

Location Intelligence in Retail Banking

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FINANCIAL SERVICES



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EXECUTIVE SUMMARY

IN THIS REPORT, YANKEE GROUP PRESENTS HOW LOCATION INTELLIGENCE (LI) IMPACTS THE RETAIL (COMMERCIAL) BANKING INDUSTRY. THIS REPORT STEMS FROM AN ORIGINAL BODY OF RESEARCH WITHIN YANKEE GROUP'S ENTERPRISE RESEARCH TEAM CONDUCTED DURING THE PAST 18 MONTHS TO UNDERSTAND HOW VENDORS AND ENTERPRISES USE LI CAPABILITIES TODAY AND EXPLORE ADVANCED USES FOR THE FUTURE.

THE CONCEPT OF LI IS ROOTED IN THE DISCOVERY THAT CONTEXTUALIZING LOCATION DATA IN BUSINESS PLANNING, DECISION MAKING AND PERFORMANCE MEASUREMENT IMPROVES THE OPERATIONAL AND FINANCIAL HEALTH OF A BUSINESS. LOCATION INTELLIGENCE, A TERM EVOLVED FROM ROOTS IN BUSINESS INTELLIGENCE (BI) AND GEOGRAPHIC INFORMATION SYSTEM (GIS), ENJOYS SOMEWHAT DIFFERENT INTERPRETATIONS. FOR THIS REPORT, YANKEE GROUP DEFINES LI AS A BUSINESS MANAGEMENT TERM THAT REFERS TO SPATIAL DATA VISUALIZATION, CONTEXTUALIZATION AND ANALYTICAL CAPABILITIES APPLIED TO SOLVE A BUSINESS PROBLEM.

WHEN A BUSINESS PROBLEM IS IDENTIFIED, SOLVING IT REQUIRES LEVERAGING BOTH HUMAN AND TECHNICAL RESOURCES TO SOLVE IT. IN THE BANKING INDUSTRY, INFORMATION LOCKED IN SILOS OF DATABASES INHIBITS THE SHARING OF INFORMATION ACROSS THE MULTIPLE FUNCTIONAL AREAS OF THE COMPANY. EVEN WHEN VARIOUS DATA SETS ARE BROUGHT TOGETHER, THE SHEER VOLUME CAN BE OVERWHELMING AND THE QUALITY UNCERTAIN. SEAMLESSLY INTEGRATING REAMS OF DATA AND DISPLAYING IT IN A MANNER THAT CAN BE EASILY ANALYZED AND ACTED UPON, LAYS THE BEDROCK FOR MAKING GOOD DECISIONS QUICKLY.

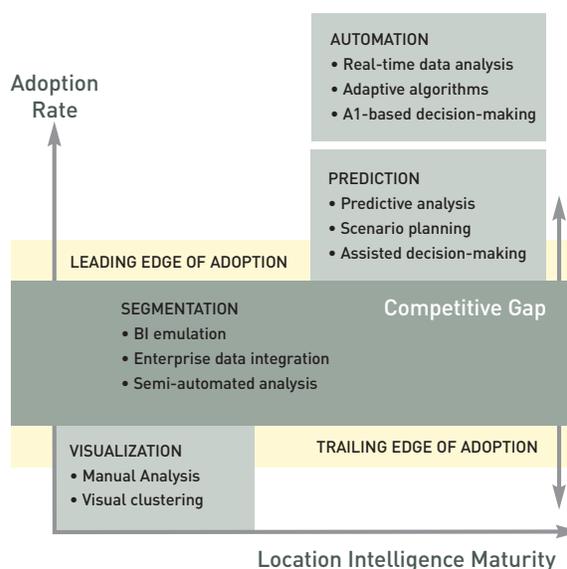
MORE BANKING ORGANIZATIONS ARE DISCOVERING THAT LI ACTS AS A BUILDING BLOCK TO IMPROVE BUSINESS PERFORMANCE THROUGH ADVANCED ANALYSIS. LI IS SIMILAR TO BI AS A TOOLSET FOR OPERATIONAL ANALYSIS AND PERFORMANCE MEASUREMENT. LI IS DISTINCT FROM BI IN THAT IT IS OPTIMIZED FOR SPATIAL DATA, PROVIDING DATA MANAGEMENT CAPABILITIES TO ENSURE QUALITY AND ADVANCED ANALYSIS UNIQUE TO A SPATIAL CONTEXT. LI CAN ACT AS A CORNERSTONE THAT ENABLES BUSINESSES TO ANALYZE DATA, MAKE DECISIONS AND CLEARLY COMMUNICATE THOSE DECISIONS TO A WIDER AUDIENCE.

