ENDLESS POSSIBILITIES WITH DATA FOR MANUFACTURING

Navigate from now to your next

Infosys®
Navigate your next

An Infosys Knowledge Institute publication

This page is intentionally left blank

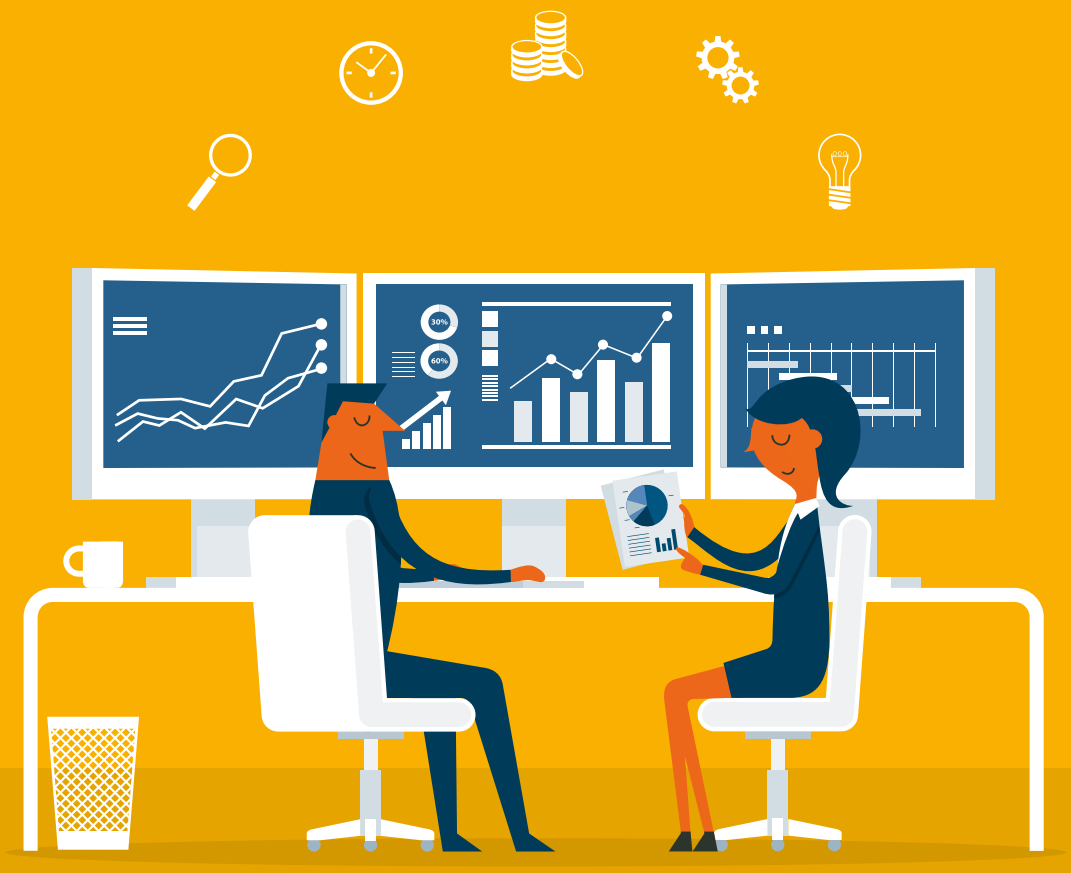


TABLE OF CONTENTS

INTRODUCTION TO THE STUDY

Manufacturing enterprises are under constant pressure to reinvent themselves to keep pace with changing market requirements. Trends such as product customization and personalization, digital supply chain and intelligent shop floors are becoming more common. To seamlessly adopt these trends, manufacturers have to overcome several challenges including skills shortage, inadequate automation, and demand for innovation.

Manufacturers ahead in the game are those who have realized the importance of technology in ensuring survival and success. Data analytics thus plays an important role in ensuring better planning and forecasts, increased productivity and reduced costs, and faster delivery of products.

