YOUR ROADMAP FOR A DIGITAL-FIRST BUSINESS

Transformation at Microsoft

The Data Pros

Microsoft

THE FOURTH INDUSTRIAL AGE

GET ONBOARD WITH DISRUPTION

" We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another.

In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before. "
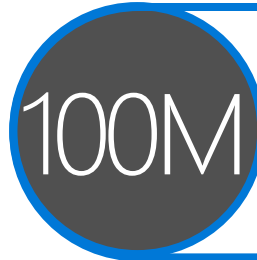
Klaus Schwab, Founder and Executive Chairman
of the World Economic Forum
January 2016

100M Leaders in digital transformation generate an average of $100 million more in additional operating income each year[1]

The first revolution helped humans mechanize production with steam power, followed by the second revolution which was enabled by electricity and brought on the era of mass production. The third revolution used electronics and information technology.

The speed of current breakthroughs and the exponential pace of disruptive innovation now bring about a fourth industrial revolution—characterized by unprecedented processing power, storage, access to knowledge and the blurring of lines between physical, digital, and biological space.

It is a unique point in time, and it will fundamentally alter the way we live, work and relate to each other.

Capitalizing on this phenomenon is the key to innovation and growth. From the rise of connected devices and other "things" within the Internet of Things (IoT), the growing mounds of data, to augmented reality and the next frontiers, the challenge for business leaders is to harness the disruptive force of technology to increase efficiency and shape their destiny.

Naturally, this comes while navigating the expectations of a changing workforce, addressing evolving cybersecurity threats, and managing a host of other challenges.

In response, companies are going through a digital transformation that is creating huge opportunities, but is also increasing the pressure. Although many businesses are sold on the "why" of digital transformation, they are stuck on the "how." How do you transform for success in the future while running your business today?

As we partner with and enable thousands of organizations who are navigating their transformation journeys, we share some of the insights and examples of our own journey in this report, and provide answers on how to find your roadmap for a digital-first business.

50% of the workforce will be "digital natives," connected 24/7 and work the way they want to by 2020[2]

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1 Keystone Strategy Interviews, Oct 2015 – Mar 2016
2 "Mind the gaps: The 2015 Deloitte Millennial Survey," Deloitte Touche Tohmatsu , 2015

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> **Every company is a software company.**
>
> *You have to start thinking and operating like a digital company.*
>
> *It's no longer just about procuring one solution and deploying one. It is not about one simple software solution.*
>
> *It's really you yourself thinking of your future as a digital company.*

- Satya Nadella
  CEO, Microsoft

MIND-SET FOR CHANGE

HOW DO YOU THINK ABOUT TRANSFORMATION?

It used to take a company 20 years to be worth a billion dollars, now it can take just two. Industry commentators have stated that the future belongs only to the fast. New challengers, including "born in the cloud" start-ups, are disrupting markets by deploying new technologies quickly to achieve agility.

For many larger organizations, the challenge is how to execute similar changes in a considered way. To reap the benefits of digital transformation, companies must understand that realizing agility and competitive advantage will look different given their greater complexity and reach.

In an age of "disruption" leaders have an opportunity to reframe their ambitions.
To stay competitive, organizations should pivot their thinking toward "rapid incrementalism"— looking at what defines success and altering existing structures to make the most of what they have.

Instead of viewing constraints as limiting or restrictive, businesses need to realize that they can drive incredible innovations and value for the business. Embracing constraints in their thinking creates an opportunity to be truly creative, an opportunity to believe and achieve new things.

The good news is that intelligent technologies like machine learning, big data analytics, and the flexibility of hybrid cloud computing can help. With the aid of technology, organizations can become agile and access unprecedented amounts of data on their customers, their industry, and themselves.

And those organizations that are truly forward-thinking can harness that data, supported by a cloud-first infrastructure and predictive modeling, to anticipate and respond quickly to trends.

To stay competitive, organizations should pivot toward "rapid incrementalism"— incrementally altering existing structures to make the most of what is already in place.

Microsoft is a trusted voice in this space and can meet organizations where they are on the path to digital transformation. The future of work is here and large organizations can use technology, and Microsoft's experience, to aid their path toward digital transformation and agility.

Microsoft

TRANSFORMATION AT MICROSOFT

REIMAGINING IT LEADERSHIP TO ENABLE DIGITAL TRANSFORMATION

The digital economy creates daunting requirements for operational structures and business architecture, particularly for any established organization with legacy systems.

In a pre-digital economy, companies focused on process efficiency and effectiveness, and executed with a divide-and-conquer approach. In a digital economy, the goal is to architect for agility and new types of business models, to empower employees and customers to innovate at a pace unimaginable in earlier generations.

As a result, the discussion around technology platforms is no longer confined to IT. Leaders from sales, marketing, support, human resources, and elsewhere view technology as a core part of innovating their processes. It's up to IT leaders to help drive innovation across the full range of their companies' operations, whether or not the IT organization actually owns the technology.

Microsoft IT plays two roles within the company:

- Help the company transform while managing applications, infrastructure, and security.

- Serve in the role of enterprise customer advocate by testing new software products and services and providing feedback.

As Microsoft's first customer the IT organization looks at scenarios that cross multiple product groups to make sure there is a great end-to-end experience, and delivers that feedback to the product engineering teams.

To help transform the company, Microsoft leaders continue to raise expectations around the role that IT can play by aligning digital services into 15 cross-company service offerings. These service offerings reflect the core processes and capabilities of the company and bring together all facets of IT.

> **❝** *I've shifted more of my time away from managing IT to working with internal business leaders and external customers.*
>
> *IT used to be disconnected from conversations about the Microsoft business. Now, we talk about which investments will improve our service offerings. With a service offering model, IT is directly engaged in business value.* **❞**
>
> — Jim DuBois
> CIO, Microsoft

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TRANSFORMATION AT MICROSOFT

THE ROADMAP TO DIGITAL TRANSFORMATION

Leading digital change requires leaders to have a vision of how to transform their company for a digital world. So, where to look first? What digital activities represent good opportunities for business transformation?

For most businesses the first focus will be the customer. Effectively, to generate new sources of revenue, companies need to reimagine the customer experience along their value chain.

As they reinvent how to connect and engage with customers in new ways, an organization will also need to transform how it empowers employees. Empowered employees will help drive optimized operations and processes and lead companies to transform products and services.

At Microsoft we have identified these four pillars as the core drivers for our roadmap leading to digital transformation.

ENGAGING CUSTOMERS	**EMPOWERING EMPLOYEES**	**OPTIMIZING OPERATIONS**	**TRANSFORMING PRODUCTS**
Give them new experiences they love.	Reinvent productivity and enable a data-driven culture.	Modernize portfolio, transform processes and skills.	Innovate products and business models.

Build natural, tailored experiences by harnessing data representing a complete view of your customer, and then drawing actionable insights that can deliver personalization at scale and achieve a segment of one.

Empower people to achieve more by designing a workplace where every working style can thrive—one that harnesses digital intelligence to improve experiences and enables the flexibility of mobility, while keeping your organization, people, and information secure.

Accelerate the responsiveness of your business, improve service levels, and reduce costs with intelligent processes that anticipate the future and coordinate people and assets more efficiently.

Harness data as a strategic asset, shifting from hindsight to foresight, automating manual processes, delivering personalization to customers, and innovating with new business models, services, products, and experiences—all to differentiate and capture emerging revenue opportunities.

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> *Digital transformation has allowed our sales and marketing teams to move beyond a short-term focused license sale to a full understanding of the customer relationship.*
>
> *Getting deep insights into how customers use our products has transformed how we engage them, how we help them get more value and **how we turn them into Microsoft fans.***
>
> - Chris Capossela
> CMO, Microsoft

RETHINKING CUSTOMER ENGAGEMENT

A lot has changed in very recent times around how we engage customers. With the rise of mobile and social technologies, customers are now more powerful than ever. Their always-connected status and ability to find information in seconds puts them in control of their own experience, and this trend has forced businesses of all sizes to rethink how they engage and connect with their customers.

We are no longer focused on "touch points" during the marketing and sales process, but instead find a need to engage in meaningful, ongoing relationships that involve frequent online and real-world interactions.

