Using IBM Social Business to Take Your Business Relationships to the Next Level: A Game Changer for Small, Medium, and Large Businesses

- Learn how to deepen customer relationships and why
- Understand how today’s technology is the basis for a social business
- Explore ways in which technology helps create a social business
Executive overview

IBM® defines Social Business as a business that embraces networks of people to create business value. Social businesses embrace technology to enhance relationships between employees, customers, and partners. They augment business processes and applications with social interactions and insight. They provide integrated activities that use business data and social data. Social businesses more fully integrate the collective knowledge of people-centric networks to accelerate decision making, strengthen business processes, and increase innovation that matters.

Every business needs to build and nurture relationships in order to retain and grow its customer base. These relationships are built by providing quality products and services and by giving customers a way to offer feedback and share ideas about improving products and services. By enhancing these relationships, social businesses achieve the following benefits:

- Ideas that improve products and services
- Increased loyalty throughout the ecosystem
- Excitement that spills over into a broader network of people

Enhancing relationships with customers is only half of the story. To make a profit, a business needs an efficient work environment and an effective work force. Business processes drive the work environment. Special situations, custom requests, and exceptions can slow processes. Businesses need a way to get the right individuals (knowledgeable workers and experts) working together wherever they are as quickly as possible to keep their operation running smoothly.

Businesses also rely on partners to provide critical components and services. How does a business connect partners and employees who, in most cases, are spread across many time zones and locations? How can these networks of people work together as a team and share information, skills, and expertise to solve problems and innovate?

This IBM Redguide™ publication provides information about IBM Social Business and includes details about the business need and the value of transformation to a social business. It presents a high-level Social Business component diagram, highlights key capabilities, and includes customer case studies that exemplify how some of these capabilities can be applied.
The business need for Social Business

A challenge faced by virtually all companies is how to be more adaptive and agile, more creative and innovative, and more efficient and resilient. Consumers now wield unprecedented power over how companies are perceived. Crowdsourcing is changing industry landscapes by leveling collective intelligence at an extraordinary rate. In addition, employees are demanding social tools in the workplace and are bypassing established hierarchies and IT processes to use them. As a result, companies are finding themselves at a transformative point regarding how business is done.

With these pressures and public adoption of social technology, companies need to ask themselves how they apply these technologies in order to transform themselves. They need to start asking the following questions:

- How do we develop trusted and deeper relationships with our customers and partners, so that we can field ideas and create a sharing environment?
- How do we use the greater pool of knowledge that our employees, customers, and partners have to improve our products and increase sales?
- How can we help our employees and partners get the information they need to ensure that our business is operating efficiently?
- How do we give our workers access to expertise and information that will make them more effective and efficient?
- How can we ensure that special situations and unique circumstances are handled without bureaucratic, hierarchical communications?

Let us consider some examples of recent technology shifts that have affected how people interact in their lives. The first shift is driven by intelligent mobile devices. These devices have had a dramatic affect on how individuals interact with others and how they obtain information. The second shift is social networking, which has intensified an individual’s ability to build online communities and communicate interactively over the web. The third shift is social analytics, which has brought the collective wisdom of the group into business situations. With social analytics, information about the social network can be used along with business knowledge to more effectively determine actions and make decisions.

The ways in which individuals interact, relationships form, decisions are made, work is accomplished, and goods are purchased has fundamentally changed. Social Business shifts the focus from the standard way of doing business and moves to a more dynamic operation, capitalizing on the energy, expertise, and creativity of involved parties. It creates an environment where decisions are based on current information from various sources. It also creates an environment where business problems are solved quickly because you have the ability to tap into the right expertise or collaborate with various resources to create innovative solutions. Teams or groups can be established to solve a problem, input ideas or solutions, and decide the appropriate action quickly and dynamically. This ability to quickly form and disband groups as needed is essential.

