Centers

Today's Competitive Edge

Enterprises that want to gain or maintain a competitive advantage cannot afford to be limited by their communications infrastructure. The contact center must be a facilitator; it must be responsive to changing business dynamics. It should enable enterprises to streamline their contact center operating environment by consolidating multiple physical locations into one seamlessly integrated IP network that shares all supporting infrastructure and systems and does not require network service providers to route calls between sites. This positions companies to extend their operations and conduct business flexibly, enabling them to grow and expand rapidly as new opportunities arise. IP provides contact center managers with a cost-effective approach for simplifying their operating environments and reducing the total cost of ownership.

Section 3: Simplifying the Multisite Contact Center Architecture

In the new multisite contact center architecture, all incoming calls are delivered to a centralized IP gateway. The centralized gateway converts all of the traffic from its originating TDM format into an IP media stream. No advanced network management features are required to route calls to the central site for processing. Once the calls are converted into IP media streams, they are managed and tracked by the contact center's application functionality, which resides in a central hub. (See Figure 2.)

Each call is routed across the IP network to the next appropriate agent, regardless of whether they are located in a formal contact center facility, a branch office, a home office or at an outsourcer. If necessary, calls can be converted back to TDM to preserve the value of legacy equipment in specific locations. This approach **flattens** multiple layers of routing logic and technologies into one simple layer (i.e., it eliminates the need for network pre-routing, network services such as transfer-connect and ACD routing at each site.) It greatly simplifies call processing and eliminates the need for expensive network management, as calls no longer need to be transferred back and forth among multiple gateways and a central CTI router.

The new IP-enabled multisite architecture also **consolidates** ACD functionality and all supporting applications. Typically, each location in a multisite contact center will have its own applications for ACD/PBX, routing, queuing, voice messaging, multi-media, IVR, CTI, recording/QM, WFM, reporting, etc. Due to company mergers and reorganizations, a number of the ACDs and applications are likely to come from different technology generations and/or different vendors. The new multisite contact center architecture requires one centralized gateway and set of related applications and optionally, a second hub for redundancy. This greatly standardizes and simplifies ongoing system support and maintenance. It also significantly reduces operating expenses and administrative overhead.

Once in place, this architecture easily **extends** to any location that can be connected to an IP network. The centralized ACD functionality and supporting applications can be used to support secondary sites – remote locations, branch/retail offices, at-home agents or outsourcers, located anywhere in the world. This enables an enterprise to extend its activities rapidly and cost effectively to meet changing business requirements. Enterprises no longer need to acquire new contact center infrastructure and applications every time they want to set up a new site.

