

Microsoft Digital Pharma

> Solutions for Life Sciences



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Microsoft®

Table of Contents

Microsoft Digital Pharma
> Solutions for Lifesciences

Introduction: Page 3
Facing the Digitally Enabled Future

Thriving in today's competitive pharmaceutical marketplace requires a clear vision and innovative tools. Find out how Digital Pharma can navigate your enterprise toward success.

Overview of Digital Pharma Page 4

"Speed to Insight." "Value for Cost." Learn how Digital Pharma can drive innovation, increase collaboration, and reduce complexity across the value chain.

Enabling Solutions Pages 6-10
on the Microsoft Platform

Streamline your research and development, improve your sales and marketing, and maximize connectivity. Your Microsoft modular platform can improve cross-enterprise capabilities.

Partner Ecosystem Page 13

Microsoft products and technologies plus partner expertise equals pharmaceutical innovation.

Getting to Digital Pharma: Page 14
An Incremental Approach

Allocate resources wisely with our step-by-step approach.

Conclusion Page 15

Digital Pharma combines vision with technology and helps pharmaceutical companies thrive in today's changing market.

Introduction: Facing the Digitally Enabled Future

Drug pipeline problems. Pricing pressure. Tightening government regulations. Today, the external stresses converging on a typical pharmaceutical company are rapidly building toward what's been called the "perfect storm." Leaders in the life sciences industry need new ways to navigate the unpredictable waters ahead.

> Digital Pharma can improve your speed to market and maximize your return on your R&D investment in key areas like drug development, data collection and management, portals and business intelligence, and sales and marketing.

Within an enterprise there are even more challenges. Companies need to learn and implement better, integrated ways to make crucial, costly decisions, taking into consideration the views of knowledge workers who are geographically dispersed, as well as information from data sources which are disconnected or paper-based.

Microsoft Digital Pharma for Life Sciences represents our vision and plan for enabling pharmaceutical companies to combat these internal and external challenges. We believe that your future success will come from embracing a different framework, one that can at once drive two industry imperatives:

- **Speed to Insight** – Connecting disparate resources and data more effectively to enable quicker, novel insights that in turn speed critical decision-making.
- **Value for Cost** – Implementing changes toward a more digitally enabled future, to realize a greater return on existing and new technology investments.

Effectively addressing these imperatives will ultimately require more digitally enabled operations. That's where Microsoft Digital Pharma Solutions for Life Sciences can help. Using the Microsoft platform, the typical pharmaceutical company can improve its operations and help enable point-solutions to meet specific value-chain capability enhancement requirements.

Learn more about how the Microsoft digital framework for connected systems can help your organization achieve better integration, cost savings, and efficiency in key areas like **drug development, data collection and management, portals and business intelligence, and sales and marketing.**

Overview of Digital Pharma

Traditionally, pharmaceutical and biotech companies have been built on a complex mix of proprietary programs and systems assembled application-by-application over the course of many time. Although these infrastructures have for some remarkable innovation, the current market demands that information flow from person to person and from organization to organization with greater speed, accuracy, and ease.

The Microsoft Digital Pharma vision allows organizations like yours to leverage existing investments in technology for improved drug development, data collection and management, portals and business intelligence, sales and marketing, and overall integration.

Building a Solid Foundation

A strong technological and ideological framework lets your pharmaceutical company develop "Speed to Insight" and "Value for Cost." Once you have established where you stand on four key areas, you can begin to develop your Digital Pharma solution.

- Vision: What is your point of view on the future of the pharmaceutical operating environment?
- Industry Imperatives: What needs will drive the development of your operating environment?
- Value Chain: What capability enhancements do you need to realize these imperatives across your value chain?
- Technology Infrastructure: How strong is your underlying technology architecture? Can it support your proposed capability enhancements?

The Digital Pharma Advantage

In developing Digital Pharma for Life Sciences, Microsoft and its partners have focused on providing organizations like yours these important benefits:

- Reduced Complexity: Expect solutions that are easy to learn, easy to integrate, and simple to deploy and manage.
- Improved Productivity: Look forward to knowledge workers who can more easily communicate and collaborate, not to mention make decisions more rapidly.
- Integrated Innovation: Provide a robust platform for future innovation, with products that connect people and systems based on Microsoft standards.
- Value: A better bottom line. Enabled solutions provide value through a combination of the price advantages of the Microsoft® Windows® platform, the ability to use commodity hardware, and a comprehensive set of rapid application development tools, which help ensure a higher return on your technology investments.