TO FULLY LEVERAGE LI FOR THE LONG TERM, ENTERPRISES MUST POSSESS FOUR CAPABILITIES INDEPENDENT OF THE BUSINESS TYPE, INDUSTRY SEGMENT OR VERTICAL IN WHICH IT COMPETES:

- Technical capability relates to the discrete components and tools used in a LI solution. They are built through mastery of an amalgam of tools such as CRM, ERP, FAS and GIS software. Multiple data sets must be brought to bear through a single application such as LI.
- Functional capability includes the core business functions that comprise a business such as sales, marketing, operations, HR and finance.
- Operational capability is the ability of an enterprise to establish and improve the necessary business processes that make full use of the functional and technical capabilities.
- Transformational capability is the organization’s leadership commitment to continuously redefine the business as well as the organization’s willingness to make changes to seize on opportunity and seek new ways to serve existing markets.

IN THIS REPORT, WE PRESENT THE CHALLENGES FACING THE RETAIL BANKING INDUSTRY AND THE SUBSEQUENT USE OF LI TO SOLVE PROBLEMS IN A SAMPLE OF FUNCTIONAL AREAS. BY ENHANCING FUNCTIONAL CAPABILITIES OF CORE SYSTEMS WITH LI, ENTERPRISES ARE BOLSTERING THEIR OPERATIONAL CAPABILITIES AND ULTIMATELY GAINING COMPETITIVE ADVANTAGE. IN THIS REPORT, WE ALSO CONSIDER THE LIFECYCLE THAT ADOPTERS CAN EXPECT TO LEVERAGE BASED ON THE ADVANCES THAT VENDORS CONTINUE TO MAKE THROUGH RESEARCH AND DEVELOPMENT (SEE EXHIBIT 1). FOR EXAMPLE, WE DISCUSS HOW USERS MOVE FROM STATIC MANUAL ANALYSIS TO DYNAMIC VISUAL ANALYSIS BY LEVERAGING THE TECHNICAL CAPABILITIES OF LI SOFTWARE AND SERVICES.

EXHIBIT 1:
LOCATION INTELLIGENCE IN BANKING
SOURCE: YANKEE GROUP



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I. Data and Analysis

Banking Industry In Transition

The 1990s ushered in the dawn of online banking services, transforming how banks used technology to reach the customer. Identifying, acquiring and servicing bank customers changed forever. Commercial banks created online strategies and subsequently plowed money into the burgeoning opportunity. Online banking provided the opportunity to improve customer service, create operational efficiencies and extend the virtual reach beyond a physical location. The early 2000s marked a seismic shift in the retail banking industry characterized by unprecedented consolidation that raised the competitive bar. The death of the six-decade-old Glass-Steagall Act in 1999 broke down the wall separating commercial banking and investment banking, and accelerated competition and innovation in the industry. The industry transformed from one exemplified by large regional institutions and small community banks to one of national and international conglomerates. The artificial layer that protected sleepy regional banks was peeled away. Newly formed conglomerates were awash with tightly clustered retail branch sites. The result was bloated operations with high overhead. The industry needed to find more efficient ways to run its operations and serve existing and prospective customers.

Banks turned to technology to differentiate themselves from competitors and rationalize inefficient branch networks. Early forays used GIS software to visualize branch locations in a given locale. Banks took notice of the results. The software helped streamline a fundamental planning process—that is, branch site location planning process. GIS software acted as a transformational gateway that broke the doors open for LI adoption.

Improving Business Performance Visibility

LI software helps banks discover savings and create new revenue sources where few realized opportunities existed. It is used in a variety of ways. For example:

- Optimizing branch location by identifying over- and underserved locales
- Revealing the presence of competitors' branches, volume and traffic profiles
- Understanding target demographic distribution patterns
- Tracking customer service usage patterns
- Creating local marketing messages about service and product portfolios

LI proves helpful in solving a variety of challenges across many functional areas including operations, sales, marketing, customer service and strategic planning. Through capabilities such as visualization, pattern recognition and analysis, LI gives rise to hypercompetitive banks.