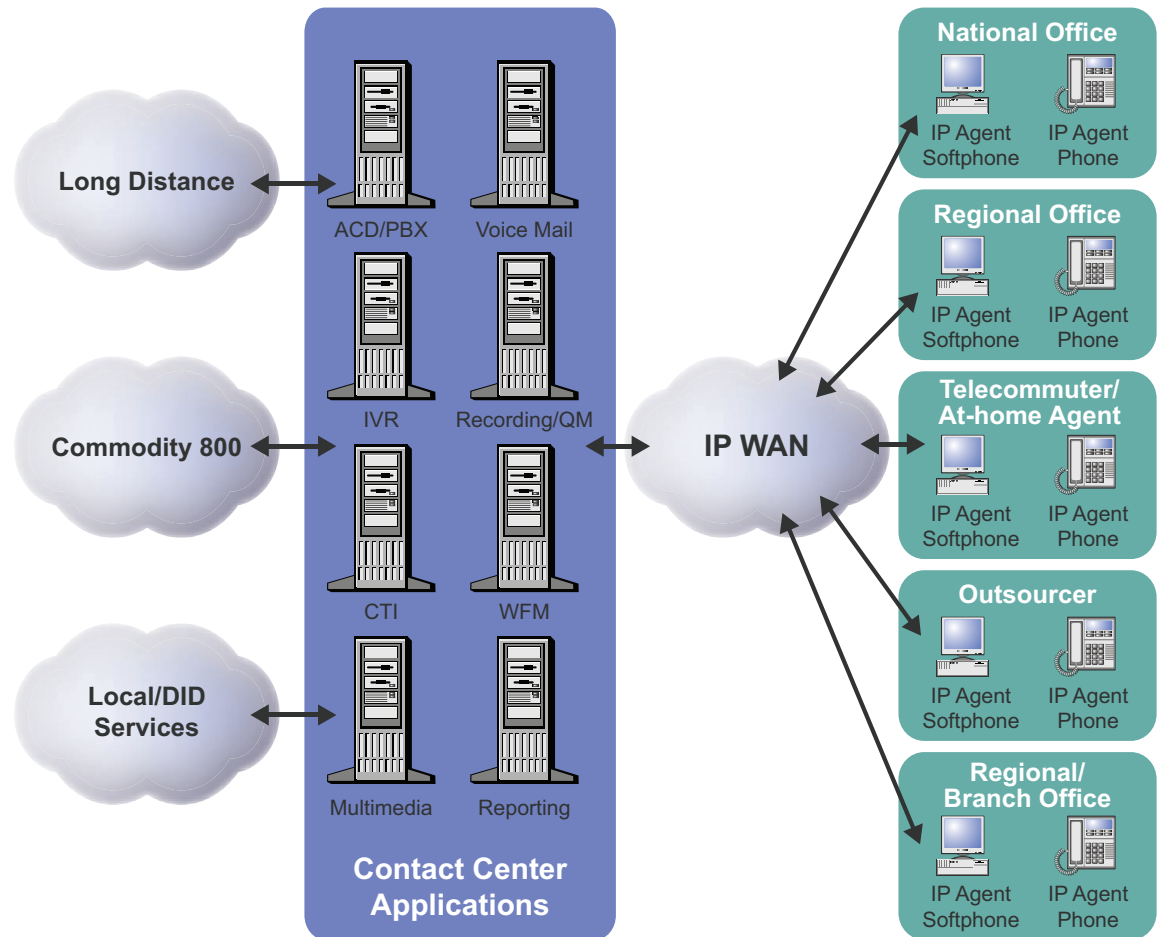


Figure Two: The Evolution of Multisite Contact Centers

High Capacity and High Availability Options

High volume contact center environments may exceed the call processing capacity of a single server or a single set of applications. To address this situation, a high capacity configuration can be built with two identical hubs, both with an IP gateway and all supporting contact center applications. Incoming traffic can be split between the two hubs by the network carrier. The two hubs are fully interconnected, and the integrated ACD function will make agent and call routing decisions across the two hubs. Built-in system management and reporting capabilities are designed to treat these two hubs as one logical system.

The new multisite contact center architecture also has several options to address the need for high availability and business continuity. It has a built-in capability to utilize duplicated access links, dual service providers, redundant routers, a highly resilient WAN design and adaptive WAN path optimization. Depending on the level of redundancy required, one or more backup hubs can be deployed in other locations. Alternative gateways can be placed strategically on the corporate WAN to provide survivability in case of the loss of the central site. Additionally, in an emergency, arrangements can be made for easy reassignment of agent phones and for carriers to quickly redirect calls to an alternate hub.

Section 4: Simplifying Multisite Management

IP technology allows enterprises to vastly improve the way their contact centers operate. Historically, so much of what goes on in contact centers has been hindered by technology limitations. IP eliminates many of these obstacles while enhancing cost structure, Quality of Service (QoS), customer experience and agent satisfaction. Below is a list of common benefits realized by contact centers after they migrate from traditional TDM-based multisite operating environments to IP.

Contact Center Management

1. Allows enterprises to centrally manage a simplified contact center operating environment.
2. Enables better agent utilization by eliminating routing and queuing restrictions caused by multisite inefficiencies and technology limitations.
3. Provides enterprise view of contact center operations.
4. Provides transparency into any contact center environment, either inside or outside of the enterprise.
5. Routes calls to the most qualified agent, regardless of location in the multisite environment, with no incremental carrier or network charges.
6. Eliminates geographical limitations, enabling the cost effective use of satellite sites, domestic and offshore outsourcers, branch offices and at-home agents.
7. Empowers enterprises to rapidly introduce innovation and realize service differentiators.
8. Enhances the brand and builds customer loyalty by improving the customer experience.
9. Allows satellite and branch office-based agents to be managed with the same sophisticated tools used by large contact centers.

Financial Management

1. Lowers operating costs by as much as 30%.
2. Reduces network fees and carrier charges by eliminating the need to use these services to route calls to various sites.
3. Provides investment protection for existing contact center assets.

IT Management

1. Eliminates redundant applications – ACD/PBX, voice mail, IVR, CTI, multimedia, recording/QM, WFM and reporting – at each contact center location in a multisite configuration.
2. Reduces hardware, software, maintenance and internal support costs and fees by allowing enterprises to consolidate servers and applications.
3. Increases interoperability among diverse contact center solutions
4. Reduces the probability of system problems and failures by simplifying the operating environment.

5. Standardizes service throughout the contact center and in all media channels.
6. Provides cost effective business continuity and redundancy.

Section 5: How Two Leading Enterprises Have Leveraged IP-Enabled Contact Centers

As of 2006, new contact center implementations all over the world are predominantly IP-based. It's relatively easy to implement a new IP-based contact center by adhering to industry best practices and using an experienced implementation team. It is more challenging to migrate from a TDM-based contact center environment to one that is IP-enabled, as this is a more complex process. The rewards are significant for companies that successfully follow the strategy of flatten, consolidate and extend, as did Delta Airlines and ebookers.com.