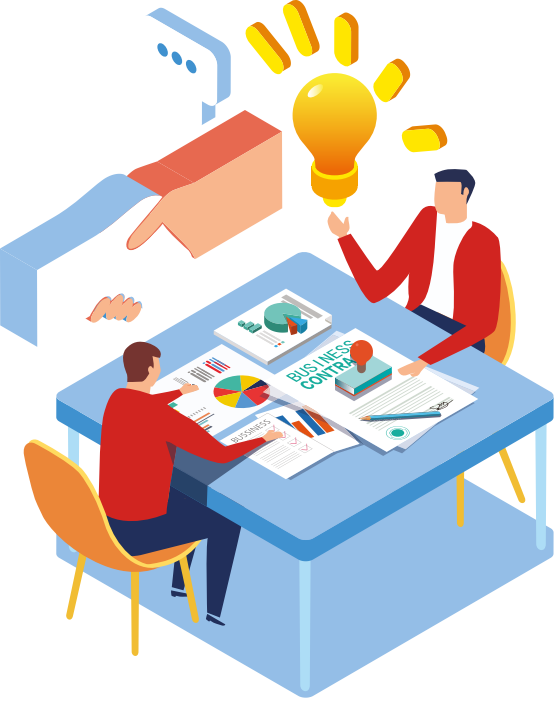
A respondent from a US-based aerospace manufacturing firm said, "We would like to see data analytics fix cost overruns and production delays. Also, identifying revenue growth opportunities are possibilities we believe in".

Clearly, the right approach to data analytics will deliver huge returns to an enterprise in the form of increased revenues, improved customer experience and hence increased customer satisfaction.

At Infosys, we recognized the significance of data analytics and launched a study to understand the data analytics market landscape.

We surveyed 98 senior executives from manufacturing enterprises with annual revenues exceeding US$ 1 billion, in the United States, Europe, Australia and New Zealand. The respondents were from business and technology roles and were decision makers, program managers, and external consultants.

The study tries to picture a future for data analytics, one where it would be most relevant if there were no boundaries. The study covers a gamut of issues, both strategic and implementation related, that enterprises deal with during their data analytics journey. It also offers a view of other important facets such as challenges and opportunities, preferred technologies and mode of execution, the nature of outcomes, and the role of new technologies in the analytics world.



IN A WORLD OF ENDLESS POSSIBILITIES WITH DATA

The survey asked respondents to state where they would find data analytics most relevant if they were to choose from its endless possibilities. They named four areas – experience enhancement, risk mitigation, business model creation, and revenue and profitability maximization. For 39% of manufacturing enterprises, experience enhancement is the key objective of analytics initiatives. Respondents across the USA (41%) and Europe (40%) agreed on this priority. Whereas 35% of ANZ respondents felt that risk mitigation is the key objective followed by experience enhancement (29%).

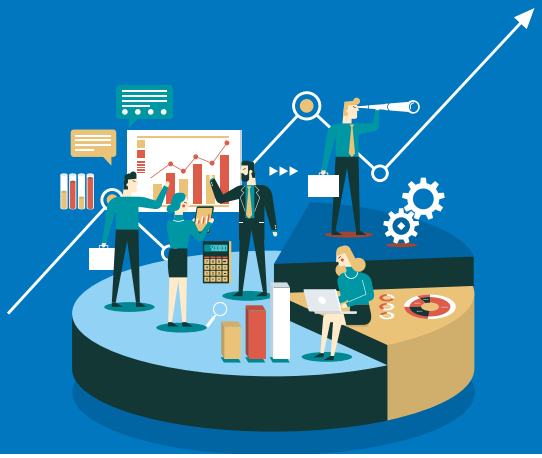
The responses on the next key objectives throw up an interesting study. Overall, 26% of respondents pointed out business model transformation as the next key objective. 34% of European manufacturers and 20% of USA manufacturers agreed. It's interesting to note that 20% of USA manufacturers also voted for revenue and profit maximization indicating the importance of both objectives.