5 of 6 millennials in the US connect with companies on social media networks[1]
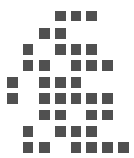
Rethinking how to engage customers

Customer centricity integrated across the business: Get everyone in the organization to be customer obsessed, focus on satisfaction, align customer experience and strategy, create seamless service experiences, and act based on customer insight.

Creating fans and segment of one: Go where your customers are, personalize based on customer insight, and turn customers into engaged advocates who love our products.

Data-driven customer insights: Take advantage of high-quality, data-driven insights and create experiences that customers really want.

Marketing leaders as technology decision makers: Partner with IT on technology decisions and tools needed to get ahead of competition.

1 Five Truths for Future Marketers. SDL research. March 19, 2014

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TRANSFORMING CUSTOMER ENGAGEMENT AT MICROSOFT

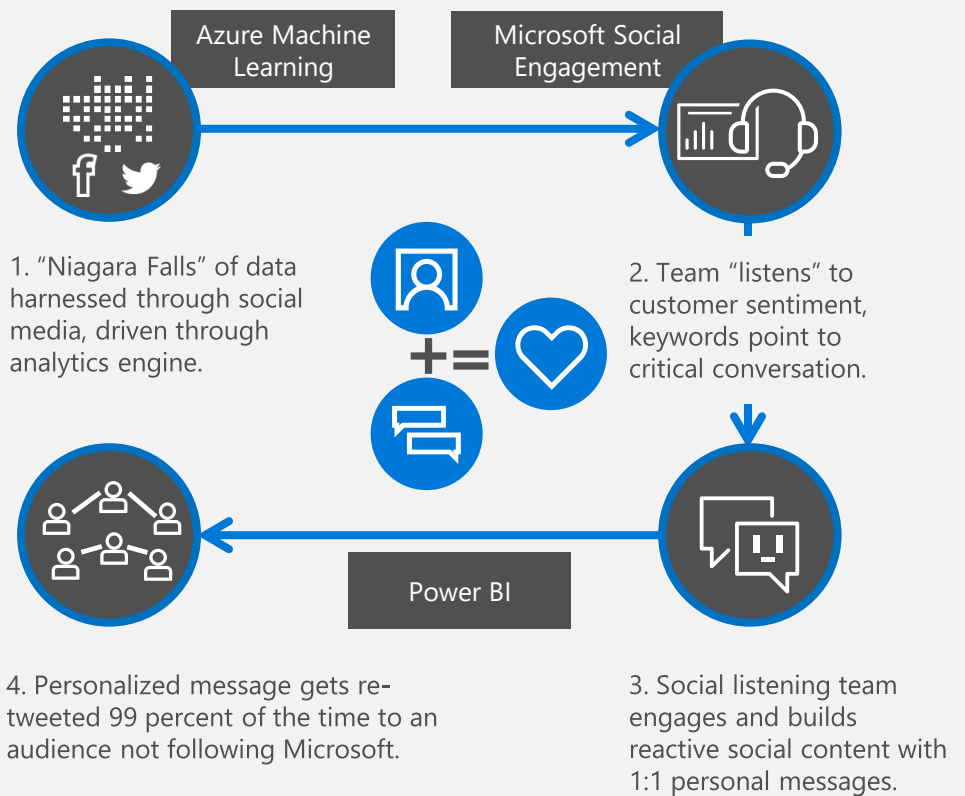**ENGAGING CUSTOMERS**

BUILDING LOVE FOR OUR PRODUCTS

When 5 out of 6 millennials connect with your company[1] through social media, getting ahead of what is being said about your products and services on social channels becomes center stage for any engagement strategy.

At Microsoft we created the *Social Command Center* to support our social media handles such as @Xbox, @OneDrive, and 26 other brands by listening to customer sentiment.

The 130 people that work in the US Social Command Center make it their mission to obsess about customer chatter online and engage in the online conversations with individuals and community.

By enabling these people with the right technology, we are able to engage in 16,000 social interactions per day in the US command center alone—and build fans every day.

SOCIAL LISTENING AND 1:1 ENGAGEMENT

Azure Machine Learning

Microsoft Social Engagement

1. "Niagara Falls" of data harnessed through social media, driven through analytics engine.

2. Team "listens" to customer sentiment, keywords point to critical conversation.

Power BI

4. Personalized message gets re-tweeted 99 percent of the time to an audience not following Microsoft.

3. Social listening team engages and builds reactive social content with 1:1 personal messages.

Watch how social media can create fans for your products

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TRANSFORMING CUSTOMER ENGAGEMENT AT MICROSOFT

ENGAGING CUSTOMERS

BUILDING CUSTOMER RELATIONSHIPS WITH 360-DEGREE LIFECYCLE INSIGHTS
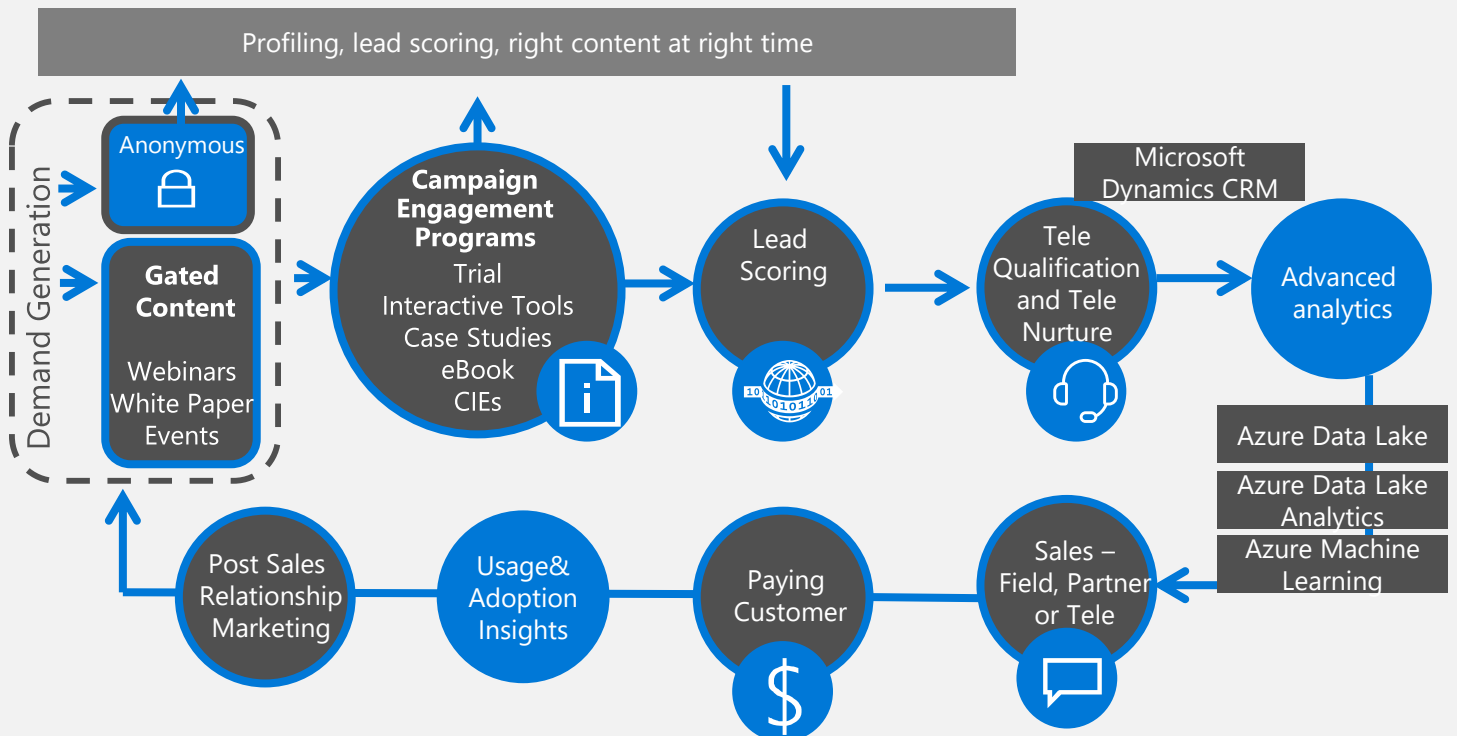
Getting a consistent, 360-degree view of your customer across all touch points and channels is the first important step in your engagement strategy. Microsoft has embarked on a project that not only ties together customer insights from various sales and marketing channels, but allows us to build deeper, more contextual relationships across all segments with our customers.

We have created a Global Engagement Program, spanning pre-sales and post-sales customer journeys, which enables us to nurture customers digitally through their lifecycle from unknown leads to free and trial users to paying customers in the best-suited channels (email, web, mobile, in-product, social).

The goal of this platform is to provide always-on, connected experiences with contextually relevant and personalized information to actively nurture customers to conversion and ongoing usage and engagement.

Our Global Engagement Program is enabled through first-party marketing automation services (Microsoft Dynamics CRM and other in-house services), third-party marketing automation tools for demand generation and email marketing, Azure for data management, and analytics capabilities (Azure Data Lake, SQL Azure, Azure ML, Azure Stream Analytics, Power BI).

360-DEGREE LIFECYCLE INSIGHTS

Profiling, lead scoring, right content at right time

Demand Generation

Anonymous

Gated Content

Webinars
White Paper
Events

Campaign Engagement Programs

Trial
Interactive Tools
Case Studies
eBook
CIEs

Lead Scoring

Microsoft Dynamics CRM

Tele Qualification and Tele Nurture

Advanced analytics

Azure Data Lake

Azure Data Lake Analytics

Azure Machine Learning

Post Sales Relationship Marketing

Usage& Adoption Insights

Paying Customer

Sales – Field, Partner or Tele

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TRANSFORMING CUSTOMER ENGAGEMENT AT LOWE'S

ENGAGING CUSTOMERS

LOWE'S

EXPERIENCING HOME IMPROVEMENT IN A WHOLE NEW WAY

BUSINESS NEED

- Lowe's operates 1,840 home improvement retail stores in the US, Canada, and Mexico.

- Because home improvement is an incredibly visual undertaking, it can be difficult to conceptualize a full-scale remodel using just sample squares and paint swatches.

SOLUTION

- Microsoft partnered with Lowe's to help reinvent visualization and design in a whole new way, using holograms.

- Using HoloLens, Lowe's is providing customers in select pilot stores a new way to experience home improvement.

- Through HoloLens customers get to experience a variety of design options for kitchen cabinetry, countertops, appliances, and features like backsplashes, in a visually rich and interactive way.

OUTCOME

- For Lowe's, it brings customers a new way to experience full-scale design and appliance options while maximizing precious floor space

- Lowe's can quickly and affordably show an array of options that can be digitally refreshed with far less impact than what it would take to replace tile or cabinetry samples.

- In-store designers, spouses, or friends can view what the customer is seeing—and changing in real time—through a hand-held Surface tablet.

Microsoft

ROADMAP FOR CHANGE

ENGAGING CUSTOMERS

Customer engagement starts by understanding customer behavior. Intelligence plays a critical role in understanding and dissecting massive amounts of data to recognize patterns of sentiment and behavior across our customer base.

The roadmap for a digital-first business translates into these key priorities:

- **Build the infrastructure** to enable customer engagement, such as telemetry, a 360-degree view of the customer, and modern commerce systems.
- **Drive viral find, try, and buy opportunities** that help cross-sell and upsell, and build these capabilities into our product services.
- **Ensure core services are API** (application platform interface)–**enabled** to allow simpler integration.

ROADMAP FOR CUSTOMER ENGAGEMENT	BUSINESS BENEFITS
PHASE 1: DESIGN AND AGREE ON YOUR DATA MODEL • Decide on centralized or federated data model. • Agree where data is managed—business versus IT data management.	• Get better insights • Implement compliance
PHASE 2: SHARE 360-DEGREE VIEW OF CUSTOMER • Gather internal and external data about customers from all channels. • Enable gathering, storage, transformation, and distribution of big data. • Aggregate data from systems across the enterprise for reporting and analysis (for example, provide a centralized warehouse/datamarts). • Design for ability to share data with go-to-market partners.	• Enhance customer experience • Increase collaboration • Raise customer satisfaction • Reduce operating costs
PHASE 3: GAIN INSIGHT AND CONNECT • Determine customer journey and needs. • Model and analyze data for customer patterns and insights. • Provide collaborative and shared workspaces. • Ensure core systems are enabled as services (API-enabled).	• Better serve customers • Improve business insight • Increase sales
PHASE 4: ENABLE PREDICTIVE EXPERIENCES AND OFFERS • Implement predictive modelling for customers' preferences and desires with real-time business and customer analytics, predictive models. • Promote customer-specific offers driven by customer insights. • Suggest decision options to customers with prescriptive analytics. • Create engaging experiences and media.	• Boost upsell/cross-sell • Increase fan satisfaction • Improve market/wallet share • Reduce customer churn

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Digital transformation starts with your employees and how your culture empowers them to transform and grow the business.

At Microsoft we aspire to have a culture with a growth mindset, with an insatiable curiosity about our customers' needs, and a drive to find new market-making opportunities.

— Kathleen Hogan
Chief People Officer, Microsoft

EMPOWERING EMPLOYEES

Organizations can't transform to digital unless people do. Digitization and automation are outpacing organizations' skill level and the workforce's ability to become proficient with the new technologies.

Eighty percent of organizations agree the difference between current workforce skills and future business requirements is very real. To ensure this trend doesn't disrupt an organization's health, IT leaders are introducing digital literacy strategies and increasing employee engagement with new technology rollouts.

40M
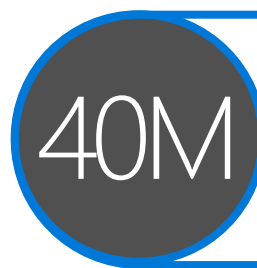
There will be a shortage of **40 million** highly skilled workers globally by 2020[1]

By 2018, 30 percent of organizations will formalize workforce digital literacy strategies to improve business outcomes and employee engagement.[2]
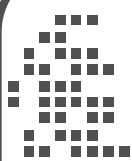
Rethinking how to empower employees

Strategic: Be intentional about people priorities and related strategies. Invest in driving a customer-obsessed, transformative culture focused on growth.

Data driven: Use the data available to gain insights about your workforce, and make strategic decisions.

Self-service and simplified processes: Create new delivery systems and models for HR services. Simplify and provide self-service tools for HR, standardizing routine processes.

Skills: Invest in new skill development and training.

1 Mark J. Barrenechea,"Digital: Disrupt or Die," OpenText, 2015
2 Research Institute for Corporate Productivity, October 19, 2015

Microsoft

ENABLING THE EVERYWHERE OFFICE: MICROSOFT JAPAN

The nature of how we work—and even the workplace itself—has undergone a dramatic evolution. Successful businesses use the power of mobility to support employee productivity and collaboration, while mitigating the risks that come with providing freedom and space to employees. In this way, managing security doesn't have to come at the expense of productivity.

Microsoft sees remote work and mobile technologies as key solutions to today's business challenges. A mobile workforce reduces cost, improves business continuity, reduces environmental impact, improves work/life balance, and helps attract and retain talent.

Although teleworking has been promoted since the 1990s in Japan, many companies there still operate within deeply ingrained business and cultural traditions. The effect has been to slow down widespread adoption of worker mobility. To promote change, Microsoft Japan launched a telework initiative, Telework Week, designed to promote cloud and mobile technologies to Japanese businesses.