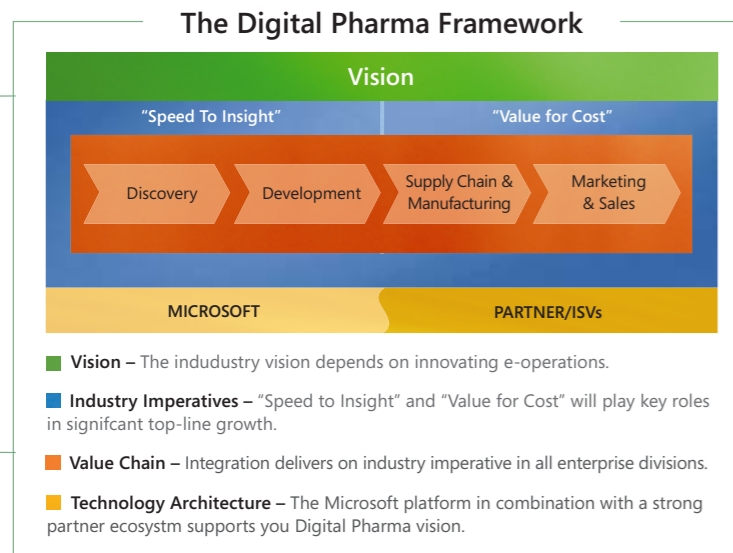


Figure 1

> *A strong technological and ideological framework lets your pharmaceutical company develop "Speed to Insight" and "Value for Cost."*

Microsoft Digital Pharma Streamlines Your Operations for:

- > More Rapid Drug Development
- > More Comprehensive Data Collection and Management
- > More Resourceful Portals and Business Intelligence
- > More Effective Sales and Marketing



	Solutions & Proof Points*	Contributing Technologies & Clients	Featured Microsoft Technology (Product)															
SALES & MARKETING	Forecaster	Thorogood (AZ)	●	●	●													
	Analysis Platform*	(MS Health)*	●															
	WebForceT Suite	Dendrite	New Partnership															
	Sales and Marketing Effectiveness	Proscap (Wallace)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Key Opinion Leader Relationship Management	(Top 20 Pharma)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
SC	Closed Loop Promotions	Proscap/Accenture (Top 10 Pharma)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Axapta	Aston/Intel (Boehringer)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
DEVELOPMENT	Catalyst*	(Top 10 Pharma)*	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Meridio 4	Meridio Limited	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	PharmaReady	Onshpere (INC)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Corporate Compliance Suite	Qumas (Purdue)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Clinical Trials Initiation	Immediant (Top 10 Pharma)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Client Management*	Internal Computer Services*	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Enterprise Project Management	Project Assistants (Top 10 Pharma)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Thorogood Associates BI	Thorogood Associates	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Advantrial	Covansys (Indian Counsel on Med Res)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DataLabsXC	DataLabs (Merck)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DISCOVERY	TrialMaster*	OmniComm*	New Partnership														
		LifeTree ICTM	Life Tree (Walter Reed Army Medical Center)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Life Sciences Suite	Merit (Mankind)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		Clustering Services*	(Perlegen)*	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
		DNA Chip III*	(Top 10 Pharma)*	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	Accenture	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		

Figure 2

> Microsoft partners and internal customer development teams can implement a variety of powerful solutions designed specifically for your industry.

Enabling Solutions on the Microsoft Platform

Microsoft Platform and Pharmaceuticals: The Big Picture

Microsoft Digital Pharma for Life Sciences helps people at pharmaceutical companies work together more effectively, respond more quickly, and deliver high-quality information and services at a lower cost.

Modular Platform Equals Flexibility and Growth

The Microsoft platform supports a range of cross-enterprise capabilities, from basic e-mail (Microsoft Outlook and Exchange) and Web browsing (Microsoft Internet Explorer) to advanced identity management (Microsoft Active Directory) and business intelligence (Microsoft SQL Server).

With this modular architecture, you can easily add on or integrate new capabilities as your enterprise continues to grow and develop.

Are You Ready for the "Perfect Storm"?