User Groups	Overall Manufacturing	Geographies		
		USA	Europe	ANZ
Base	98	46	35	17
Business Model Transformation	26%	20%	34%	24%
Experience Enhancement	39%	41%	40%	29%
Revenue and Profit Maximization	15%	20%	9%	12%
Risk Mitigation	20%	19%	17%	35%

Table 1: Scenarios where data analytics would be extremely relevant if possibilities with data were endless

It's important to have clarity on the objectives of data analytics initiatives but equally important to have a sound strategy in place. A significant 88% of manufacturers said that an enterprise-wide strategy/roadmap exists to carry out data analytics initiatives.

USA (43%) and ANZ (59%) enterprises prefer to follow the enterprise-wide strategy whereas European (57%) enterprises allow more flexibility to business functions to build their own roadmap.



MEETING AND BEATING DATA CHALLENGES

While manufacturers have a clear intent and way forward on data analytics initiatives, however, we need to understand what challenges they face on this journey and how they are overcoming it.

Manufacturers encounter the most challenges with analytics expertise. 45% said deploying the right analysis technique is a concern with USA (41%) and ANZ (53%) respondents echoing this view. However, 51% of European respondents said that integration of multiple datasets for various sources was a bigger issue.

Closely following the expertise related challenges is the challenge of dealing with the maturity of existing systems/architectures and technology environments according to 41% of respondents.

	Overall Manufacturing	Geographies		
		USA	Europe	ANZ
Base	98	46	35	17
Integrating multiple analytics tools to draw synergies	36%	35%	34%	41%
Deciding on choice of tools/technologies to pick from	32%	30%	34%	29%
Maturity of existing systems/architectures & technology environments	41%	39%	46%	35%
Required resource skills in the analytics realms	39%	35%	46%	35%
Absence of a dedicated analytics team to drive the initiatives to closure	15%	13%	14%	24%
Pace of execution/implementation of the initiative	39%	30%	49%	41%
Lack of high levels of clarity in the execution roadmap	30%	24%	29%	47%
Understanding the right analysis techniques to be deployed	45%	41%	46%	53%
Integration of multiple datasets for various sources	38%	24%	51%	47%
Ensuring data hygiene (correctness of data, relevance)	31%	33%	23%	41%

Table 2: Key challenges in implementing data analytics-led initiatives

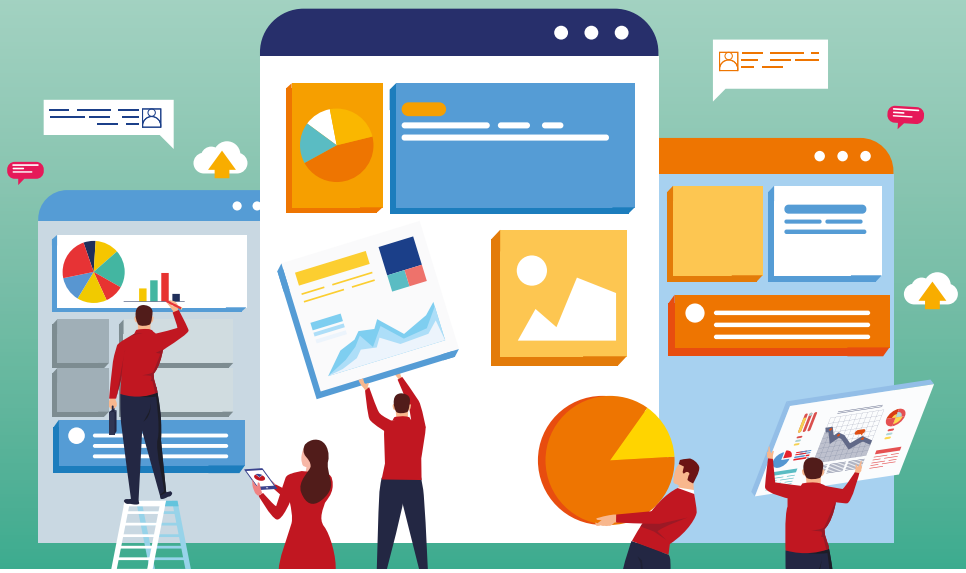
When asked how manufacturers were planning to tackle these challenges, expertise related solutions were top on their list. Overall, the top two aspects that emerged were choosing the right analytics tools/technologies (48%) and deploying the right people with the right skills (47%).

