

Technology for Life Sciences

Technology Solutions to Fuel Business Transformation for Life Science Companies

Today's volatile economic situation and competitive environment is presenting Life Sciences companies with some of their most serious challenges. Organizations face lower margins resulting from increased price pressures, demands from payers to deliver greater value, increasing numbers of generics and OTCs, and fewer NCEs in the market. With drug portfolios drying up, Life Sciences companies are increasingly looking for mergers, acquisitions, new collaborations and licensing opportunities. Investments in biotech are also on the rise.

All areas of the Life Sciences business are being scrutinized as are the associated IT budgets. CIOs must invest wisely to spur business productivity and innovation while

simultaneously cutting costs. Companies are embarking on enterprise cost reduction and transformation initiatives, with a focused effort to move towards real-time enterprises for improved data management, reduced cycle time for decision-making, and better collaboration with external partners, physicians, payers, providers and regulators.

Life Science companies today are competing on their ability to rapidly transform to outpace the market and respond quickly to opportunities.



Technology is fueling major changes within the Life Sciences industry—from Electronic Data Capture and Closed Loop Marketing to industry initiatives such as CRIX, CDISC, FDA's critical path and DERP. Key drivers for IT spending are to:

- Help reduce the total cost of IT operations and assets and enhance their ability to service customers
- Meet new compliance regulations
- Standardize to better manage enterprise data and reduce the risk of incorrect or non-conformant information
- Initiate performance improvements to reduce time-to-market, maximize R&D spending, improve sales force effectiveness, increase market share and help ensure regulatory compliance

Technology Solutions Aligned to the Life Sciences Value Chain

Capgemini's Technology Services are rooted in deep domain knowledge and aligned to the Life Science value chain. From Discovery through Distribution, our solutions support all key areas of your business to facilitate greater agility, faster cycle times, stronger collaboration with customers, and swift adoption of compliance practices.

Capgemini's Life Sciences practice enables business transformation through a combination of deep functional experience, strong technology capabilities and flexible service offerings (see Figure 1).

Functional Capabilities

Medical Devices & Diagnostics

The medical devices industry is undergoing rapid change. Despite healthy growth projections, the industry faces several immediate challenges such as an increase in regulatory scrutiny and product recalls, higher expenditures, added pricing and reimbursement pressures, a greater focus on patient safety, and the changing definition of the customer.

Capgemini offers specific solutions in this field that assist with:

- Labeling and serialization
- Standards management such as ISO 13485 and 21 CFR 820
- Integration into upstream systems such as Electronic Data Capture
- RFID and surgical simulation
- Risk management and product design compliance
- Pre-operative and planning management
- HCP Aggregate Spend Management

Research & Development

Given a number of factors in Discovery, Pre-Clinical and Clinical, such as evolving drug discovery models, translational medicine, data standardization, harmonization of

healthcare and pharmaceutical systems, and globalization, IT organizations grapple with a wide variety of systems, services and technical skill sets.

Capgemini can help better manage these components through:

- Integrated clinical R&D ecosystems
- Clinical data management and clinical trial management solutions
- Collaborative solutions and information management
- Quality management and compliance solutions
- e-CTD, submissions, collaboration and workflow
- Portfolio and project management

Safety & Regulatory Operations

With increased scrutiny, Life Sciences organizations are enhancing the effectiveness of their pharmacovigilance and regulatory operations to improve drug development practices, reduce compliance risks, and ensure effective signal detection and reporting.

Capgemini's solutions in this area assist with:

- Safety and adverse event management systems, leveraging industry leading technologies and platforms
- Integrated safety repository for effective monitoring, reporting and intelligent analytics
- Electronic safety data exchange based on industry standards such as E2B
- Document control and regulatory query management

Commercial Operations

Several factors are driving Life Sciences companies to examine their sales and marketing programs and enhance the supporting technologies. These factors include changing prescriber behaviors and the availability of innovative approaches such as e-detailing, multi-channel and closed loop marketing. Add to this the increased regulatory scrutiny on sales and marketing



activities. As a result, Life Sciences companies are realizing the need to build an integrated sales and marketing ecosystem to better support their top-line growth.

With a primary focus on helping Life Sciences companies improve top-line revenues and market share, Capgemini's solutions in this area assist with:

- Marketing and sales effectiveness
- Closed loop marketing
- Sales force automation
- Customer relationship management
- Sales and marketing analytics
- Health care professional spend management

Manufacturing, Logistics & Distribution

Capgemini's global capabilities in manufacturing, logistics and distribution, coupled with specific Life Sciences and technology experience, can help organizations address key challenges. Our solutions include:

- Supply chain and logistics
- Procurement
- LEAN manufacturing
- Warehousing and transport
- Inventory and warehouse management

Consumer

Capgemini's consumer-focused solutions help achieve better channel integration and drive efficiency through:

- Point-of-sale systems
- Trade promotion management
- RFID and tracking
- Consumer portals and integration

Technology Capabilities

Capgemini delivers leading technology solutions to Life Sciences companies in the following areas:

- Business Information Management: Business Intelligence, Data

Warehousing, Master Data Management, Reference Data Management, Data Integration, Dashboard Portals

- Web Technologies & Content Management: J2EE, .Net/ASP, BEA WebLogic, IBM WebSphere, SharePoint
- Enterprise Integration: Service-Oriented Architecture (SOA), Web Services, Platform Migration, Portfolio Optimization
- Customer Enablement: Customer Relationship Management, Marketing Optimization and Effectiveness
- ERP: SAP, Siebel, Oracle/PeopleSoft and J.D. Edwards to address key business issues such as Supply Chain Logistics or Structured Product Labeling

Solutions

Technology Strategy & IT Architecture

Capgemini provides companies with an integrated strategy and execution roadmap to help achieve their business goals through technology enablement. We develop a holistic view of the business and its supporting applications, infrastructure, data, security and governance model, and provide architecture principles, frameworks, methodologies and other solution accelerators that can help Life Sciences companies implement solutions faster and more efficiently.

Solution Engineering

Capgemini's Solution Engineering offering leverages a building-block, component-based approach to architecture development. We employ engineering frameworks, applying SOE/SOA concepts to re-engineer existing applications, and utilize robust

Figure 1: Capgemini Life Sciences Service Portfolio

	Medical Devices & Diagnostics	Research & Development	Safety & Regulatory Operations	Commercial Operations	Manufacturing, Logistics & Distribution	Consumer
Functional	Labeling & Serialization	Electronic Data Capture & Integration	Safety & Adverse Events Management	Sales & Marketing Operations	GxP Compliance Support	Point of Sale (POS)
	HCP Spend & Compliance Support	Clinical Data / Trial Management	Integrated Safety Repository	Closed Loop & Multi-channel Marketing	Supply Chain, Logistics & RFID	Contact Center Management
	Non-conformance & CAPA	Innovation, Drug Development & ELN	Medical Coding & Dictionaries	HCP Spend Management	Procurement & Supplier Management	Trade Promotion Management
	Outcomes Management	Protocol & Assay Management	Regulatory Query Management	Marketing Operations & Management	Warehousing & Transportation	Consumer Driven Replenishment
	Hybrid Device Management	Electronic Submissions, EDMS & CDISC	Structured Product Labeling	Contracts, Rebates & Trade Sales	LEAN Manufacturing	Relationship Marketing
Technology	Business Information Management (Business Intelligence, Data Warehousing, Master Data Management, Data Integration, Dashboards)					
	Web Technologies & Content Management (J2EE, .NET/ASP, Portals, Text Search and Analytics, SharePoint, Documentum, OpenText)					
	Enterprise Integration & Migration (SOA, Web Services, ESB, EII, Security, I&AM)					
	Customer centric Solutions (Customer Relationship Management, Marketing Optimization and Effectiveness, Multi-channel Solutions)					
Services	ERP (SAP, Oracle, Oracle – PeopleSoft and JD Edwards)					
	Technology Transformation (Technology Strategy, Rationalization, Assessment and Roadmap)					
	IT Architecture (Technology Building Blocks, Solution Architecture, System Architecture, Modeling)					
	Application Development & Maintenance (Application Development, Maintenance and Support Operations)					
	Life Sciences Solution Centers with Rightshore® (Full Lifecycle Projects & Extensive Services)					
	Solution Engineering (Business-focused Solutions)					
Quality Management & Validation (Compliance Support for Life Sciences)						
Program, Portfolio & Project Management and Optimization						
Business Process Outsourcing						

methodologies and tools to drive expedited results for our clients. Capgemini invests heavily in our partner ecosystem and leverages these relationships to bring high-quality solutions to our clients. We have developed methodologies such as the Accelerated Delivery Platform, Distributed Delivery Framework, Agile, RUP and Rapid Design & Visualization to increase implementation efficiency.

Application Maintenance

Capgemini provides high-quality Application Maintenance of our clients' suite of applications, including enhancements, code changes, testing, after-hours support and scheduled/emergency release management. Through our Rightshore™ global delivery model, we offer Help Desk and Level 1, 2 and 3 User Support services and production support of applications and environments. Our global team utilizes CMM Level 5 processes supported by robust tools and methodologies.

Quality Management & Validation

Capgemini's Quality Management & Validation solution provides a strategic approach for compliance assurance to help enable Life Sciences companies to meet their compliance obligations. Capgemini performs an evaluation of the maturity level and develops an execution roadmap for transformation. our offerings include platform Validation, Audit Trails, Data Retention Policies, Regulatory Compliance Support, Configuration Quality Assurance Management, Testing Services Consolidation and Delivery Cycles Optimization.

Program and Project Management & Optimization

Through our Program Management & Optimization solution, we can help implement tightly controlled portfolio management and service delivery processes for production operations to improve delivery execution and productivity. We also work with you to optimize customer demand management in annual planning and business relationship management.

Life Sciences Solution Centers

Underpinning all of our service offerings is Capgemini's unique approach to Global Distributed Delivery—what we call Rightshore™. Through our Life Sciences Solution Centers, we provide a host of services from Architecture and Design Development to Testing and Quality Assurance to Maintenance and Re-engineering. We work with you to identify the appropriate onshore, nearshore and offshore locations for your programs to lower costs, leverage existing infrastructure and minimize start-up time. Our Rightshore teams leverage a repository of tested solution templates and leading practices used across the industry.

Technology Consultants with a Passion for Life Sciences

Capgemini's Life Sciences technology consultants are unique due to their domain knowledge and direct experience working in the Life Sciences

industry. Across our company, our employees bring the best of our combined services—from consulting to technology to outsourcing—to offer custom, industry-specific solutions to address your needs. We have approximately 2,500 affiliated Life Sciences professionals worldwide.

In a recent analyst report that analyzed customer references, our Life Sciences practice ranked #1 in industry experience based on having the most full-time employees hired directly from the Life Sciences industry and the highest expertise ratings.

Our clients include leading companies across Life Sciences segments including pharma, biotech, medical devices, agribusiness and healthcare services. We bring together our best talent from the right balance of onshore, nearshore and offshore locations and work with clients as a unified team.



About Capgemini

Capgemini, one of the world's foremost providers of consulting, technology and outsourcing services, enables its clients to transform and perform through technologies. Capgemini provides its clients with insights and capabilities that boost their freedom to achieve superior results through a unique way of working, the Collaborative Business Experience. The Group relies on its global delivery model called Rightshore®, which

aims to get the right balance of the best talent from multiple locations, working as one team to create and deliver the optimum solution for clients. Present in more than 30 countries, Capgemini reported 2008 global revenues of EUR 8.7 billion (approximately USD \$12.74 billion) and employs 90,000 people worldwide.

More information is available at www.us.capgemini.com.

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