LI Lifecycle

Despite the commercial banking sector's relative familiarity with GIS, banks only recently began to explore the spectrum of LI capabilities and possibilities beyond traditional use cases such as ATM and branch site location. Yankee Group believes LI adoption has four distinct stages:

1. Visualization
2. Segmentation
3. Prediction
4. Automation

As companies become comfortable with their current uses of LI, they will begin to explore additional capabilities in subsequent steps. Each stage gains increasing impact because it delves deeper into business processes and simplifies decision-making. Retail banking firms have only begun to explore the second of the four stages.

THROUGH CAPABILITIES SUCH AS VISUALIZATION, PATTERN RECOGNITION AND ANALYSIS, LI GIVES RISE TO HYPERCOMPETITIVE BANKS

Visualization

The early days of LI highlighted the importance of visualizing data to identify trends that aren't readily obvious when data is trapped inside a database. For example, retail banking firms used the technology to view where branch offices are located relative to competitors' branches. The technology drew information from BI databases, but did little to integrate the analytical prowess of those applications. This approach eliminated the labor-intensive work required for locating new branches or rationalizing branch networks in a given geography. It provided a holistic view of branch sites that was nearly impossible to achieve otherwise, thereby enabling managers to research areas that were over- or underserved. The technology eliminated the Herculean task of mapping the ever-evolving network of branches. However, it provided no context to help understand the rationale behind decisions to locate branches in particular areas. The lack of deep integration with analytical engines meant the analysis was left to another database that couldn't provide useful data overlays such as demographic information or average revenue per customer.

Segmentation

The second phase of LI is characterized by two activities. First of these activities is the integration of BI analytical capabilities with GIS visualization capabilities. This integrated functionality introduces the context for decisions that was missing from the visualization stage. For example, a common use of LI is to overlay detailed demographic information with potential branch site locations and competitor site locations. The result is a quantitative foundation for individuals to select site locations and determine marketing messages based upon the characteristics of the community such as age, income or profession. To enable that quantitative foundation, data needs to be combined and made accessible for consumption by the LI software.

Second, data management capabilities are requisite to ensure accessibility across any number of repositories whether internally located or externally sourced. These capabilities ensure data quality and consistency. For example, internal data initially should be cleansed then geocoded for consumption by the LI software package. Where LI vendors provide demographic and firmographic data from third parties, these data sets are then combined with internal data. Data can then begin to be systematically accessed. As LI usage becomes sophisticated, data often needs to be updated. For example, metadata needs tagging for near- or real-time analysis. In the absence of data management capabilities, poor data quality risks increase, lowering confidence in analysis and proper decision-making.

Prediction

This phase builds upon previous stages to incorporate further levels of analytical capabilities that empower LI tools to predict the future. The previous stage provided visual depictions of data analysis intended to assist the end user in his or her decision process. Although that information provides a foundation for an informed decision, it leaves much of the actual decision to the individual. In the prediction phase, the tool suggests optimal outcomes rather than providing a data dump that the end user is left to interpret. Prediction removes some variability inherent to a decision-making process left entirely in the hands of an individual. Each individual decision-maker has unique perspectives that impact his or her analysis, thereby leading to inconsistent decisions from one person to another. By relying on statistical algorithms to identify patterns and relationships between variables, LI tools can suggest optimal outcomes that mitigate variability.

The second significant difference between the previous state and the prediction phase is that the segmentation approach is rooted in historic data whereas the prediction stage is directed to anticipate future trends. In choosing

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a site for a retail bank branch, the tools might evaluate current demographic data, predict how the makeup of the community will change over time and the impact on that change on the site's profitability, and finally recommend optimal site locations to the end user. All of these activities are married with a powerful visual depiction of the market's evolution.

Automation

An individual sets a series of rule-based decision criteria that trigger an action within the business process when certain thresholds are met. For example, lending institutions tighten and loosen lending guidelines based upon economic data. However, the economic health of each city, state or region varies widely based upon local factors.