The survey responses reveal that manufacturers believe that the right expertise is a critical success factor and will set them ahead on the analytics path. This is an important takeaway for technology companies working in the data analytics space.

	Overall Manufacturing	Geographies		
		USA	Europe	ANZ
Base	98	46	35	17
Choosing the right analytics tools/ technologies	48%	39%	54%	59%
Deploying the right people with the right skills	47%	48%	49%	41%
Ensuring a clear roadmap/execution strategy is set before	43%	46%	37%	47%
Identifying the right analysis techniques	42%	37%	51%	35%
Centralizing organisation wide data for better fungibility	42%	35%	51%	41%
Investing in latest IT Infra/Cloud technologies	39%	30%	49%	41%
Enabling/Evangelizing digital culture across the organization	33%	30%	34%	35%
Partnering with external service providers, data experts	16%	11%	26%	12%

Table 3: Important aspects to drive in order to overcome execution challenges in analytics initiatives

WHAT ANALYTICS AND WHY

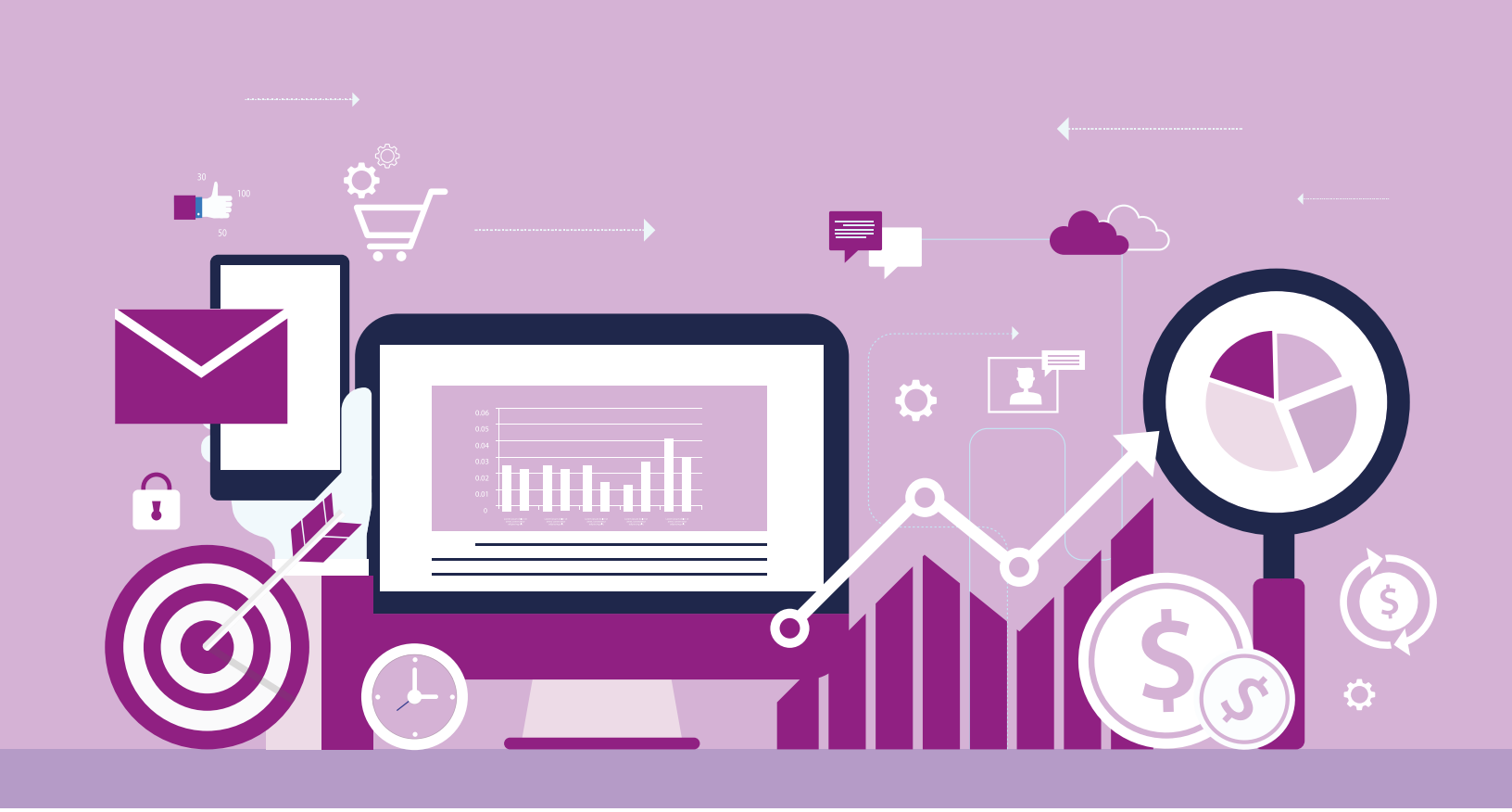


Our survey shows that most manufacturers have run predictive (73%) and descriptive (65%) initiatives. USA (67%) and Europe (83%) respondents are especially more focused on predictive analytics initiatives whereas 76% of ANZ respondents leaned towards descriptive/diagnostic analytics initiatives.