The business value of Social Business

Three key business value opportunities are emerging from the Social Business transformation. Becoming a social business can help a company in the following ways:

- Deepen customer relationships
- Drive operational efficiencies
- Optimize the workforce
Deepening customer relationships

The combination of social media and the growth of Internet use has changed the way in which consumers interact with business. Now, more than ever, organizations must understand and communicate with their customers. Increasingly, customers rely on digital interactions, peer evaluations, social media, and online after-purchase support to make their decisions about which businesses to engage.

To successfully build deeper customer relationships and impact traditional marketing methods, a social business must concentrate on the following key actions:

- Put customers at the center.
  Embrace an open dialogue with customers through social tools to involve them in both internal processes, such as product development, and external processes, such as promotion and customer service.
- Address customer experiences comprehensively.
  The best experiences are consistent and custom fit to users’ preferences, devices, locations, social networks, and behavior patterns.
- Use technology to build a competitive advantage.
  Analytically derived customer insights that use customer information from across internal and external data sources (such as Facebook and Twitter) feed marketing programs which, in turn, deliver the ultimate engaging customer experience.

Customer case study: Deepening customer relationships

China Telecommunications Corp. (China Telecom) is the largest fixed-line service and third largest mobile telecommunication provider in China. It offers a full range of integrated information, Internet connection, and application services. To stay competitive, the Shanghai branch of China Telecom wanted a way to accelerate the creation of new telecom services by optimizing the use of its employee base in a unified innovation process.

China Telecom developed an innovation platform with a web portal interface that enables collaboration among employees, partners, and customers. The portal accepts ideas from this enlarged community, expanding the sources of innovation and helping to filter the best quality ideas.

For more details, see the complete customer case study at:


Driving operational efficiencies

Social businesses can improve communication and drive innovation. Ideas can be discovered, refined, expanded on, and turned into valuable goods and services much more quickly. This sharing of ideas and increased communication can lead to increased operational efficiency.

The Social Business model is changing the traditional roles of development teams by improving their ability to perform the following tasks:

- Bring diverse opinions together to form novel ideas.
  Build focused communities that help improve the quality and speed of gathering business insights and generating improvement ideas.
Gather requirements straight from the customer.
Gather high-quality input, ideas, and feedback from motivated customers and partners who broadcast their product needs through daily commentary by using external communities and blogs.

Bring new products to market faster.
Preserve quality and traceability by sharing product ideas and production processes across organizational boundaries. Get early feedback on development prototypes and incorporate feedback into in-flight projects or prototypes by using file sharing, forums, blogs, tweets, and other social media.

Continue to connect developers with feedback from the field.
Improve quality and service by actively communicating externally to solicit quality concerns, offering appropriate expertise to solve problems, and getting answers into the hands of those people who need it.

Rapidly form small focused teams to innovate.
True innovations often come from teams. In a social business, the right people come together to solve problems, unimpeded by organizational boundaries.

Customer case study: Speeding innovation and time to market
CEMEX is the third largest building materials company in the world, with employees in 50 countries. To meet business challenges, it had to bring its global community closer together. CEMEX created a social network initiative to open communication and increase collaboration across its entire workforce. Within a year, over 20,000 employees were engaged, over 500 communities had formed, nine global innovation initiatives were underway, and ideas started flowing around the world among specialists in all areas and levels of the company. Wikis, blogs, and communities became links between operating units around the world, and the collaboration among employees led to impressive results.

For more details about this customer case study, see the press release at:

Optimizing the workforce
Social businesses are optimizing their workforce by enabling their employees to become more effective and by recognizing where talents can be used best. Human resources (HR) professionals in a social business can expand their roles and help in the following ways:

Encourage a culture of information sharing.
Social tools provide a gateway for current and relevant information exchanges across geographies and organizational silos. Building trust and encouraging social interactions are essential to driving a social change in the workforce.

Empower workers to foster innovation and growth.
Quick access to information and collaboration with an expanded professional network stimulates creativity, idea generation, and problem solving.

Help employees find people and build relationships.
Social tools can support people's intrinsic sense of “belonging” by recognizing contributions and building stronger communities and relationships across the organization.
► Improve leadership development.

HR professionals strive to retain top talent and develop the next generation of successful leaders through leadership development communities, expertise tracking, and personal brand management.

► Mobilize for speed and flexibility.

Businesses must be able to rapidly respond to customer demands and changing market conditions through rich profiles, expertise tagging, file and bookmark sharing, team libraries, and group broadcast tools.

► Rapidly develop and deploy skills and capabilities.

HR professionals should serve as a repository to catalog and refine the vast talents and expertise within the business. HR can use several methods to improve this process, including social learning, expertise tagging, social rewards, and technical communities of interest. With such tools, HR can identify the right individuals for the right opportunities, benefitting employees, the company, and ultimately, the client. These tools can also encourage employees to develop their personal brands for the benefit of the organization.

► Enhance skills transfer and new employee onboarding processes.

By creating shared repositories of social and business information, HR professionals can enable new employees to more rapidly acclimate. Group chat rooms, social bookmarks, and shared team repositories can also help shift teams rapidly, transferring real-time information from one shift to the next, such as recent customer requests and special outcomes of note.

Social businesses recognize that employees need to be agile, informed, and able to work beyond their specific job descriptions. As such, they provide tools and the cultural incentives that allow employees more access to the right information and the right people. Social businesses reduce both the cultural boundaries and the technical obstacles for people to connect with people and information, allowing unprecedented access. All this equates to an optimized workforce that can feel closer to its customers while driving operational efficiencies.

Customer case study: Improving productivity and decreasing costs

Sogeti is one of the leading providers of IT consulting services and solution integration in the world. As it expanded across 15 countries, information silos made locating and collaborating with the vast expertise in the company difficult. Sogeti needed new ways to foster teamwork and peer communication among its many business groups and locations.

To tie together their groups and locations together, Sogeti deployed an enterprise-wide social networking and collaboration platform for finding and using expertise, knowledge transfer, close teaming across distances, and sharing of preferred practices.

For more details about this customer case study, see the following web page:

The core concepts that drive Social Business

IBM defines a Social Business as a business that embraces networks of people to create business value. A social business is based on the following core concepts:

- **Engaged in connecting people to expertise**
  In a social business, individuals (customers, partners, or employees) can form networks to generate new sources of innovation, foster creativity, and establish greater reach and exposure to new business opportunities. It establishes a foundational level of trust across these business networks and, thus, a willingness to openly share information. It empowers these networks with the collaborative, gaming, and analytical tools needed for members to engage each other and creatively solve business challenges.

- **Transparent in removing the unnecessary boundaries between experts inside the company and experts in the marketplace**
  A social business embraces the tools and leadership models that support capturing knowledge and insight from many sources, so that the organization can quickly sense changes in customer mood, employee sentiment, or process efficiencies. A social business uses analytics and social connections inside and outside the company to solve business problems and capture new business opportunities.

- **Nimble in using social networks to speed up business, gaining real-time insight to make quicker and better decisions**
  In this context, agility is about getting information to customers and partners in new ways and quickly. You can turn time and location from constraints into advantages by taking advantage of the new ways of connecting and working together in a cloud and on open platforms. Social Business supports these new ways of connecting and the access required by ubiquitous mobile devices. Business is now free to occur whenever and where ever it delivers the greatest value, so that the organization to adapt quickly to the changing marketplace.

An effective social business embodies a culture characterized by sharing, transparency, innovation, and improved decision making. Such a culture enables deeper relationships with customers and business partners. This culture encourages people to document and share their knowledge and ideas with others, so that everyone can recognize, refine, and improve those ideas and content. A social business can reap great benefits, including the following benefits:

- **The ability to use more expertise and a greater diversity of skills and experience**
- **Better real-time use of current knowledge (contrasted with formalized but less current knowledge)**
- **Improved situational awareness and use of social intelligence in decision making**

Through these benefits, a social business can focus on helping people discover expertise, develop social networks, and capitalize on relationships. In fact, in a social business, employees and customers can more easily find the information and expertise they seek. Social Business helps groups of people bind together into communities of shared interest and coordinate to deliver better business results faster. It encourages, supports, and takes advantage of innovation and idea creation and builds on the intelligence of the crowd.

Trust is a key element to creating a successful social business. A business needs to create a trust-based environment so that employees are empowered to share their ideas and expertise. By the same token, the business must trust its customers by maintaining an open dialogue with them. At the same time, trust must be balanced with an appropriate level of governance and ensure that business guidelines are followed. IBM has extensive expertise in
this area and is incorporating many capabilities into Social Business that ensure governance is embedded in the solution.

The technology of Social Business

Figure 1 shows a high-level view of the areas that IBM foresees as essential to Social Business. The diagram covers the landscape of core capabilities that are important to create a social business environment in a holistic fashion. It includes the components that support the full life cycle of solution development, deployment, maintenance, and support.

The center boxes in Figure 1 show that Social Business technologies are not separate from the day-to-day activities of running the business but enhance line of business processes and application by integrating social interaction and insight. Key capabilities are people-centric, enabling your business network (employees, customers, and partners) to communicate and work more effectively at solving problems and creating innovative solutions.

Figure 1   Social Business component diagram

The heart of IBM Social Business is shown in the large center box of Figure 1. This box contains the following key technology areas:

- Interaction

  Interaction covers the many aspects of online social networking and communication. The following new capabilities, among others, support these interactions:
  
  - **Communities** enable interactions among people who share common interests, responsibilities, and areas of expertise.
  
  - **Activity streams** aggregate events across applications to bring them to the attention of interested parties. For example, an activity stream can be used to get a document approved by roles within the business. The stream might allow the participants to be notified and might allow them to review and comment on the document directly from their activity streams.
- **Real-time collaboration** provides the ability to find, reach, and collaborate with others instantly with intuitive, in-context presence awareness. This ability helps a business accelerate processes and decision making, which significantly increases employee productivity and lowers operational costs.

- **Crowdsourcing** is a self-organizing process of engaging large groups of individuals (crowds) to collect information or opinions, perform various activities or tasks, and solve problems.

➤ **Content**

With content capabilities, businesses can capture and manage a set of newly observable social data. These capabilities allow the linkage and correlation of this data to business transactions, business processes, and operational decision making. Social data is information about people (such as their locations, relationships, expertise, and communications). This content can be used to drive business decisions and help companies better understand their customers and the marketplace. Content includes the following capabilities:

- **Cloud service connectors** are connectors that enable easy access to social networking technology operating in cloud computing environments.

- **Social networking profiles** contain detailed information about the participants of the social network. This information is useful when understanding the participants within a social network.

➤ **Insight**

Insight involves technology that draws business insight from social data. This activity is accomplished by performing analysis of the social data and using the results to enable strongly vetted and informed business decisions. Insights can be obtained by using the following capabilities among others:

- **Content analysis** explores structured and unstructured content and gains insights that can help drive business decisions. For example, by exploring content that was analyzed through content analytics, you can identify patterns, observe trends in data over time, and take action when unusual correlations or anomalies surface.

- **Social network analysis** examines the structure of social relationships in a group to uncover the informal connections between people.

- **Consumer insight** enables marketing professionals be more precise, agile, and responsive to customer demands and opinions expressed through social media. This capability is accomplished by analyzing massive volumes of publicly available (Internet) content using business analytics.

### A look at important building blocks

A social business shifts the focus from documents, project plans, and other temporary artifacts to a people-centric approach. This people-centric approach includes the following key building blocks:

➤ **Social networks**

Integrated networks of individuals (employees, partners, and customers) are the backbone of a social business. Interaction between a network of trusted colleagues can lead to innovation, resolution of issues, and sharing of valuable information. This interaction benefits both the network participants (by increasing their knowledge) and the business (by enabling them to make well-informed decisions). Collective intelligence with built-in collaboration and social networking connects people and produces insights that can improve your business.
Social and real-time collaboration

Connecting remote teams and hierarchically separated departments helps break down barriers in communication and cooperation. Adding a real-time element to the communication means that individuals can obtain information more quickly, improving their ability to do their job or solve business problems. Enhancing cross-team or department communication can only benefit the company and, in some cases, streamline processes.

Analytics

Business intelligence capabilities, such as query and reporting, analysis, dashboards, and scorecards, can support people in their work assignments. The ability to assemble and search business data and related information pertinent to your business is key to getting a comprehensive view of what is going on in the marketplace and in your business.

Mobility

Through mobility, individuals can use the device that is best suited to their needs, keeping them connected where ever they are. This connectivity and information exchange is increasingly essential as the workforce becomes progressively more mobile.

Integration

Integrating social collaboration capabilities into the applications people use to do their jobs expands information sharing within the context of business processes.

IBM, with its breadth of products and services, has the technology that is necessary to supplement this core and flesh out the environment.

Social Business Agenda

The Social Business Agenda is a framework that guides companies through the actions and choices that are necessary to achieve value from social technologies across the ecosystem of employees, channels, partners, customers, and the public. Figure 2 shows an overview of the Social Business Agenda.

![Social Business Agenda Diagram]
The Social Business Agenda has the following components:

- **Align organizational goals and culture.**
  
  Any Social Business strategy starts with the business priorities of the organization. Public adoption of social technologies is forcing companies to determine how to respond to these technologies. These technologies applied without strategic alignment and planning will not achieve the desired results.
  
  For example, the success of a company is based on innovation and service. Their social strategy starts with using social networking to engage interested parties in order to accelerate the pace and value of innovations. To accomplish this objective, the company must create an environment where social networking is demonstrated by the leadership’s actions (such as supporting adoption and communicating the value of social networking).

- **Gain friends through social trust.**
  
  Building social networks is similar to building relationships in real life. The interactions build trust over time. Building positive relationships builds a positive reputation. Companies that engage in these relationships need to use social analytics to listen to the conversations and adjust accordingly. Establishing these individual and organizational digital reputations creates the environment to truly engage others.

- **Engage through experiences.**
  
  Social businesses build their digital reputation and trust by engaging appropriately with interested parties. This interaction is a motivating experience that creates emotion and excitement. Social Business builds exceptional experiences where and how the participants want to engage, which can range from mobile devices to broad-based social platforms. Creating these experiences by using techniques, such as location-based services, creates value for the participants by connections based on time, place, and need or interest.

- **Network your business processes.**
  
  Companies have spent decades automating processes and consolidating locations to drive efficiency. Now, companies are beginning to transform the nature and structure of their core business processes.
  
  Consider a bank that uses profiles, activities, and instant messaging to mobilize a virtual network of experts to win a new large corporate customer. Or consider a company engaging internal and external audiences in crowdsourcing to drive new product innovation. Both examples show social businesses using technologies and networks of people to achieve dramatic process innovation.

- **Design for reputation and risk management.**
  
  Executives are concerned with the potential risks of social business, such as losing trade secrets and innovations, violating regulations, and having their best resources hired away. These risks are all valid and need to be addressed. However, the advantages of social business are dramatically greater than the risks. Using preferred practices, such as the IBM Social Media Guidelines, identifying risks, clarifying policies, and training participants, can help limit risks.

- **Analyze your data.**
  
  Social networks are not random. Data is key to finding experts and bringing together customer communities. The organizations that understand their data, can react to conversations, and can make analytic-based decisions are likely to succeed.
  
  For example, traditional marketing campaigns launch with a limited ability to understand the impact and to make adjustments quickly. By engaging networks inside and outside the organization, social analytics can provide marketing organizations with a virtually live view of the launch’s impact and make adjustments accordingly.
Analytics also drive adoption by exposing the structure of the networks, showing the people who are the natural connectors and making the network thrive. Analyzing social connections, shared files, blog comments, and community participation exposes the linkages within these networks of people.

How to get started

Up to this point, you have learned about the advantages of Social Business, how it applies to your business, and the technologies of Social Business. IBM has products available today that are the basis for the Social Business of tomorrow:

► Exceptional web experience

IBM Customer Experience Suite brings together capabilities with which you can deliver highly engaging, personalized, and differentiated web experiences that meet the evolving needs of today’s customer. Key capabilities include business-user content management, a highly scalable and flexible web presentation framework, built-in social and real-time communications, marketing tools, personalization, enterprise search, and integration capabilities (such as analytics and commerce integration).

Also, IBM WebSphere® Portal and related products provide a single access point to web content and applications, personalized for each user’s (employee, customer, and partner) needs. They also provide tools and proven technology to quickly and easily enhance the user experience. You can build awareness, create sophisticated web experiences, and enable customers to place orders, collect information, and obtain helpful services.

► Exceptional work experience

IBM Unified Communications and Collaboration solutions deliver real-time communications services (such as instant messaging and online meetings, telephony, and videoconferencing) through the IBM Sametime® single user interface. IBM Sametime unifies the user experience while using your existing multivendor IT and telephony infrastructure.

Also, IBM Lotus® software (for example Lotus Notes/Domino) offers a collaboration platform that helps people share and manage information, make decisions, and streamline their work. Lotus Expeditor enables mobility with client integration on various devices, such as mobile devices, notebooks, kiosks, and desktops. Also, IBM Lotus Connections software gives you fast access to everyone in your network. It has such features as communities, blogs, and activities set up for either internal use (so that sensitive business information is safe) or for external use to help you engage and build trusted relationships. Add-on solutions, such as Lotus Quickr™, provide team spaces, content libraries, team discussion forums, wikis, and connectors making it easy to share documents and information.

► Exceptional cloud experience

The IBM LotusLive™ offering delivers enterprise-class email, calendaring, instant messaging, web conferencing, file sharing, and third-party applications from a cloud. With this offering, you benefit from essential and effective collaboration tools in a security-rich environment that help simplify and improve your daily business interactions with customers, partners, and colleagues.

With the LotusLive offering, you have the ability to engage the right resources at the right time so that you can collaborate and work with others outside or inside your firewall. As a cloud-based service, your collaboration and messaging infrastructure needs are managed by IBM so that you can focus on your core business.
Exceptional services

Social Business Strategy Accelerator is a brief strategy consulting engagement delivered by IBM Global Business Services®. This consulting engagement explores the clients’ current adoption of social media for both internal and external purposes, understands their desired business outcomes, and envisions new organizational and individual usage patterns and behaviors. It provides a roadmap for strategic, organizational, people, and technological change to take advantage of social media to reinvent customer relationships and get work done more efficiently and effectively.

For more information, see Becoming a Social Business: Social Business Strategy Accelerator at:

Summary

Social Business is a game changer, by enabling a business and its employees, customers, and partners to more easily find the information and the expertise they need at the time of need. It helps groups of people develop communities of shared interest and coordinate efforts delivering better business results faster. Social Business encourages innovation and idea creation by the individuals in this business relationship and builds or shares intelligence with those in the community.

IBM is uniquely positioned to help clients become social businesses for these reasons:

- Social Business Framework. IBM is developing the market-leading social collaboration platform. This platform is a collection of social, collaboration, communication, and analytic services upon which customers and independent software vendors can build business applications and community interaction.

- System thinking. An IBM core strength is the ability to understand and apply complex systems to improve business outcomes. A social business is a complex system of interconnected people across a business network. IBM can optimize IT delivery through a total systems approach including hardware platforms (on premise and cloud) and software (both middleware and solutions).

- Experience. IBM has deep industry knowledge and consulting services capabilities based on thousands of client engagements around workforce transformations and organizational change management. IBM itself is one of the most advanced social businesses in the world.

It is important to your business to explore IBM Social Business and find ways to better engage with your employees, customers, and partners. By harnessing the creative and productive potential of employees, customers, and partners across the business and expertise across a value network, companies can position themselves to enjoy deeper customer relationships, increased operational efficiency, and an optimized workforce. Businesses that use a Social Business culture and technology framework have the potential to transform themselves and take leadership roles in their industries.
Other resources for more information

For more information about becoming a social business, see the following resources:

- The YouTube video “Rheinmetall AG and becoming a social business with IBM Software”
  http://www.youtube.com/watch?v=vOLiqXR9kL8
- The IBM Social Collaboration web page
  http://www.ibm.com/software/lotus/socialcollaboration/
- LotusLive product offering

The team who wrote this guide

This guide was produced by specialists working with the International Technical Support Organization (ITSO):

William (Bill) Hassell
Director - Client Technical Professionals, IBM Collaboration Solutions

Charles Hill
IBM Distinguished Engineer and Chief Technology Officer IBM Collaboration Solutions

Scott Neuman
Director - Global Marketing Strategy, IBM Collaboration Solutions

Scott J. Smith
Business Unit Executive, World Wide Social Business Agenda

Thanks to the following people for their contributions to this project:

Sandy Carter
Vice President - IBM Social Business and Collaboration Solutions Sales and Evangelism

Pam Chandor
Global Sales Director, Web Experience Software

Sunil Hiranniah
Worldwide Collaboration Solutions Architect Leader

Steve Hopley
Manager - Market Segment Management, IBM Social Business Cloud

Karl LaWall
IBM SameTime Worldwide Sales Leader

Kelly Schmotzer
Worldwide Senior Midmarket Segment Manager for IBM Collaboration Solutions

Matt Tredinnick
Global Marketing Segment Manager, Exceptional Work Experiences
Now you can become a published author, too!

Here’s an opportunity to spotlight your skills, grow your career, and become a published author—all at the same time! Join an ITSO residency project and help write a book in your area of expertise, while honing your experience using leading-edge technologies. Your efforts will help to increase product acceptance and customer satisfaction, as you expand your network of technical contacts and relationships. Residencies run from two to six weeks in length, and you can participate either in person or as a remote resident working from your home base.

Learn more about the residency program, browse the residency index, and apply online at: ibm.com/redbooks/residencies.html

Stay connected to IBM Redbooks

- Find us on Facebook:
  http://www.facebook.com/IBMRedbooks
- Follow us on Twitter:
  http://twitter.com/ibmredbooks
- Look for us on LinkedIn:
  http://www.linkedin.com/groups?home=&gid=2130806
- Explore new Redbooks® publications, residencies, and workshops with the IBM Redbooks weekly newsletter:
- Stay current on recent Redbooks publications with RSS Feeds:
  http://www.redbooks.ibm.com/rss.html
Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:
IBM Director of Licensing, IBM Corporation, North Castle Drive, Armonk, NY 10504-1785 U.S.A.

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.
This document, REDP-4746-00, was created or updated on March 26, 2014.

**Trademarks**

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. These and other IBM trademarked terms are marked on their first occurrence in this information with the appropriate symbol (® or ™), indicating US registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at http://www.ibm.com/legal/copytrade.shtml

The following terms are trademarks of the International Business Machines Corporation in the United States, other countries, or both:

- Global Business Services®
- IBM®
- LotusLive™
- Lotus®
- Quickr™
- Redbooks®
- Redguide™
- Sametime®
- WebSphere®

Other company, product, or service names may be trademarks or service marks of others.