In 2015, Telework Week involved 651 partner companies who could test-drive Microsoft solutions and experience seamless access through cloud-based Microsoft software and services. The initiative also helped raise awareness in Microsoft Japan and resulted in a bigger shift toward remote working.
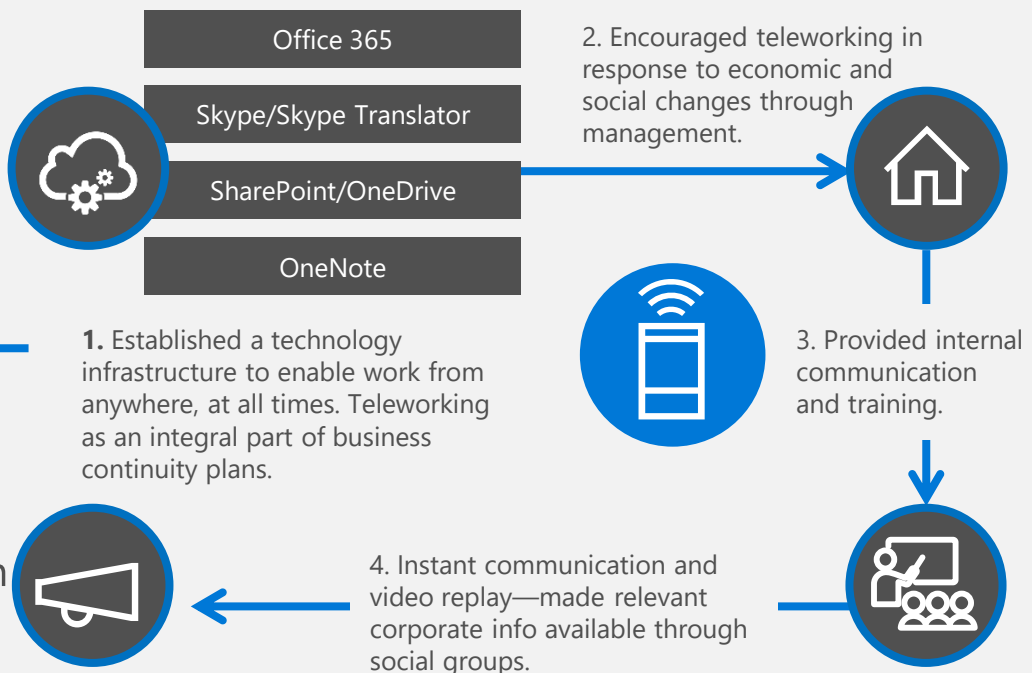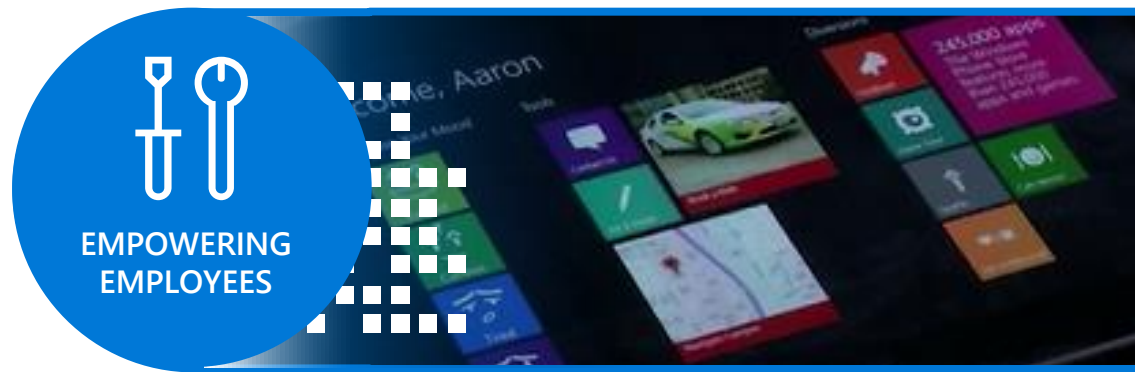
ENABLING THE EVERYWHERE OFFICE

3,281
Productivity hours gained annually in Microsoft Japan

$10,000
per year per employee real-estate savings with full-time telework

- Office 365
- Skype/Skype Translator
- SharePoint/OneDrive
- OneNote

1. Established a technology infrastructure to enable work from anywhere, at all times. Teleworking as an integral part of business continuity plans.

2. Encouraged teleworking in response to economic and social changes through management.

3. Provided internal communication and training.

4. Instant communication and video replay—made relevant corporate info available through social groups.

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EMPOWERING EMPLOYEES AT MICROSOFT

DELIVERING AN ENGAGING HUMAN RESOURCES EXPERIENCE

Just as Microsoft implemented significant changes to better meet their customers' ever-evolving needs, it also embarked on a new mobile-first, cloud-first corporate strategy and undertook far-reaching corporate reorganization and cultural changes to better align the company with the new strategy.

To help drive the strategy and cultural changes, Microsoft fundamentally altered its approach to managing employee performance and development to promote new levels of teamwork and agility. The human resources organization took the lead role in designing and implementing the new approach and in delivering on a new vision called *HR Reimagined*.

HR Reimagined focused on delivering a cloud-based, self-service HR portal, accessible from anywhere at any time, as well as new applications to attract, develop, and retain talent. The new HR portal lets employees update personal information, allows managers to track and approve HR transactions, and provides access to AskHR, a central support center.

In addition, HR-related data is made available to internal customers through self-service Power BI in a single live dashboard, allowing managers to track key HR insights for their business.
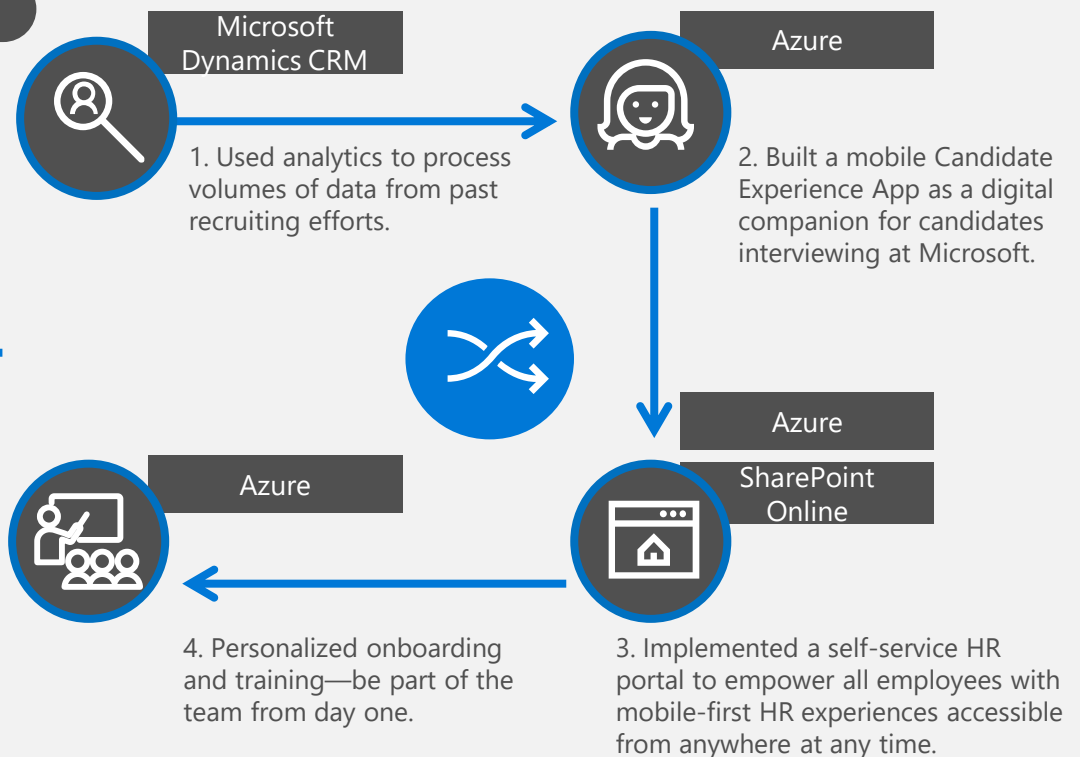
Microsoft also embraced talent analytics to analyze volumes of data generated in the recruiting effort, and developed a mobile digital companion application for the recruitment process, to attract millennials with a better recruitment experience.

The new tools and resources provided as a result of the HR Reimagined initiative are used by Microsoft employees daily, and have resulted in productivity increases and cost savings by standardizing on Azure.
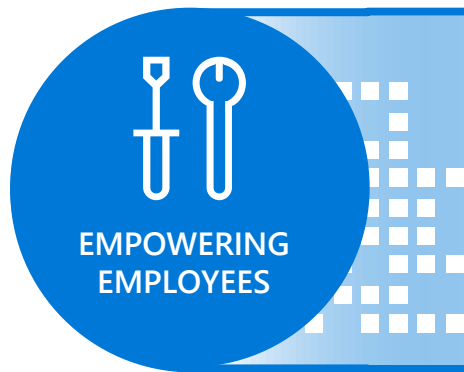
HR REIMAGINED

100,000
Employees

25,000
Employees collaborate on Yammer every day

Microsoft Dynamics CRM

1. Used analytics to process volumes of data from past recruiting efforts.

Azure

2. Built a mobile Candidate Experience App as a digital companion for candidates interviewing at Microsoft.

Azure
SharePoint Online

3. Implemented a self-service HR portal to empower all employees with mobile-first HR experiences accessible from anywhere at any time.

Azure

4. Personalized onboarding and training—be part of the team from day one.

Microsoft

REACHING AND EMPOWERING EVERYONE

EMPOWERING EMPLOYEES

KENNAMETAL®

> ❝ Being a CIO is about more than just achieving benchmark performance and lowest costs for technology assets. It's really about collaborating with your business leaders. At Kennametal, we recognize the huge impact it makes on getting those results if we have the right people onboard, particularly when they work together. ❞
>
> - **Steve Hanna**
> CIO, Kennametal

BUSINESS NEED

- With 14,000 employees in 60 countries, across many core competencies, Kennametal found it challenging to connect individuals with each other.

- Kennametal needed a secure way to foster collaboration among its thousands of materials scientists and engineers spread from Germany to the United States to India, and drive closer connection to its 5,000 factory workers who do not have their own desktop.

SOLUTION

- Adopted Office 365 for conferencing, collaboration, instant messaging, and voice.

- Created a company-wide intranet to give access to company news, BI, and Yammer social network.

- Now Kennametal factory workers use their mobile devices to instantly access the company intranet.

OUTCOME

- Workers are more engaged in product discussions and share ideas through social networking.

- All employees have access to critical resources and can share knowledge through OneDrive.

- Kennametal's on-time performance has improved by double digits in just 14 months because all employees have insight to collective team performance.

Watch the video ⊚

Kennametal Productivity Success

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ROADMAP
FOR CHANGE

EMPOWERING EMPLOYEES

Knowledge and insight exist inside your infrastructure; it's just waiting to be found.

By securely breaking down information barriers you can understand and learn how everyone in the company uses their time and help maximize the impact of our workforce. Take these steps: :

- **Provide a mobile experience** on any device.
- **Transform business processes** for HR and others.
- **Make processes easier to use** and more intuitive across platforms.
- **Reinvent collaboration productivity** with Office 365.
- **Enable a data-driven culture** with curated, easy-to-access data.

ROADMAP FOR EMPOWERING EMPLOYEES	BUSINESS BENEFITS

PHASE 1: UNDERSTAND YOUR DATA TAXONOMY AND CATEGORIZATION SECURITY MODEL

- Boost employee productivity
- Drive knowledge sharing
- Increase employee satisfaction

PHASE 2: CONNECT PEOPLE AND TEAMS
- Enable seamless idea sharing and collaborative development irrespective of location and time zone.
- Increase productivity across functional teams, geographical boundaries, and supplier organizations.
- Reach everyone.

PHASE 3: CREATE VALUE THROUGH MOBILE PRODUCTIVITY
- Use data from in-market products, social networks, and analytics to uncover new opportunities and roadmap commitments.
- Enable leaner co-creation of value across the organization.

- Improve return on innovation investment
- Reduce cost of product development

PHASE 4: APPLY ANALYTICS

Enable employees to be customer-obsessed:
- Gain insights from product sentiment and market trends to inform product design.
- Support decision making, planning, and customer connection.

- Enhance market insight into ideation
- Accelerate innovation
- Increase revenue from innovative "first to market" products

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Every company, irrespective of industry, is, or will soon be, thinking and operating like a digital company.

This means every part of an organization will need to transform and reengineer operations to support the new speed of business.
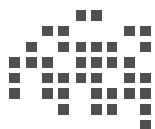
OPTIMIZING OPERATIONS

Optimizing your operations is the next area of digital transformation, and it's one technology disruptors like the Internet of Things (IoT) are accelerating at a rapid pace.

For example, field equipment once isolated and siloed, can now be connected on a continuous basis—enabling businesses to shift from merely reacting to events, to responding in real time or even preemptively.

As we think through the application of these capabilities, they hold the potential to reshape relationships with customers by supporting unprecedented levels of service—

service that is able to be improved continuously by gathering data across a wide, dispersed set of end points, drawing insights through advanced analytics, and then applying those learnings to introduce improvements on a continuous basis.

Arguably this is something software companies have done historically, but now organizations across a breadth of industries can take the same approach and tap into new efficiencies, such as applying machine learning to anticipate and solve customer issues before they become issues.

Rethinking how to optimize operations

Harness technology for next level of efficiencies: Use IoT and sensors to gain new levels of efficiencies that impact sales and customer satisfaction.

Use digital platforms to reduce delivery timeframes: Connect field equipment on a continuous basis, and gather data across a wide, dispersed set of end points, draw insights and optimize production and delivery times.

Test new products and services at a fraction of the cost: Try more, fail, try again, and test new services and products today at a fraction of the cost due to digital enablement.

Anticipate and solve customer issues before they become an issue.

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TRANSFORMING OPERATIONS AT MICROSOFT

OPTIMIZING OPERATIONS

IMPROVING UTILIZATION OF BUILDINGS WITH IOT

Our IT Innovation group partnered with the Microsoft facilities team to come up with a better way to distribute and use office space, by learning more about how, when, and what type of public meeting space our employees are using.

Finding the right meeting space when needed can be a challenge. While information in Outlook shows whether conference rooms are available, it is often not updated by meeting organizers, and does not show information about ambient noise level or temperature.
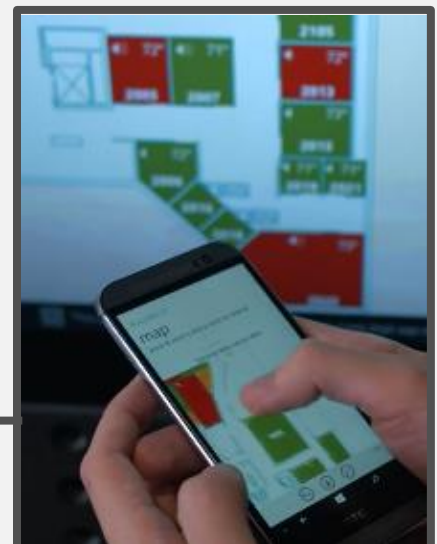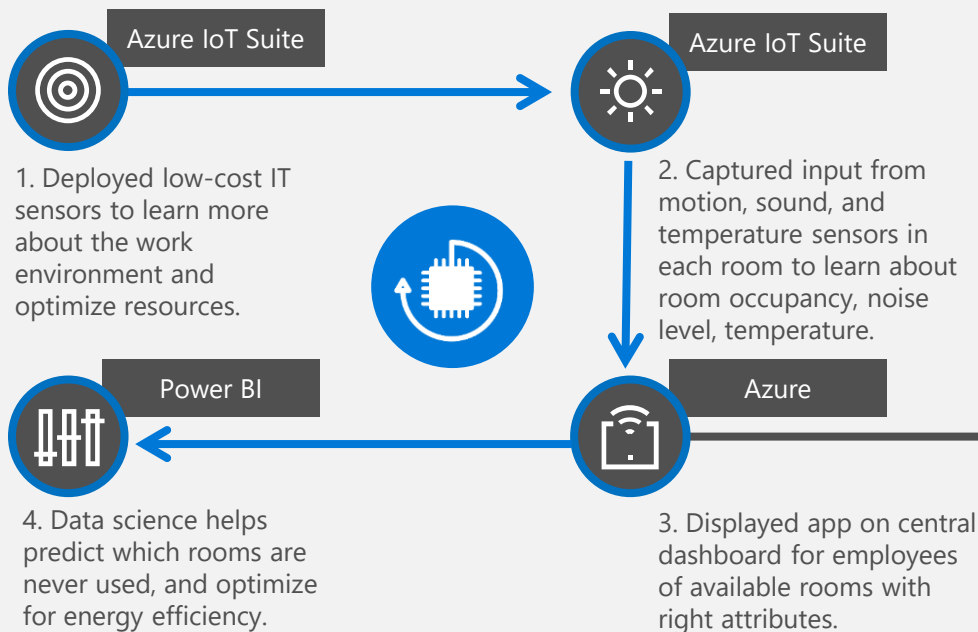
Sensors are more efficient. Our innovation team wanted to get to a better solution using sensors. The team deployed low-cost IT sensors in each meeting room to learn more about the attributes of each meeting space and help optimize the work environment.