Life Science Industry Facts and Figures

Microsoft Digital Pharma can help your organization face the enormous strategic and tactical barriers to continued success in the pharmaceutical industry, including:

- Pipeline Pressure: The average number of new compounds in the pipeline of the top 10 pharmaceutical companies has remained static since 1998¹. By 2008, it is estimated that the top 12 ethical portfolios will be at greater than 40% generic risk². How are you planning to offset pending revenue and profit loss from patent expirations?
- Pricing Pressure: Governments, payors, employers, and consumers will continue to pressure the industry to reduce prices.
- Industry Restructuring: Significant merger and acquisition activity will persist. New partnerships will continue to form to access new technologies and share investment costs and risks.
- Government Regulations: The future will likely hold more stringent government regulations, tighter compliance monitoring, and harsher penalties for non-compliance.
- Consumer Influence: With the Internet and subsequent consumer access to information, consumers and consumer groups are becoming much more vocal and influential, forcing pharmaceutical companies to become more patient-centric.
- Saturated Promotional Spend: U.S. pharmaceutical companies face significant issues gaining access to doctors. In the last eight years, the number of sales representatives (93,000) has doubled while the number of physicians has increased by only 15%³.

1 Tufts University CSDD
 2 Datamonitor Generics Report (2003)
 3 Verispan

Drug Development Solutions

With the cost of developing new drugs spiraling almost out of control, the length of time required to take a new product through development, and federal approval continuing to increase, life sciences companies face severe pressure to streamline procedures and reduce costs.

Studies have shown that it takes an average of 10 – 15 years to go from preclinical development to marketing approval. The average cost for this process is \$900 million. Of course, for every 5,000 compounds discovered only one ever reaches the pharmacist's shelf, (SOURCES FOR THESE STATS?)

Microsoft Windows Server System™ provides the foundation for a new generation of solutions. Clinical trials can be conducted more efficiently, at lower costs, and with fewer resources. Built to integrate tightly with each other and with the systems companies already have in place, Windows Server System is easy to use and provides the high levels of reliability, scalability, and extensibility that today's pharmaceutical enterprises require.

CASE STUDY

A Digital Pharma Solution for Merck & Co.

Utilizing InfoPath 2003, Merck can optimize the creation, transmission, and collection of information for late stage clinical trials.

By building a pilot application using InfoPath™ and Microsoft Windows Server™ 2003, Merck found a solution for replacing their paper-based system for reporting on patients participating in clinical trials. This solution shortens the time required to complete forms, reduces errors, and improves the quality of information. Plus, by using XML to capture and transmit report data, information could flow between systems easier. As a result, reports are being completed faster and the quality of study data captured in critical databases has dramatically improved.



Data Collection and Management

The Digital Pharma initiative provides a wide range of options for streamlining data collection and facilitating management efficiency. Microsoft has constructed several modular systems that can be uniquely tailored to fit individual pharmaceutical companies goals and mission.



The Patient Recruitment Accelerator Framework

Looking for a way to get customers and partners working together to dramatically improve the initiation of clinical trials?

This framework provides a method of leveraging existing knowledge repositories to enhance insight and drive efficiency in the initiation of clinical development. Using Microsoft .NET technologies, the development team can have complete access to insight and information previously hidden in clinical trials databases.

The result? More rapid protocol development, better investigator selection, and automated authoring of contracts.

Clinical Trials Initiation–Reference Implementation

Traditionally, the development and maintenance of clinical trial documents have followed a document-based authoring process. By hiding content within a document, knowledge workers are unable to re-use information within trials, in other business systems, or in later trials and submissions. Then of course, there is the problem of version control, which needs to be maximized in order to avoid conflicts between concurrent work streams.

Microsoft and its partner, Immedient, worked with a top 10 global pharmaceutical company to implement the Clinical Trials Initiation – Reference Implementation. Using this solution, Microsoft technology including Office 2003, Windows Server System, and SharePoint Server 2003, Information Bridge Framework 1.0 facilitated the authoring work flow including integration of individual sections and electronic solutions for notification, review, and approval.

The result? Clinical trials are managed more efficiently and their results reach the right people more quickly and with greater accuracy.

Portals and Business Intelligence

The Microsoft modular platform, including Microsoft .NET and Windows Server System, provide a powerful and transparent framework for connecting people, information, systems, and devices. This platform also provides developers with the necessary tools to quickly create collaborative solutions that lay the groundwork for dramatic improvements in information sharing and productivity.

> “The Key Opinion Leader Portal offers a cost-effective option for collecting and integrating information. You don’t have to throw away your existing investments and you will get more value out of your information”

*— Jason Burke
Life Science’s Industry Strategist, Microsoft*

The Key Opinion Leader Portal

One of Microsoft’s most exciting solutions in the Digital Pharma initiative is the Key Opinion Leader Portal. This tailorable solution can manage and update information about one of the industry’s most important assets—physicians who influence their peers.