Companies will use LI to automatically set lending guidelines for individual cities or metro areas. The LI engine may be set to tighten lending guidelines if a particular set of metrics exceed certain thresholds. For example, if the average number of days a home is on the market and unemployment rates increase, and the difference between asking and selling price exceeds a certain hurdle, then the minimum acceptable credit score for a loan increases by 5%.

This type of analysis doesn't remove human decision-making from the process all together, but rather the effort is expended once while setting rules and then left to LI tools to carry out actions thereafter.

Each stage of the LI maturity lifecycle incorporates more decision making into the software program, which narrows the decision matrix for end users to only the most critical issues. Automation significantly decreases human decision-making from predefined business process. The ultimate goal is to build predictive analytical algorithms that are automated, aware and intelligent. That is, the program

should be able to identify actionable conditions, make a decision, be aware of conditions that change optimal parameters and automatically change its rules without human intervention. It is a form of artificial intelligence and the stuff of science fiction. Until this crowning achievement is realized, experts play a critical role helping businesses on best practices. Subject matter experts guide the creation of analytical frameworks for any given business problem. Experts can be internal employees or service providers such as systems integrators, value-added resellers or independent business consultants and analysts. Most banks take first steps in LI software use by working with consultants who not only have knowledge about specific LI vendor software packages, but also have subject matter expertise relevant to the industry. Using a consultant is subjective and there is no one single best approach. For example, a major national US bank defines the methodology for analysis then outsources the work to a systems integrator. In another case, a medium-sized regional bank actively calls the technical support group of a leading LI vendor.

Understanding How Location Intelligence Is Used Today

The broader adoption of GIS in the retail banking sector paved the road for LI as a strategic enterprise application for performance measurement and optimization. The changing competitive dynamic of the commercial banking industry created a need—branch rationalization—that GIS easily solved. The value was so intuitive that management could easily justify the software deployment. Today, use cases are more complex and ambitious. The following examples indicate how banks are moving toward a LI enterprise:

1. Locating branches
2. Honing location-specific marketing messages
3. Adhering to compliance regulations

WITH LI, THE COMPANY GREATLY IMPROVES ITS ANALYTICAL RIGOR WHILE LOWERING COSTS

Locating Branches

Comerica, a Dallas-based bank with \$54 billion in total assets, is one of the 25 largest banks in the United States and uses LI software to optimize bank locations. Approximately 5 years ago, the bank embarked on an aggressive branch expansion strategy. GIS software powered the initiative and was integral to the success of the ambitious expansion.

The company started by taking a holistic view to branch expansion. Rather than simply considering an isolated branch, it conducted a regional study of all its branches. The study identified the impact a pool of new branches had on corporate performance targets. For example, some regions presented a growth opportunity in equity lending while others presented growth in deposit gathering. By moving to a LI approach, Comerica set growth expectations by aligning branch locations with overall corporate growth objectives set by senior management. Like any publicly-traded company, Comerica is responsible to forecast growth prospects and outlook. LI help provide that visibility.

LI enables the company to create and measure 10-year revenue and profitability forecasts for each new branch based upon variables such as a community's mean income, disposable income, home ownership rate, population growth, unemployment trends and innumerable other factors. Therefore, the bank can model the mix of branches to ensure anticipated growth in various areas such as equity lending and deposit gathering is in line with Wall Street's expectations. The result is a more proactive organization with a rigorous analytic foundation for its objectives and ability to meet them.

Building branch revenue projections before the use of LI depended on labor-intensive model building and guesswork. Decisions suffered from analysis paralysis by senior management. With LI, the company greatly improves its analytical rigor while lowering costs. TD Canada Trust,

a Canadian retail bank with 1,060 branches, used to spend 4 months to complete a branch site analysis. Using an LI application, that analysis now takes 1 week. According to the company, LI provides TD Canada Trust a competitive advantage through accelerated time to opening.

For Frost National Bank, based in San Antonio, locating a new branch was formerly an unrefined process based on subjective data. Now, after implementing an LI solution, the bank can analyze a particular area and market then decide whether a branch makes sense in that location. If a branch would make sense, the bank can also determine which style of bank would work, including considerations such as architecture, layout and services offerings. The approach is methodical and fact-based. Bank officials say that the visualization and spatial tools significantly help build a business case for a bank's location. Bank officials believe that by optimizing its branch locations through use of LI tools, the bank can achieve a competitive advantage by putting its financial and planning resources to best use.