Sensors gather data such as noise level, temperature, and occupancy, and feed the data into a mobile application, which shows all the information collected in a compelling, easy-to-read dashboard view.
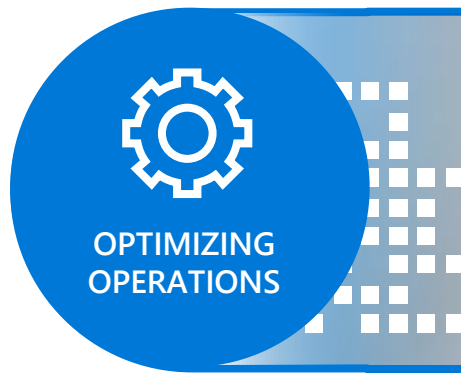
The dashboard displays the floorplan and all available rooms in a heat map—with red rooms as occupied, green rooms as available. In addition, the user can look up other characteristics—such as seating capacity and noise level.

One of the key benefits of the solution is that our facilities team now has insights into usage patterns of conference rooms and public meeting spaces, which results in energy cost savings, and better insights for floor planning and meeting space distribution.

IMROVING UTILIZATION OF BUILDINGS WITH IOT

Azure IoT Suite

1. Deployed low-cost IT sensors to learn more about the work environment and optimize resources.

Azure IoT Suite

2. Captured input from motion, sound, and temperature sensors in each room to learn about room occupancy, noise level, temperature.

Power BI

4. Data science helps predict which rooms are never used, and optimize for energy efficiency.

Azure

3. Displayed app on central dashboard for employees of available rooms with right attributes.

18

Microsoft

TRANSFORMING OPERATIONS AT MICROSOFT

OPTIMIZING OPERATIONS

USING PREDICTIVE ANALYTICS IN THE SALES PROCESS

Knocking on your customer's door at just the right time gives you an edge. They are ready to buy, and you are ready to sell. How can you ensure that every sales call you make occurs at the right time?
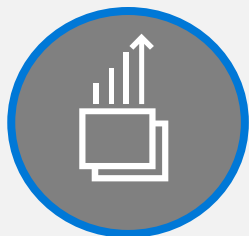
The top challenge facing sellers and leaders in the field today is the proliferation of tools and disconnected experiences that reduce productivity and create inefficiency. In the Qvidian 2015 State of Sales Execution Report, 22 percent of respondents cited an inaccurate pipeline as their key challenge for not reaching quotas.

As part of the effort to modernize sales and marketing capabilities for Microsoft sales teams worldwide, Microsoft IT developed a customized sales solution to streamline seller tasks—the Microsoft Sales Experience (MSX).
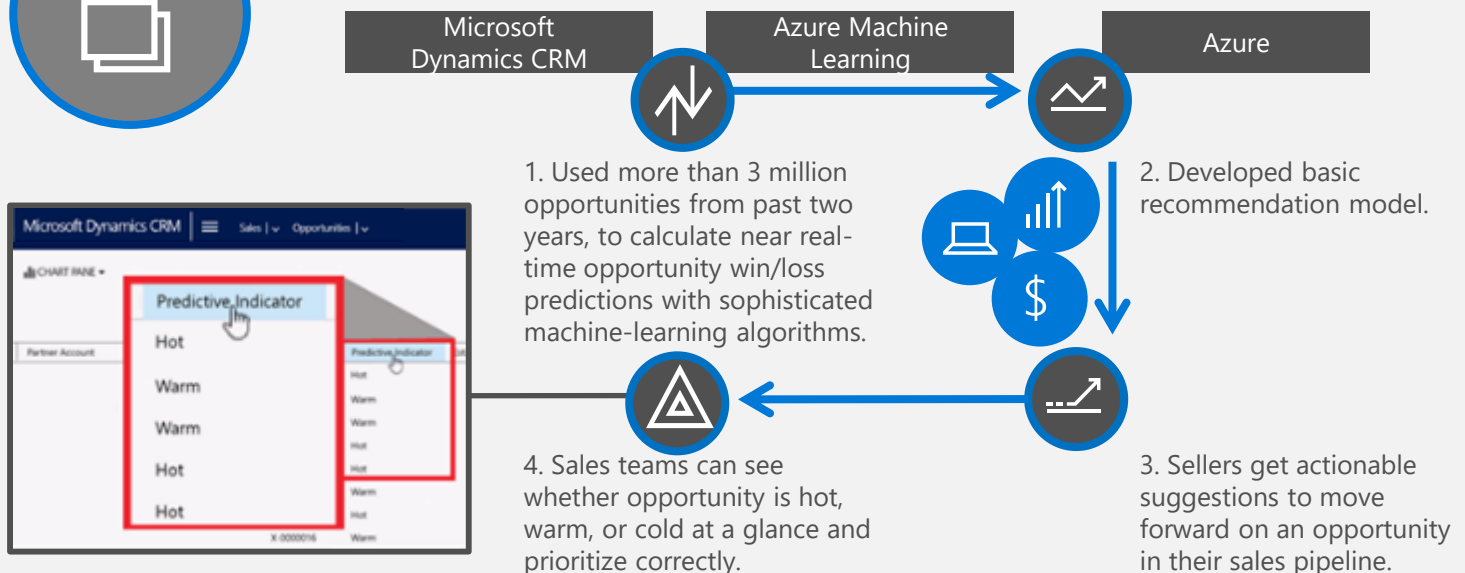
MSX is built on Microsoft Dynamics CRM Online. We recently added an advanced analytics model to MSX, which increases the ability of our sellers to make informed decisions by giving them win/loss probability information. The probability information is based on the analysis of 3 million sales opportunities from the past two years.

Using sophisticated machine-learning algorithms the system calculates near real-time opportunity win/loss predictions based on the historic data patterns.
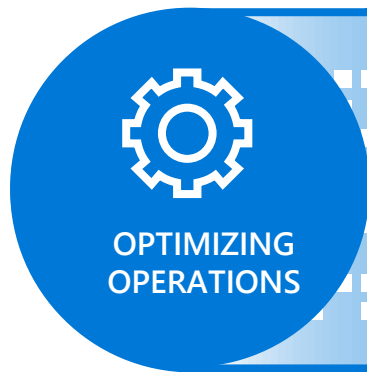
Sellers can access the information for each customer opportunity, based on telemetry and visualization in Microsoft Dynamics CRM as well as Power BI. The application also provides suggestions for specific actions our sellers can take next, per opportunity. The Microsoft Dynamics CRM team is working to make this functionality available in our CRM solution soon.
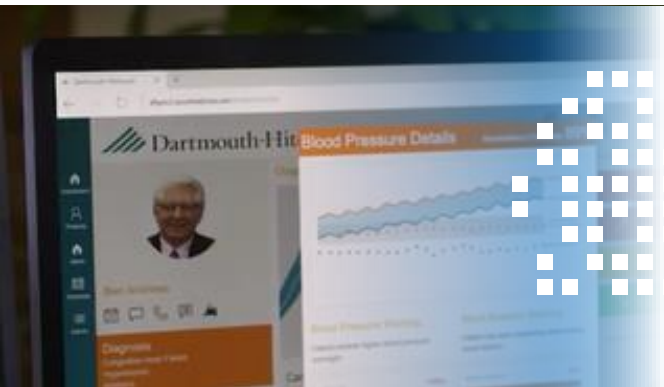
PREDICTIVE ANALYTICS IN THE SALES PROCESS

Microsoft Dynamics CRM

Azure Machine Learning

Azure

1. Used more than 3 million opportunities from past two years, to calculate near real-time opportunity win/loss predictions with sophisticated machine-learning algorithms.

2. Developed basic recommendation model.

4. Sales teams can see whether opportunity is hot, warm, or cold at a glance and prioritize correctly.

3. Sellers get actionable suggestions to move forward on an opportunity in their sales pipeline.

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HARNESSING TECHNOLOGY FOR NEXT LEVEL EFFICIENCIES

OPTIMIZING OPERATIONS

Dartmouth-Hitchcock

"With Cortana Analytics Suite and Microsoft Dynamics, we're transforming the way healthcare is delivered today, improving patient outcomes, reducing costs, and offering an unprecedented level of personalized care."

— Ethan M. Berke, MD, MPH
Medical Director, Clinical Design and Innovation

REVOLUTIONIZING HEALTHCARE WITH PERSONALIZED CARE AND PROVIDER COLLABORATION

BUSINESS NEED

- Dartmouth-Hitchcock Medical Center in New Hampshire wanted to define a proactive health system that is available wherever and whenever patients need it.

- Doctor, nurses, and healthcare workers lacked real-time insights into patients' well-being, and lacked the tools to act on them more effectively.

- Care taker teams needed a better way to coordinate care for individuals and communities.

SOLUTION

- Dartmouth Hitchcock created ImagineCare, an ever-present healthcare system in the cloud, which allows nurses and health coaches to track and respond to an individual's health status in real time.

- Data from sensors and devices such as blood-pressure cuffs, pulse oximeter devices, and activity trackers like Microsoft Band are transmitted via smartphone to the Azure cloud

- Date is pulled into a Cortana Analytics Suite dashboard at a "contact center" staffed by registered nurses who proactively reach out if alerted.

OUTCOME

- The system built on Cortana Analytics Suite, Dynamics CRM, and the Azure cloud platform results in a dynamic and contextual care plan, which is more customized and accurate as it uses Azure machine learning and predictive analytic capabilities.

- ImagineCare also lowers cost, because the healthcare provider can proactively reach out and prevent emergency room visits and unnecessary hospital admissions.

20

Microsoft

ROADMAP FOR CHANGE

OPTIMIZING OPERATIONS
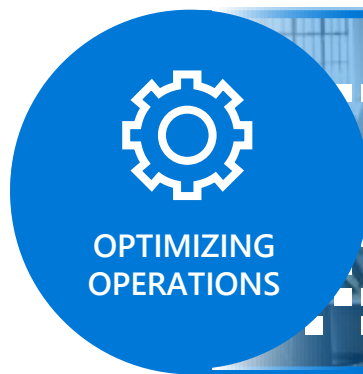
Digital technology now allows businesses to move at incredible speed and accelerate the responsiveness to uncover issues and inefficiencies, predict what will happen, and then adjust as needed.

Your roadmap should focus on three key areas:

- **Modernize your application portfolio,** processes, and skills.
- **Migrate to the cloud by prioritizing** the highest opportunities to fund transformation.
- **Focus new automation** on best opportunities to eliminate manual work.

ROADMAP FOR OPTIMIZING OPERATIONS

	BUSINESS BENEFITS

PHASE 1: ESTABLISH OMNI-CHANNEL COMMUNICATION WITH CUSTOMERS, SERVICE PROVIDERS, AND EQUIPMENT MANUFACTURERS

- Enable mobility and access rights, with media content and communication solution.
- Embed IOT connectivity in target equipment.
- Promote culture of remote interaction and decentralized control.

- Reduce T&E
- Lower training and certification costs

PHASE 2: INTEGRATE TELEMETRY AND TELECOMMUNICATION

- Identify applicable analytics capabilities and tools.
- Implement machine learning and IOT integration.
- Integrate legacy and modern automation, telemetry, and machine learning in unified reporting and dashboard services.

- Decrease unplanned downtime
- Spend less on data modelling
- Shrink IT hosting and storage infrastructure costs

PHASE 3: OPTIMIZE AND ENHANCE ANALYTICS AND MOBILITY CAPABILITIES

- Improve collaboration by continuously imparting mobility and advanced analytics capabilities.
- Decentralize controls.

- Lower cost of maintenance
- Eliminate expensive third-party contracts
- Impart technical ability to workforce

The Data Pros

> **More than ever we are at a point in history where technology is not just adding capability, but it is changing business models dramatically.**
>
> **We are transforming products and services at an unprecedented pace of innovation and strive to help our customers realize the benefits of digital transformation.**
>
> - Jean-Philippe Courtois
> Global Sales, Marketing & Operations, Microsoft
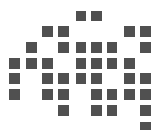
TRANSFORMING PRODUCTS

The opportunity to embed software and technology directly into products and services is evolving how organizations deliver value, enabling new business models and disrupting established markets.

Consider this: if every company was effectively a software or digital company, how would the nature of their products and their overall business model shift? Would gross margins shift from "things" to types of services delivered because of digital technology?

95%

of the top 100 largest enterprise software companies will have integrated cognitive technologies into their products by 2020[1]

Microsoft recently partnered with Keystone to understand how companies across a range of industries are using data and digital transformation to grow and evolve their business—the leaders generate an average of $100 million more in additional operating income each year. [2]

Rethinking how to transform products

Use data to enter new markets: Investigate how the data you are collecting can become the key asset for a new business opportunity. Inform your engineering and services processes with data insights to open new opportunities.

Revise business models to prioritize agility and emerging trends: Find new business models by augmenting physical with digital offerings. Build digital service wrappers around traditional products.

Make customers your business partners: Understand where your business interests intersect with your customers in a digital-first world. Find opportunities that increase your access to new markets while decreasing technology and security risk.

Connect products to amplify and redefine their value: Find new value connections in two offerings enabled with greater insights, machine learning, and analytics.

1 Deloitte. Cognitive technologies enhance enterprise software. Deloitte. 2016.
2 Keystone Strategy Interviews, Oct 2015 – Mar 2016

Microsoft

USING DATA TO ENTER NEW MARKETS

The first Microsoft personal digital assistant was born out of the idea to string together investments we made in search during half a decade, and use Bing backend services to create new experiences.

Over several years, Microsoft Bing engineers have been working on foundational technologies, like natural language processing and the linking of real-world objects to web data, without a specific end-product in mind. These services were eventually brought together in Cortana, a personal digital assistant launched in 2014.

In addition to these foundational services, contextual and predictive technologies make Cortana smart enough to get exactly what users want without having to ask over and over again.

By continuously learning user habits and interests and using Bing services, Cortana can not only perform search and help organize daily activities but is also modeled after human personal assistants and can engage in chit-chat, and even crack jokes. Cortana can offer up flight information and a boarding pass while in transit to the airport, and present that information without being prompted.

In some cases Cortana can even relay the information to another application.

Cortana is not the only popular Microsoft service benefitting from continuous deep dynamic learning.

Services such as Skype Translator, the new image recognition in OneDrive, which automatically knows how to tag pictures, as well as Clutter all use machine learning to become more intelligent and useful.

BUILDING THE NEXT GENERATION DIGITAL ASSISTANT

Search engine

1. Built up 10 years of Bing search assets and technical capabilities.

Natural language recognition

2. Built foundational technologies like natural language processing and the linking of real-world objects to web data.

Predictive analytics

Machine Learning

3. Created Cortana, an advanced personal digital assistant, with the ability to complete tasks in context without being prompted, and personalize user interaction, using machine learning, contextual, and predictive technologies.

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TRANSFORMING PRODUCTS AT MICROSOFT

PRIORITIZING AGILITY TO FIGHT CYBERCRIME

An estimated 556 million fall victim to cybercrime each year, and the estimated market value destroyed from the cybercrime industry is $3 trillion per year cumulatively.

The best way to fight cyberattacks is through a combination of the right people, coordinated across known processes. Add technology, which provides defense-in-depth practices to protect the environment, and to rapidly detect and respond to threats.

Microsoft IT and our cybersecurity teams across the company learned that we needed to test internal processes, become more agile and find an effective model for collaboration.

The critical realization for Microsoft IT and business stakeholders was to connect the intelligence of more than 3,500 information security–focused professionals in a federated model that brought them all together.

As a result, Microsoft opened the Cyber Defense Operations Center. The Center is a 24/7 state-of-the-art facility that brings together security response experts from across the company to help protect, detect, and respond to cyber threats in real time.

The center employs specially trained and qualified personnel, who investigate trillions of data points using highly customized and automated software, machine learning, behavioral analysis, and deep forensics. The data is aggregated to create an intelligent security graph. This security signal is enriched with contextual metadata and cloud-powered machine learning.

This threat intelligence insight helps our teams connect the dots, when anomalous behavior indicates a potential attack or compromise activity, and triggers a rapid counter response with strong containment and coordinated remediation.

CYBERSECURITY AS A SERVICE

15 billion
Security monitoring events collected daily

Azure Machine Learning

1. Investigating trillions of data points from billions of sources; 3,500 security-focused professionals working 24/7.

2. Aggregating data into Intelligent Security Graph, enriched with contextual metadata and cloud-powered machine learning.

3. Analyzing the complex relationship between identities, devices, and behaviors to connect the dots, when "anomalous" behavior indicates attack.

4. In the event of attacks, insights are operationalized and put to use to trigger a rapid response.

Microsoft

REVISE BUSINESS MODELS TO PRIORITIZE AGILITY

TRANSFORMING PRODUCTS

TEMENOS
The Banking Software Company

" It's exciting to see how we can integrate core banking in the cloud, and now somebody in the field with a tablet can open a loan, take payments, and do banking in the middle of nowhere. "

- Murray Gardiner,
Temenos MicroBanking Suite

10M

10 million underserved people can now access banking services thanks to the Temenos cloud solution built on Azure.

BRINGING BANKING TO ANYWHERE IN THE WORLD

| BUSINESS NEED	SOLUTION	OUTCOME
• Thousands of firms around the world use Temenos' banking software, including 38 of the top 50 banks to process transactions. • Temenos wanted to create a banking solution for the 2 billion people in the world who are "unbanked."	• Temenos developed a cloud version of its core banking application T24 that uses Azure Cloud Services. • Now banks using Temenos T24 application in the cloud can deploy the application in only a few months, and enable banking through mobile devices anywhere.	• With this cloud-based application, Temenos clients are now able to reach even the remotest customers in the world and open up new markets for their services. • With Azure Cloud Services, Temenos is now on the cusp of enabling the inclusion of 2 billion more people in formal financial arrangements.

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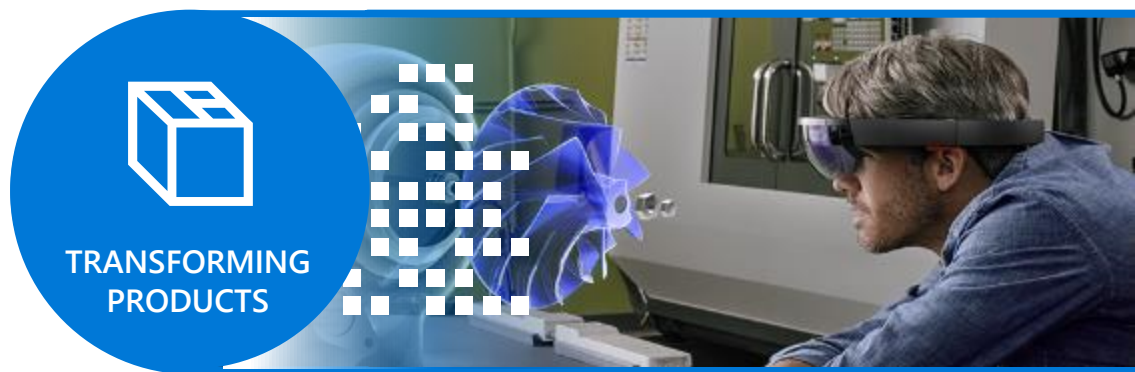
ROADMAP
FOR CHANGE

TRANSFORMING PRODUCTS

Every company is becoming a data company. We need to create connected services and generate insights to see what can be monetized to unlock new business models. The roadmap to support these efforts should focus on:

- **Connecting people** to enable seamless idea sharing.
- **Gaining insights from product se**ntiment and market trends to drive roadmap decisions.
- **Using data from in-market products**, social networks, and analytics to uncover new opportunities.

ROADMAP FOR TRANSFORMING PRODUCTS	BUSINESS BENEFITS
PHASE 1: CONNECT PEOPLE, TEAMS, AND PRODUCTS • Enable seamless idea sharing and collaborative development between individuals/teams irrespective of location and time zone. • Enhance productivity across functional teams, geographical boundaries, and supplier organizations. • Connect devices to IT systems as the first step (API-enabled). • Embed IoT connectivity in target equipment. • Promote culture of remote interaction and decentralized control.	• Reduce product development cost • Boost knowledge sharing • Increase employee productivity
PHASE 2: USE OF ADDITIVE MANUFACTURING, ANALYTICS • Use 3D printing to accelerate innovation and optimized use of additive manufacturing. • Gain insights from product sentiment and market trends to drive roadmap decisions, product use, and performance telemetry for design decisions.	• Enhance market insight into ideation • Accelerate innovation • Increase revenue from innovative "first to market" services
PHASE 3: IMPLEMENT MOBILE, AGILE ENGINEERING PRODUCTIVITY • Use data from in-market products, social networks, and analytics to uncover new opportunities and roadmap commitments. • Enable a leaner product development organization. • Address customers' needs and wants into current and future designs.	• Drive higher return on innovation investment • Lower cost of prototyping, physical modelling, and testing

Microsoft

> _In this massively networked world you have to pick your technology partners carefully—making sure they not only have the capabilities you need, but that their approach empowers your agility, efficiencies, and differentiation._
>
> _Microsoft delivers an amazing breadth of solutions, but more importantly, we're working in a way that prioritizes flexibility, integration, and trust._
>
> -Rocky Blanton
> CVP, Enterprise & Partner Group, Microsoft

WHY MICROSOFT

The Microsoft mission is to empower every person and every organization on the planet to achieve more—building technology so that others can innovate, build their own technology, and create solutions that make things happen. This platform approach is the cornerstone of the strategy Microsoft has always employed to ensure that what we build can get amplified, and more importantly, be delivered in ways that help our customers succeed through the support of our rich partner ecosystem.

Partnering with Microsoft on the road to digital transformation means that our customers can count on us to follow an approach that empowers agility, efficiencies, and differentiation.

Flexible: With our customers' "flexibility" as our priority, we are focused on building technology solutions that become essential yet invisible to help our customers get more done.

It is our responsibility to ensure solutions meet the skill level of employees, developers, and IT professionals, so everyone can move forward. Microsoft is also enabling customers to bridge existing investments to the cloud, by enabling true hybrid scenarios and by building technology that connects to heterogeneous environments and works on any device.

Integrated: To deliver better value, the Microsoft approach is built for and open to extensibility. Our powerful extensibility model is attractive to millions of developers and partners who build on our cloud platform and integrate our differentiated capabilities such as identity management, rich data management, machine learning, and advanced analytics.

Underpinning all this is our relentless drive to make all the solutions we deliver work together so our customers are not burdened by integration.

Trustworthy: Microsoft is committed to investing in security, privacy and control, compliance, and transparency, and especially those features that matter most to our customers such as compliance certifications, best-in-class encryption, choice in where data resides, and transparency into how data is handled and protected.

Unlike other cloud providers, Microsoft differentiates itself by going above and beyond, and being always focused on exceeding our customers' expectations.

- **Security:** We will implement strong security measures to help safeguard our customers' data from hackers and unauthorized access with state-of-the-art technology, process, and certifications.
- **Privacy and control:** We will provide you with control over your data, including giving you the ability to take it with you when you terminate an agreement and have it deleted upon request.
- **Compliance:** We will help you comply with applicable laws, regulations, and key international standards, and we will respect each country's digital sovereignty.
- **Transparency:** We will explain what we do with your data, and how it is secured and managed in clear, plain language.

Learn more: http://www.the-data-pros.net/microsoft-solutions/

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