Case Study: ebookers.com

Opportunity: ebookers.com is one of Europe's largest and fastest growing online travel specialists. With more than ten acquisitions in past three years, the company was challenged to get more than 30 contact centers with diverse vendor technologies and applications to interoperate properly and cost effectively. "To maintain a competitive cost structure, we needed a centralized platform that was easy to administer and manage – one that had the built in scalability and interoperability to incorporate all of our existing and future sites into one virtual center."

Solution: ebookers.com decided to go with a converged voice and data IP solution, which was "interesting since all of our existing contact centers used traditional TDM technology." Avaya was chosen for several reasons, including:

- "We were convinced that Avaya MultiVantage Communications Applications portfolio and converged infrastructure of media servers and gateways represented a genuine best of breed approach."
- Avaya was seen as the "clear industry expert when it comes to engineering high-performance voice systems that are 'future proof.'"
- "Avaya was the only provider that gave us the total confidence that we were looking for."

The implementation was completed in 8 weeks, impacting 31 sites in 13 countries.

Benefits: ebookers.com has realized many benefits from its implementation, including:

1. A single virtual global queue that routes calls to the most appropriate agent anywhere in the environment
2. 35% reduction in abandoned calls
3. Complete and consistent view of performance
4. Higher agent utilization and lower agent costs
5. Reduced network costs – elimination of leased lines and carrier costs
6. 30% increase in sales conversion rate

As importantly, the Avaya IP infrastructure is allowing ebookers.com to implement its acquisition strategy cost effectively.

Case Study: Delta Airlines

Opportunity: Delta Airlines was confronting challenges typical of many companies with large multisite contact centers. Its servicing environment was increasing in complexity. Its costs were not declining on par with the decreases in carrier service rates. Its telecommunications infrastructure limited its flexibility and ability to respond to changing market dynamics. Business and IT executives desired “drastic improvements” and “drastic changes” to fix the situation.

Solution: Avaya was selected from among 5 competing vendors to provide a “simplified structure eliminating {network} feature costs and reducing the average per minute rate.” Avaya implemented a global virtual IP network with a single contact center solution, eliminating hundreds of servers and redundant contact center applications at many different sites.

Benefits: Delta realized many efficiencies and benefits from its Avaya International IP network, including:

- 1. Cost savings** – Cut annual contact center budget in half
- 2. Rapid ROI** – The investment in its new IP network saved millions annually in telecommunications savings and delivered a nine-month payback
- 3. Reduced support needs** – Eliminated hundreds of servers and a dozen ACDs, dramatically reducing its administrative and support burden
- 4. Technology advances** – Migrated from a proprietary TDM-based environment to an open IP-based platform, allowing it to deploy more advanced and scalable systems with higher reliability and enhanced integration capabilities

Additionally, with the new IP global network, “all agents and callers have the same experience. Gone are the days when one city was busy and another slow; or when callers could hang up and call back with a chance of being answered quicker. The environment is truly providing a fair distribution of calls to agents and service levels to customers.”

Section 6: How to Determine If IP Is Right for Your Organization

There are many compelling reasons for contact center and IT managers to invest in building an IP contact center infrastructure. The three primary factors are:

- 1.** Your current contact center architecture prevents you from doing business cost effectively with your customers. It limits your ability to extend your service infrastructure throughout the enterprise. This prevents you from conducting business efficiently and optimizing agent resources.
- 2.** Your current infrastructure is geographically limited and impedes you from rapidly changing and expanding your business.
- 3.** High network, carrier, application and support costs are hurting your bottom line.

A Checklist to Help You Decide

All multisite contact centers— whether using only two centralized locations or more than 20 dispersed sites, those with branch/regional offices, offshore and domestic outsourcers or at-home agents — will realize significant and quantifiable benefits from the deployment of IP technology. Use this checklist to identify the many ways that the strategy of flatten, consolidate and extend can benefit your enterprise and its customers.

A Checklist to Help You Decide			
	Yes	No	
1.	<input type="checkbox"/>	<input type="checkbox"/>	Are you operating a multisite contact center?
2.	<input type="checkbox"/>	<input type="checkbox"/>	Is your contact center infrastructure limiting the way you conduct business?
3.	<input type="checkbox"/>	<input type="checkbox"/>	Are you using a variety of contact center solutions that do not easily interoperate?
4.	<input type="checkbox"/>	<input type="checkbox"/>	Do you want to reduce carrier, network, application and support costs?
5.	<input type="checkbox"/>	<input type="checkbox"/>	Would you like to improve the effectiveness of your existing IVRs?
6.	<input type="checkbox"/>	<input type="checkbox"/>	Do you want to begin the migration to IP without discarding your TDM-based contact center environment?
7.	<input type="checkbox"/>	<input type="checkbox"/>	Do you want to route calls to the best-qualified agents, regardless of where they are in your network?
8.	<input type="checkbox"/>	<input type="checkbox"/>	Would you like to be able to leverage agent skills and talent from your entire pool of contact centers to exceed your customers' expectations?
9.	<input type="checkbox"/>	<input type="checkbox"/>	Would you like to simplify and standardize operating procedures in your multisite contact center?
10.	<input type="checkbox"/>	<input type="checkbox"/>	Would you like to manage outsourced and at-home agents with the same processes and technology you use to manage your in-house agents?
11.	<input type="checkbox"/>	<input type="checkbox"/>	Would you like to simplify your operating environment, improve its reliability and reduce operating expenses?

An affirmative answer to seven or more of these questions means that your enterprise is positioned to begin the process of IP-enabling your contact center architecture. The first step is to find an appropriate technology partner, one that you are comfortable working with and who can make this critical transition happen for you.

Avaya Differentiators

Avaya is uniquely positioned to assist your contact center in implementing an IP-enabled architecture that allows you to execute the strategy of flatten, consolidate and extend. Avaya differentiators include:

- **Richest contact center feature set** – Avaya offers the most functionally rich and well-designed contact center solution in the market. Avaya has dedicated more than 28 years to building the most innovative and scalable contact center solutions for many of the market's most demanding customers. Avaya contact center solutions include more than 700 high-value features that are in production in more than 32,000 customer locations around the globe.
- **Industry leading, patented call assignment techniques** – Avaya provides industry leading predictive and adaptive techniques that govern the assignment of agents to calls so that contact centers can achieve their efficiency and effectiveness goals. Business Advocate is a patented Avaya software solution that optimizes the performance of contact center agents and improves customer satisfaction by ensuring that the right agent handles each call. It reduces abandon rates, increases agent occupancy rates, lowers the average speed of answer and minimizes service delays.
- **Massive scalability** – Avaya supports massively scalable multisite contact center solutions with the Avaya integrated ACD/PBX and Avaya Communications Manager (ACM). A single instance of ACM today supports 7,000 agents, 12,000 trunks, 9,000 voice prompts and announcements, 12,000 queue positions and 300,000 busy hour completions, and Avaya plans even greater scalability in future releases.
- **Network-agnostic architecture that supports TDM and IP** – Avaya contact center solutions are designed to optimize the performance and interoperability of diverse TDM and IP-based contact centers while protecting the customer's existing investments.
- **IP performance optimization** – Avaya Converged Network Analyzer (CNA) vastly improves the performance and dependability of a customer's IP network. CNA provides detailed visibility into how well paths through the converged IP network are functioning for both IP telephony and data applications. When the IP wide area network design provides diverse paths between locations, CNA enhances the reliability of these applications by optimizing their performance in real time.
- **Highest security protection** – Avaya understands the importance of providing secure solutions that minimize exposure for its customers. Avaya contact center solutions can be completely isolated from the corporate LAN/WAN, if desired, and IP-based conversations can be fully encrypted.
- **Business continuity, full redundancy and high availability** – Avaya contact center solutions are architected to be fully redundant and to minimize service interruptions caused by network outages. Avaya high availability solutions ensure system performance.
- **Layer 7 call recording** – Avaya uses the native software-based service observe capability of ACM to provide 100% or random call recording. This is an elegant and simple approach to call recording that eliminates administrative complexity and avoids the need for a bandwidth-intensive, network sniffing approach.
- **Global services** – Avaya is the leading provider of contact center professional services throughout the world, helping customers build optimal, world-class service environments. Services can be provided either by Avaya Direct or by a BusinessPartner. Our programs include contact center strategy and architecture, network design, application integration, implementation, security, business continuity planning and maintenance.

Conclusion

Market innovation is altering the competitive landscape for contact centers and presenting enterprises with opportunities to enhance the performance and effectiveness of their contact centers. Avaya is the leading provider of IP-based contact center technology and services around the world. Our strategy of flatten, consolidate and extend is helping enterprises improve the performance and effectiveness of their contact centers, while protecting their existing contact center investments and dramatically decreasing operating costs.

About Avaya

Avaya enables businesses to achieve superior results by designing, building and managing their communications infrastructure and solutions. For over one million businesses worldwide, including more than 90 percent of the FORTUNE 500®, Avaya embedded solutions help businesses enhance value, improve productivity and create competitive advantage by allowing people to be more productive and create more intelligent processes that satisfy customers.

For businesses large and small, Avaya is a world leader in secure, reliable IP telephony systems, communications applications and full life-cycle services. Driving the convergence of embedded voice and data communications with business applications, Avaya is distinguished by its combination of comprehensive, world-class products and services. Avaya helps customers across the globe leverage existing and new networks to achieve superior business results.

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