This tool was developed to create an environment where the external and internal users can pull disparate organizational information needed about key opinion leaders into one flexible database. An example of integration architecture, the technology ensures that the latest data is always available. Rather than collecting and storing data, data is pulled in real time. And, you can add an unlimited number of data sources.

From sales and marketing to research and development, the benefits of this portal can support every division in the enterprise. Double-booking becomes a problem of the past. Comprehensive data allows you to build better relationships with key physicians. And because all financial transactions can be tracked, you can stay within FDA compliance, and make certain that no ethical boundaries are being crossed.

Modular, transparent, and flexible, this portal can easily be designed to suit an individual company’s needs. In fact, this innovative new solution is currently being used successfully by one of the industry’s top 20 pharmaceutical companies. And, one of its biggest values is how quickly the solution can be developed. The implementation time frame nets out at approximately six weeks.

Sales and Marketing: Closed Loop promotion

New solutions based on Microsoft Tablet PC technology are transforming the physician-representative interaction from a “detail” to a targeted, educational experience.

Although, physicians depend on pharmaceutical sales representatives for their clinical information, gaining physicians, access is becoming more and more difficult. On average, a representative has 96 seconds per primary product to educate the physician, acquire a signature for samples, and register the physician for events.

Microsoft Closed Loop Promotion redefines the interaction between sales representatives of pharmaceutical companies and physicians. This solution gives representatives a flexible means of accessing and presenting product information as well as the ability to customize their sales calls for well-defined segments of the physician and healthcare communities. Sales representatives can tailor their messages to a physician’s specific needs and interests. Key supporting information can be presented as clinical reprints, videos, localized managed care information, and invitations to educational events.

Brand teams can gain regular insight into the physician interactions and change marketing messages and strategy accordingly. And by recording real-time data about each sales interaction and providing a framework for sharing that information with strategic decision makers, the Tablet PC is helping companies adjust their messaging as market conditions change.

> “Effective communication is critical in ensuring that physicians have the most current and relevant information available, so they can make the best possible decisions about patient care.”

– David Helgans,

Senior Director/Group Leader in the Cardiovascular/Metabolic Group, Pfizer.

A Digital Pharma Solution for Pfizer

By using an innovative mobile solution, Pfizer is providing healthcare professionals with the most up-to-date and visually appealing information so they can make well-informed decisions regarding treatment options for patients.

Taking advantage of industry-leading technologies, Pfizer’s sales and marketing teams are leveraging compelling content, Proscap software, and Microsoft technology to break through an increasingly cluttered marketplace with current and relevant information for physicians, nurse practitioners and physician assistants.

This mobile solution uses Tablet PCs, Microsoft Windows Server 2000, Microsoft SQL Server and the Microsoft .NET Framework to accelerate the pathway of knowledge from clinical researchers to physicians and, ultimately, patients. By creating, distributing, and updating information electronically, Pfizer has reduced production, distribution, and environmental costs associated with printed promotional materials. The result? Pfizer’s can respond more quickly to market changes. Consequently, the overall productivity and effectiveness of its sales force interactions has dramatically increased.





Partner Ecosystem

Industry Partners

To provide pharmaceutical companies with the best choice of solutions to meet their specific needs, Microsoft works with more than 25,000 certified partners whose capabilities and deep industry knowledge supplement Microsoft's strengths. The Microsoft Life Science's partners include:

- Immedient
- Covansys
- DataLabs
- Proscapa
- Accenture
- Siebel
- Eclipsys
- Allscripts Healthcare Solutions
- Stentor
- Amicore
- Siemens Medical Solutions
- digiChart
- Greenway Medical Technologies, Inc.
- IDX Systems Corporation (Imagecast)
- iMedica
- Misys Healthcare Systems
- Proclarity
- Nextgen Healthcare Information Systems

Integration Partners

Microsoft's partner ecosystem also include systems integration partners who work closely with Microsoft to develop unique Digital Pharma Solutions including pharmaceutical portals, clinical and administrative forms, and integration solutions:

- CapGemini
- BORN
- Quilogy
- InfoSys
- Hewlett-Packard

> Microsoft works with more than 25,000 certified partners whose capabilities and deep industry knowledge supplement the Microsoft strengths.