> ***Quoting a US-based manufacturer "Our key objective is to gain greater visibility into data quality, a solution to eliminate silos of incomplete data and risk management initiatives, for ongoing strategic decision support."***

	Overall Manufacturing	Geographies		
		USA	Europe	ANZ
Base	98	46	35	17
Descriptive/Diagnostic analytics	65%	63%	63%	76%
Predictive analytics	73%	67%	83%	71%
Prescriptive analytics	32%	30%	29%	41%

Table 4: Analytics initiatives deployed or currently running in organizations



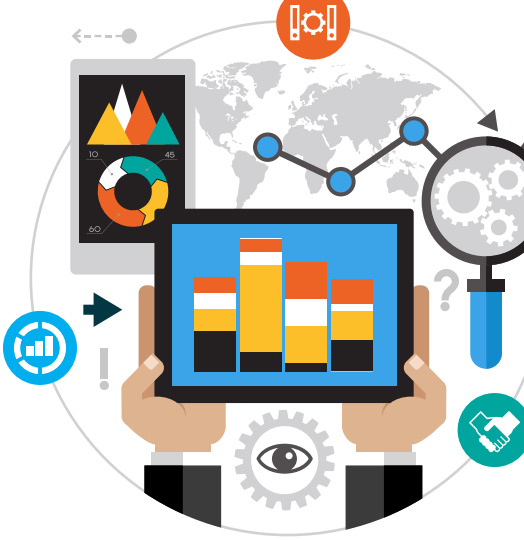
ANALYTICS USAGE BY FUNCTION

Not surprisingly, Finance & Accounting (34%) followed by Operations (17%) are the functions that have witnessed the most analytics initiatives across all surveyed geographies. It was heartening to see that all functions covered in the survey had used analytics initiatives. Manufacturers thus send out an unambiguous message on how important they consider data analytics.

	Overall Manufacturing	Geographies		
		USA	Europe	ANZ
Base	98	46	35	17
Finance & Accounting	34%	28%	40%	35%
Operations (Production, Supply chain, Support)	17%	20%	23%	–
Sales & Presales	15%	13%	14%	24%
Marketing	15%	20%	11%	12%
Research & