Microsoft Finance Digital Transformation

KPMG CFO Roundtable
October 26th & 27th | Dubai & Abu Dhabi
Transformation challenges facing Finance
Legacy systems and processes influence common finance challenges

Multiple sources of truth, due to inconsistencies of financial metrics across divisions

Inefficient decision-making process, due to poor visibility of financial data over multiple system

Unaffordable time to value, due to high effort and manual work to retrieve and report data

Ineffective forward-looking analysis, due to lack in data quality and advanced analytics models
We have successfully proved it through our own transformation - decoupling cost from growth & doing more with the same in Finance.

Transformation has enabled Microsoft to **decouple finance headcount growth from business growth**; over the past 10 years headcount has increased 15% while revenue has grown 145%.
Technology shortens time to action

- **Data**
  - Azure
  - SQL

- **Business intelligence**
  - Excel
    - Static reports
      - What happened?
      - Manual processes
      - Automation
  - Power BI
    - Interactive dashboards
      - Why did it happen?
      - Manual processes
      - Automation
  - Process Automation
    - Self Service
      - What happened & why?
      - Manual processes
      - Automation
  - Machine Learning
    - Predictions
      - What will happen?
      - Manual processes
      - Automation
  - Advanced analytics
    - Machine Learning
      - Recommendations
        - What should I do?
        - Manual processes
        - Automation

- **Action**

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Finance leaders are repositioning to be a catalyst for business transformation and value creation

Both within the finance function and as strategic influencer across the broader enterprise

Traditional

Finance as Caretaker

Evolved

Finance as Catalyst

<table>
<thead>
<tr>
<th>Finance Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic ownership</td>
</tr>
<tr>
<td>Advanced business knowledge</td>
</tr>
<tr>
<td>Organize resources for highest ROI</td>
</tr>
<tr>
<td>Trusted advisor to the business</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Finance Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational ownership</td>
</tr>
<tr>
<td>Transactional expertise</td>
</tr>
<tr>
<td>Task management</td>
</tr>
<tr>
<td>Basic business understanding</td>
</tr>
</tbody>
</table>
4 pillars of our Digital Transformation

**Data**
- Advanced Analytics
- Azure
- SQL

**Business Process Automation**
- Decision automation
- ML

**Strategy & Forecasting**
- Predictions
- ML

**Financial Analysis & Reporting**
- Interactive dashboards
- Power BI
- Excel

**Value**
- Manual Processes

**Risk Management**
- Static reports
- Why did it happen?
Digital transformation: financial analysis & reporting
Our data platform transformation
From manual, static, inconsistent to automated, dynamic, and centralized

Planned to build Data solution based on Analytical Framework

Combined forces to have **one set of procedures, rules and definitions**

Consolidated to one **data source** and structured output data into a standard architecture

Used powerful **apps** and plugins to give data structure

Output data to quickly and effectively analyze

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100+ Data Sources

One Microsoft

Sales Finance

Engineering Finance

Corp Marketing

Central Finance Systems

Cloud Data

IT

Finance Data Warehouse

Custom Mapping

KPI Lake

Analytics & Reports
## MSX Insights

**Real time data**  
**PowerPoint-free**  
**Dynamic business reviews**

<table>
<thead>
<tr>
<th>Area</th>
<th>QPC Goal</th>
<th>QPC To Budget</th>
<th>Qualified Pipeline</th>
<th>Additional Pipeline Needed To Budget</th>
<th>CPC To Budget</th>
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<tbody>
<tr>
<td>APAC</td>
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<td>143%</td>
<td>$50,924,177</td>
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<td>Australia</td>
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<td>165%</td>
<td>$29,254,826</td>
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<td>CEE</td>
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<td>140%</td>
<td>$52,676,711</td>
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<td>121%</td>
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<td>GCR</td>
<td>149%</td>
<td>168%</td>
<td>$75,787,441</td>
<td>61%</td>
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<td>Germany</td>
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<td>164%</td>
<td>$69,255,600</td>
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<td>India</td>
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<td>166%</td>
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<td>Japan</td>
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<td>153%</td>
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<td>60%</td>
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<td>LATAM</td>
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<td>161%</td>
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<td>MEA</td>
<td>164%</td>
<td>187%</td>
<td>$80,127,362</td>
<td>64%</td>
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<td>UK</td>
<td>116%</td>
<td>136%</td>
<td>$89,202,164</td>
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<tr>
<td>US</td>
<td>133%</td>
<td>155%</td>
<td>$325,975,298</td>
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<tr>
<td>WE</td>
<td>120%</td>
<td>125%</td>
<td>$114,146,347</td>
<td>51%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>134%</strong></td>
<td><strong>150%</strong></td>
<td><strong>$1,127,522,991</strong></td>
<td><strong>57%</strong></td>
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</table>

### Additional Information

- **4RQ Qualified Pipeline Coverage**
- **4RQ Committed Pipeline Coverage**
- **CPC Change**
Modern Business Management Reporting

**CHALLENGE**

With pervasive legacy systems and scattered data sources, analysts spent most of their time gathering data, scrubbing numbers and building reporting views in order to prepare for business reviews. **Focusing on these activities resulted in very little time left to provide business insights.**

**SOLUTION**

Consolidation and simplification of multiple, disparate reports, tools, and data into a unified platform. Finance created a Secure KPI Lake (SQL on Azure IaaS) with standardized data and KPIs from 100+ sources, accessible by Power BI, with rights managed by Azure Active Directory and a role-based portal to share standard reports.

**RESULTS**

- Unified data and reporting solution for 30k+ monthly active users from sales, finance, and operations; combo of standard reports and self service leveraging over 2K+ KPI
- Replaces over 1,000 HQ and field reports leading to a 20% reduction in time spent compiling and validating data = 150K hours per quarter

**TECHNOLOGY**

Azure IaaS; Azure SQL; Power BI; SQL 2016; Excel; OneNote; PowerPoint

**TIME TAKEN**

14 weeks to build and implement
Digital transformation: strategy & forecasting
Past revenue forecasting process

Local & product forecasts

100+ analysts build Excel forecast models 2 weeks prior to quarter end

Management reviews

Over 1-2 weeks, product and sales leads use their expertise to judge up/down the forecasts

Global & executive reviews

CFO and HQ finance teams push product and sales teams to land balanced, closest-to-the-pin forecasts
## Opportunity for ML to transform forecasting

<table>
<thead>
<tr>
<th>Goals</th>
<th>Challenge's pre-ML</th>
<th>ML opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accuracy</strong></td>
<td>Conscious &amp; unconscious bias</td>
<td>No human bias</td>
</tr>
<tr>
<td></td>
<td>Layers of management judgment</td>
<td>No management judgment</td>
</tr>
<tr>
<td></td>
<td>Undesirable error rate</td>
<td>Highly accurate statistical model</td>
</tr>
<tr>
<td><strong>Time-to-market</strong></td>
<td>3 weeks to produce a forecast</td>
<td>30 minutes to produce a forecast</td>
</tr>
<tr>
<td></td>
<td>Unable to react to market changes</td>
<td>CFO can react to market changes</td>
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<tr>
<td><strong>Efficiency</strong></td>
<td>Hundreds of analysts forecasting</td>
<td>Analysts can work on higher ROI projects</td>
</tr>
<tr>
<td></td>
<td>Data &amp; tool issues</td>
<td>No data &amp; tool issues</td>
</tr>
</tbody>
</table>
### ML Forecast Accuracy Better than Traditional Bottoms-up Process

Driving ROI from ML

<table>
<thead>
<tr>
<th>Machine Learning</th>
<th>CFO Forecast (VTF %)</th>
<th>ML Outlook VT ML %</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY16 Q2</td>
<td>3.5%</td>
<td>-0.5%</td>
</tr>
<tr>
<td>FY16 Q3</td>
<td>-3.3%</td>
<td>3.3%</td>
</tr>
<tr>
<td>FY16 Q4</td>
<td>1.2%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Average</td>
<td>2.7%</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

- **PEOPLE**
  - 100 PEOPLE
  - 1 Month
  - 2 PEOPLE
  - 2 Days

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ML revenue forecasting process

Product Forecast

- Product forecast: High level of accuracy drives overall forecasting, resourcing, and guidance discussions

Sales forecast: Sales leadership and local finance gain insights into risks & opportunities. Standardized model across all sales finance

Global Sales Forecast

Improve accuracy through continuous refinement
- Finance Analysts
- Data Scientists
- Azure ML

Continuous push-pull between ML and human forecasts that improves finance's forecasting abilities
Machine Learning roles in finance

**Finance Business Owners**
- Define business problem(s) and desired outcome(s)
- Provide requirements, model evaluations, and signoffs
- Manage change including how data will be used in decision making processes
- Identify and utilize insights to generate value and actions

**Data Analysts**
- Provide a solid understanding of Microsoft data sets for data acquisition and generating business rules
- Integrate machine learning output with traditional business intelligence and action frameworks
- Build Power BI reports and visuals

**Data Scientists**
- Retrieve, cleanse and map data
- Design, test and evaluate hypotheses
- Customize and tune models to discover and learn from the data
- Apply existing algorithms and models to new business problems
- Innovate to discover new algorithms &/or statistical models

**Architects & Engineers**
- Deliver available, scalable, secure, and fault tolerant infrastructure
- Create and deploy solutions, platforms and end user experiences
- Stitch APIs together, automate models and integrate data
Machine Learning Revenue Forecasting

**SOLUTION**
Augmented current financial forecast with Azure Machine Learning forecasting solution stored in Azure Data Factory and Azure SQL Database, and accessed with Power BI.

**RESULTS**
- 1.6% mean absolute % error over 16 quarters
- 98.4% accuracy with ML vs. 97.1% using traditional methods
- Real-time, dynamic predictions

**TECHNOLOGY**
Azure Data; Azure Machine Learning; Azure SQL; Azure AI; Azure Data Factory; Power BI; SQL

**TIME TAKEN**
8–10 weeks to build and implement

**CHALLENGE**
Finance leaders want to ensure that they have the most accurate forecasting process, while controlling investment of time and resources in the process.
## Lessons learned

<table>
<thead>
<tr>
<th>Topic</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have conviction on ROI and other benefits</td>
<td></td>
</tr>
<tr>
<td>Stakeholder buy-in is essential</td>
<td></td>
</tr>
<tr>
<td>Think about where centralization makes sense</td>
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<tr>
<td>Try, fail, learn, improve</td>
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</tr>
<tr>
<td>Understand the machine learning “black box”</td>
<td></td>
</tr>
<tr>
<td>Continuous improvement</td>
<td></td>
</tr>
<tr>
<td>Finance + data scientists</td>
<td></td>
</tr>
<tr>
<td>Feature selection responsibility</td>
<td></td>
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</tbody>
</table>
Digital transformation: Risk Management
Digitizing deal reviews at Microsoft

Analyze and flag risks

Review flagged deals

Escalate review

Ingest and integrate
Train risk model
Score deals
Flag outliers for review

Initiate review
SME contribution
Finance review
Compliance Conclusions

Legal compliance → or ×
**Defining a High-risk deal**

**Core concept:** A single risk factor may not itself be significant to identify high-risk transactions. Yet, a deal **having ‘signals’ from multiple risk factors** can produce unique insights **compared to evaluating each factor on its own.**

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**Microsoft high risk deal risk factors**

**Microsoft deal risk factor weighing**

- **100%** High Risk Deal
- **30%** Government customer
- **25%** Deviation from trend
- **20%** Geography
- **15%** Large discount
- **10%** Partner

**Sample risk potentials**

- Geography
- Government customer
- Discounts
- Trend of deal size
- Partner

**Concession risk flags**

- Credit term extensions
- Business investment funds

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**Microsoft concession risk flags**

- Credit term extensions
- Business investment funds
High Risk Deal Analytics as a solution (HRDA)

1. **High Risk Deal Dashboard**
   Analytics that identify which transactions require additional review

2. **HRD Action Framework**
   Recommended next steps based on risk flag and risk attribute

3. **Review Tool**
   Transactions above threshold feed into this tool which tracks the review status of each transaction and documentation

4. **Review Dashboard**
   Summary view of riskiest transactions & review status
**Compliance Predictive Analytics**

**CHALLENGE**
Certain transactions are at an elevated risk for corrupt activity, fraud, or compliance issues. In order to proactively manage the risks, the compliance department is constantly striving to improve the process to reduce costs and error rates.

**SOLUTION**
Built a risk analytics platform on Azure to provide comprehensive coverage of all sales transactions, with predictive machine learning based capabilities, driving a systematic review process, and focus on high risk transactions.