Comerica also states that LI opened the door to analysis that was virtually impossible to do in the past because of the time and effort required. For example, assessing the merits of building a new site versus acquiring a pre-standing site introduced a layer of complexity to its holistic site location analysis that wasn't easily overcome with manual analysis. LI software easily manages that layer of complexity on top of any number of other decision criteria. TD Canada Trust uses 31 different variables in a standard branch analysis.

Customer Segmentation

Progressive LI adopters use it for customer segmentation. The first iteration of mapping technology proved useful for visual trending that was not readily apparent using raw data analysis. However, the introduction of business intelligence capabilities to GIS created a powerful customer segmentation tool. Banks typically introduce census data to analyze demographics for the customer base in a given

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region. TD Canada Trust cross-references 10 million customers and 30 million accounts with demographic information to drive sales planning efforts at the branch level. It informs workers on the products that should be highlighted in a given region. For example, one of its analyses uses a clustering algorithm that enables the company to determine which microregions are best suited for particular investment products (i.e., discount brokerage, mid-level advisory or wealth management and private client services). The segmentation informs the product market strategies group and ensures the optimal distribution of investment advisers throughout its 1,000-plus branch network. In fact, the segmentation analysis in TD Canada Trust has been so well received, the market strategies group is sought after by various factions within finance, marketing and sales who witnessed the horsepower of the LI tool but don't have their own mapping group established. A challenge for the market strategies team is keeping up with demand for their services.

Compliance

Lending divisions use LI to maintain regulatory guidelines. Redlining, the practice of discriminating based upon geographic location when providing loans, has serious implications for banks. Financial penalties associated with redlining pale in comparison to the costs associated with brand degradation. The wrath of regulators stemming from redlining isn't as feared today with creative lending vehicles such as subprime loans. However, lending institutions are still obliged to demonstrate equitable lending practices. While the subprime trend alleviated some redlining concerns, it exposed the risk of holding a portfolio with an abundance of high-risk loans to individuals with poor credit histories. Spatial mapping has proved an important tool for many organizations trying to mitigate overexposure to subprime lending in given markets.

Comerica, a mature user of LI for locating branches, recently started using it as a compliance tool. The spatial mapping functionality enables the regulatory and marketing

groups to create highly effective presentations for regulators, community groups, and the public. It's been invaluable in articulating how Comerica's branch expansion is integral to furthering community development. The company attributes its constructive and close relationships with community leaders to the improved communications enabled by LI.

The use cases we discuss demonstrate how retail banks typically use LI today. The spectacular success enjoyed by many users has compelled companies such as TD Canada Trust to view LI software as a strategic tool. As such, it has created an LI road map that identifies future uses and deployments of the tool throughout the organization.

Future Uses of LI

From the smallest local cooperatives to the largest international banks, LI software helps improve processes specific to financial institutions in the retail banking segment. From the previous examples, LI software serves many functional areas today, which are customized to meet particular needs. As end users understand better the power of LI to aid business performance, awareness and demand is driving business to think strategically about its place in business systems.

The use of and move to LI in retail banking is in its infancy. More progressive companies recognize LI as a strategic tool that provides a competitive advantage. Innovation and experimentation result in LI being more pervasive within the organization. It is clear LI has a larger role to play in retail banking. We discuss some of the more likely future uses cases next.

Risk Mitigation

Taking a lead from the insurance industry, risk mitigation in the banking industry represents a budding area. Although risk mitigation is fundamental to branch location decisions, thoughts around how it can be applied to loan

LI OFFERS A SOLUTION THAT CAN DYNAMICALLY ADJUST LENDING STANDARDS IN ANY GIVEN GEOGRAPHIC LOCATION IN NEAR REAL TIME

portfolio management are beginning to emerge. Banks that can more quickly and accurately identify risk achieve an advantage over competitors. They reduce their own exposure to loan defaults. The current economic trends provide fertile ground for experimentation. For example, banks face current trends that include high individual debt, increasing reserve-to-loan ratios, falling housing prices and rising unemployment. The risk for default is skyrocketing in some segments. The cost of off-loading loan portfolios on the secondary market has increased dramatically as markets prices adjust to account for heightened risk. Banks are seeking new ways to mitigate risk for new loans without choking off supply all together.