Getting to Digital Pharma: An Incremental Approach

What pharmaceutical company can afford to take an all-or-nothing approach to technology adoption? Each area of the value chain has its own requirements, restrictions, and institutional needs.

Organizations need the ability to follow an incremental approach to IT investments that balances the benefit offered by each solution against company concerns including cost, the potential for disruption, and the impact on existing systems.

The Microsoft Digital Pharma for Connected Systems delivers a rapid return on new technology investments through discrete point solutions that come with a manageable price tag. These solutions support an incremental approach in three ways:

- First, platform-centric solutions are inherently modular. Pharmaceutical needs can easily be addressed by the capabilities of the Microsoft platform.
- Second, the flexibility of the enabling architecture allows for implementation of multiple Digital Pharma solutions that can be implemented individually on the same Microsoft platform.
- Third, new solutions can be added to the Microsoft platform as the technological or enterprise needs of a biotech or pharmaceutical organization change. See *Figure 3* for an illustration.

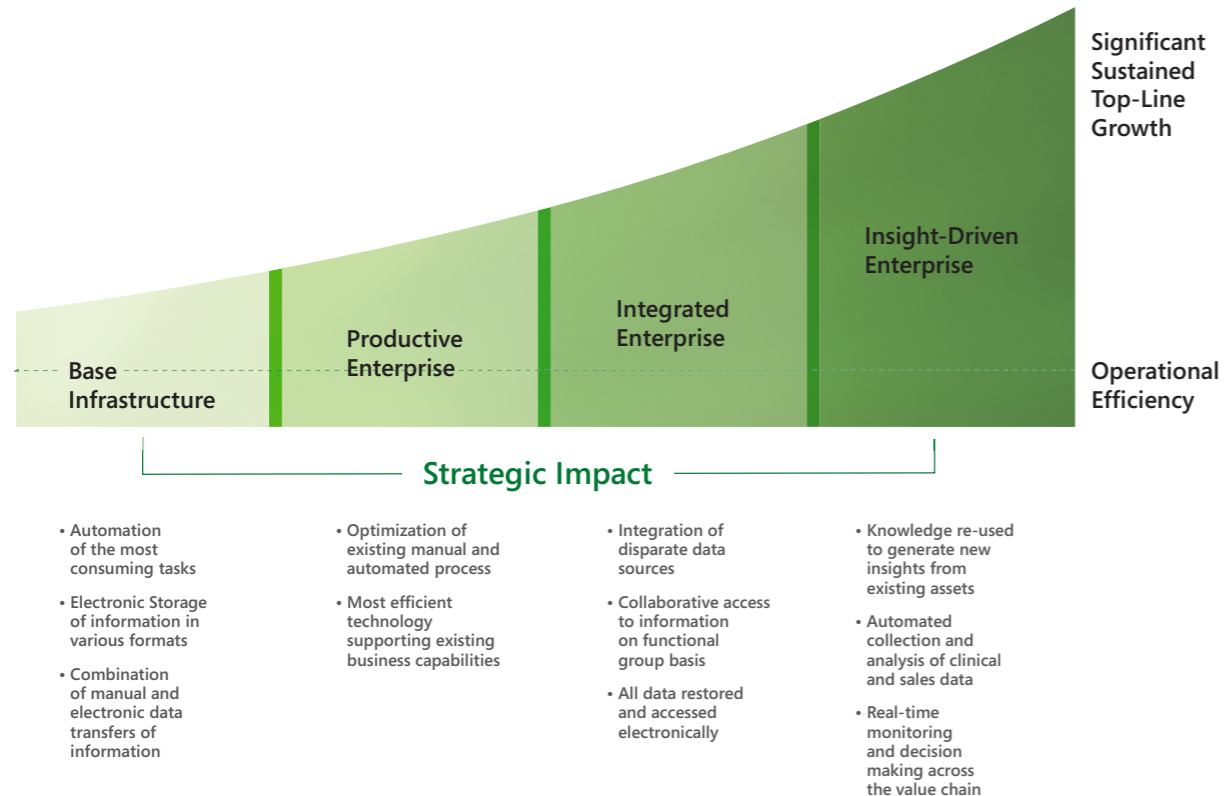


Figure 2

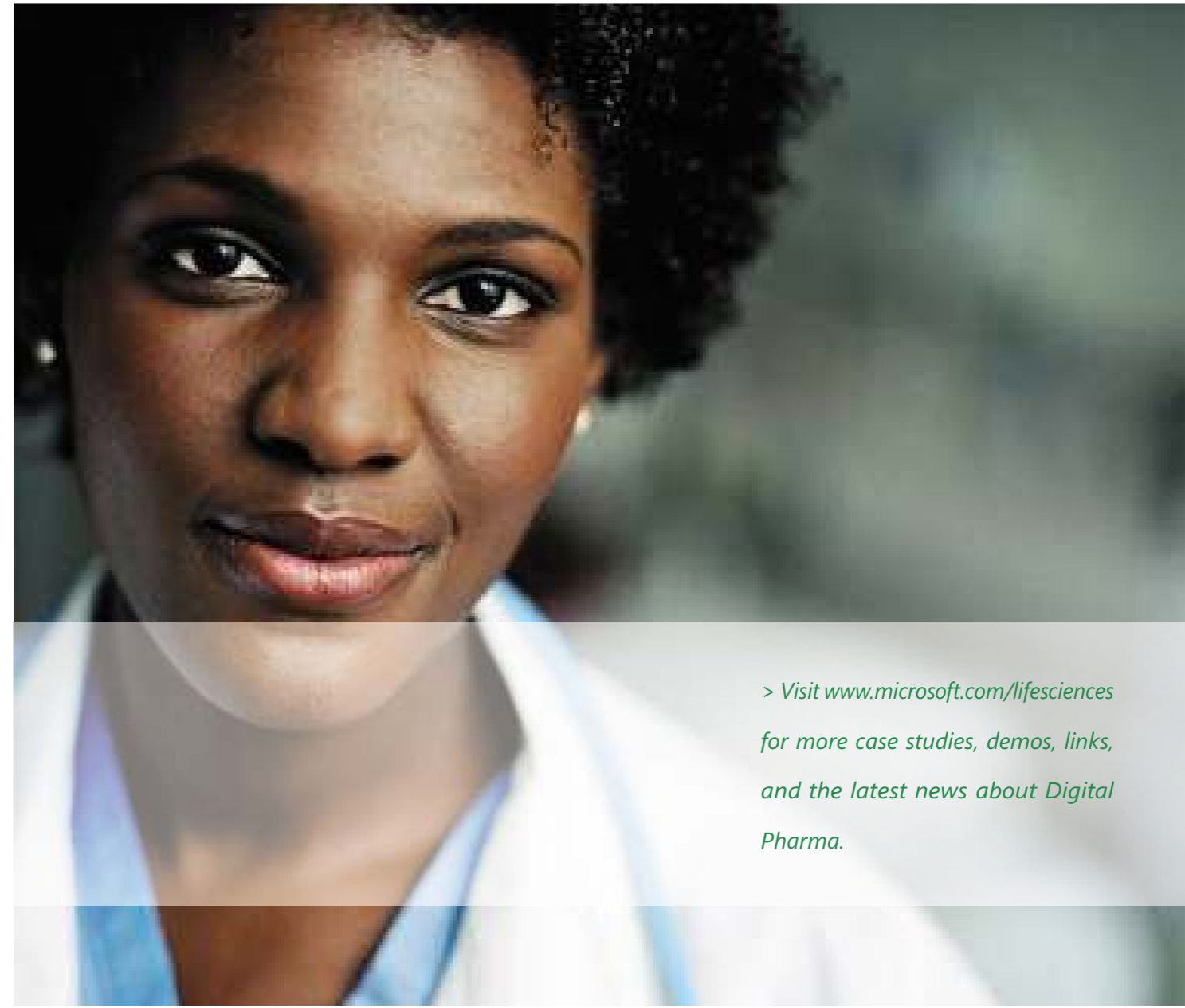
Conclusion

Digital Pharma, a Vision for Life Sciences

The pharmaceutical industry faces a myriad of difficult challenges and pressures, driving the need for enhanced integrated business capabilities through a transformation of supporting technology.

Leveraging the Digital Pharma framework, Microsoft is poised to help the pharmaceutical industry to address the two pressing industry imperatives of "speed to insight" and "value for cost."

Microsoft delivers these integrated solutions with a platform value proposition based on reduced complexity, improved productivity, greater speed to market, and overall greater value. Plus, by leveraging your companies existing technology investment, your Digital Pharma initiative promises quickly implement solutions that your users will easily adopt.



> Visit www.microsoft.com/lifesciences for more case studies, demos, links, and the latest news about Digital Pharma.



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