**RESULTS**
- Automated risk heatmap
- Action driven high risk review process
- Coverage of all sales transactions
- 52% reduction in transaction review time
- Expedited risk investigations

**TECHNOLOGY**
Azure Analysis Services; Azure Blob Storage/Active Directory; Azure Web Apps (SaaS); Power BI; SQL Azure (PaaS);

**TIME TAKEN**
3–4 months to build and implement
Digital transformation: Business Process Automation
Microsoft Power Platform

A low-code AI capability that spans the Power Platform

- **Analyze**
  - Power BI
    - Business analytics
- **Act**
  - Power Apps
    - Application development
- **Automate**
  - Power Automate
    - Workflow automation
- **Chatbots**
  - Power Virtual Agent
    - AI Conversations
Regional Investment Opex Process – [link](#)

<table>
<thead>
<tr>
<th>Status</th>
<th>Request ID</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPROVED</td>
<td>1084</td>
<td>MAR</td>
</tr>
<tr>
<td>APPROVED</td>
<td>1083</td>
<td>ECIF</td>
</tr>
<tr>
<td>PENDING</td>
<td>1082</td>
<td>PEOF</td>
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<tr>
<td>APPROVED</td>
<td>1081</td>
<td>ECIF</td>
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<tr>
<td>APPROVED</td>
<td>1080</td>
<td>MAR</td>
</tr>
<tr>
<td>APPROVED</td>
<td>1079</td>
<td>MAR</td>
</tr>
<tr>
<td>NOT APPROVED</td>
<td>1078</td>
<td>PEOF</td>
</tr>
<tr>
<td>NOT APPROVED</td>
<td>1077</td>
<td>MAR</td>
</tr>
<tr>
<td>PARTIALLY APPROVED</td>
<td>1076</td>
<td>MAR</td>
</tr>
</tbody>
</table>

*Image: MEA - INVESTMENTS REQUESTS interface*
Do you have a teammate that provided exceptional value and impact to your team and Microsoft as a whole? Or do you want to celebrate someone that reflects Microsoft’s values?

Please take this opportunity to recognize individuals or groups who demonstrated outstanding impact.

For a new nomination click here:

Create New Nomination

View your previously submitted nominations

Impact Period
Impact done in:
FY23_Q1
• Open Date: 26/Sep/2022
• Close Date: 17/Oct/2022
Duplicate Payment Anomaly Detection

Modernize payment inspection process using cognitive services to detect duplicate payments to suppliers.

Challenges
• Payment anomalies identified as a key control gap by both the management and auditors
• Duplicates occurring in payments causing financial losses
• Manual, tedious process of verifying suspicious payments
• Using only a set of pre-defined business rules

Business Benefit

600 hours of manual work saved

>$200K of retrieved duplicate payments in less than a month
Bank Reconciliation Process Automation

Leveraging AI solutions from Microsoft to automate bank reconciliations

Challenges

- Risk of human errors given the large number of transactions and manual reconciliation
- Bank reconciliations are a tedious and labor-intensive process in most global organizations
- Volume of data sources can be overwhelming

Business Benefit

- **4,800 hours/ year gained back**
- Increased **financial control & compliance** with audit requirements
- Patterns identified from past data sources with **full transparency** on trends, volumes and pick periods
- **+85% automation level** of bank reconciliations.
<table>
<thead>
<tr>
<th>Lessons learned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grow tech insights across all career stages</td>
</tr>
<tr>
<td>Reimagine the ideal process before automating</td>
</tr>
<tr>
<td>Automation and compliance go hand-in-hand</td>
</tr>
<tr>
<td>Create and own your automation roadmap</td>
</tr>
<tr>
<td>Try, fail, learn, improve</td>
</tr>
</tbody>
</table>
Thank you
Appendix
Create a virtuous cycle of learning & innovation

Foster Growth Mindset (learning paths) → Innovate (new projects) → Share best practices (Modern Finance portal) → Create sharable content (solutions)
1- Finance Learning Paths

We foster **tech intensity** in Finance by empowering our people to build capabilities in using Microsoft technology that drive individual and team innovation.

Microsoft Finance Learning Paths
(ready.azurewebsites.net)
Our Vision: to foster, accelerate, and support innovation throughout Microsoft Finance by empowering citizen developers to access a common framework, build on the work of others, share best practices, partner with relevant groups, and celebrate success.

You are a Finance employee who wants to engage with Modern Finance through training, developing a better understanding of what it takes to get a project off the ground, or you have a Modern Finance solution to share on this site.
SOLUTION
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RESULTS
• 1.6% mean absolute % error over 16 quarters
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TIME TAKEN
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CHALLENGE
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Role of CFO to a business advisor

TRADITIONAL Roles
- Finance Managers
- Accounts Payable Clerk
- FP&A Manager
- Accounting Lead

EMERGING Roles
- Finance Value Architect
- Data Scientist
- RPA Manager
- Data Architect
- Behavioral Scientist
- AI Scenario Planner