LI offers a solution that can dynamically adjust lending standards in any given geographic location in near real time. It can automate decisions that are manual today. LI can be used to automatically set lending guidelines for individual cities or metro areas. The LI engine may be set to tighten lending guidelines if a particular set of metrics exceeds certain thresholds. This is optimal because it allows decisions to be made based upon local economic data such as real estate market prices by neighborhood, unemployment rates, economic development, credit scores and loan-to-value ratios. It also fosters consistent decision making across the country. Decentralizing decisions is typically synonymous with inconsistent decisions because local decision-makers each have unique interpretations of the same data. Centralized decision making is synonymous with decisions that make sense in the aggregate, but result in lost opportunities in locales with unique circumstances. An automated LI solution enables banks to mitigate risk by reacting quickly to changing economic data in local geographies.

Human Resources Assessments

One way that some companies are looking at utilizing and harnessing LI in a broader, more integrated way is through the human resources (HR) department. Increasingly, companies are facing workforce challenges, as they balance

global, mobile and remote workforces, face future labor shortages as baby boomers retire and juggle the needs of younger workers who typically seek more flexible work schedules. HR and business executives are beginning to see LI as a way to more accurately plan for future labor needs and more efficiently and swiftly analyze their current workforce requirements.

Although not currently widely deployed in HR departments, the HR technology service providers and outsourcing service providers are increasingly talking about BI and LI solutions as important tools for identifying and managing pools of talent. The use of LI holds great promise to enable more effective deployment of labor resources.

Conclusions and Recommendations

Leading adopters share several common activities, taking steps today that prepare their organizations for broader strategic initiatives in the future. Yankee group recommends the following initial planning steps:

- **Make data widely available.** Internal data and external data must be made available for consumption by LI software. The data (e.g., customer records, demographics or firmographics) residing in a repository or application (e.c., CRM or CCM) will be geocoded and exposed for access. By allowing ubiquitous access to data, a limitless combination of trending and analysis is possible across any department or functional group. With deeper integration into enterprise systems, data quality and integrity becomes more critical to proper analysis.
- **Encourage collaboration across functional groups.** Complement the sharing of systems data by encouraging functional groups to work with each other in solving easy problems first. More complex analysis will grow organically. Operations, marketing, sales, finance, HR, community relations and other groups find innovative ways to work with each other when barriers are removed. Foster experimentation in analysis.

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- **Tap or train experts.** Work with LI vendors and partners to identify an effective software development and Maintenance plan. Each organization has unique needs and may be better suited to in-source or outsource. Banks can leverage the expertise of the LI vendors and integration partners to help them understand best practices. For example, businesses may design the analytical methodology and have the LI vendors or integration partners implement the work. In other circumstances, internal expert users develop the required skills with minimal technical support.

Retail banks that know the costs of failure have never been higher in this increasingly competitive environment. Organizations must make better decisions than competitors and do so in a shorter time frame. Banks such as Comerica, TD Canada Trust, Frost National Bank and many more have turned to LI tools and capabilities to grow their business and serve customer better. Today, organizations push beyond conventional implementations to explore the integrated and sophisticated uses that support a location intelligent organization.

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A GLOBAL CONNECTIVITY REVOLUTION IS UNDER WAY, TRANSFORMING THE WAY THAT BUSINESSES AND CONSUMERS INTERACT BEYOND ANYTHING WE HAVE EXPERIENCED TO DATE. THE STAKES ARE HIGH, AND THERE ARE NEW NEEDS TO BE MET WHILE POWER SHIFTS AMONG TRADITIONAL AND NEW MARKET ENTRANTS. ADVICE ABOUT TECHNOLOGY CHANGE IS EVERYWHERE— IN THE CLAMOR OF THE MEDIA, THE BOARDROOM APPROACHES OF MANAGEMENT CONSULTANTS AND THE TECHNOLOGY RESEARCH COMMUNITY. AMONG THESE SOURCES, YANKEE GROUP STANDS OUT AS THE ORIGINAL AND MOST RESPECTED SOURCE OF DEEP INSIGHT AND COUNSEL FOR THE BUILDERS, OPERATORS AND USERS OF CONNECTIVITY SOLUTIONS.

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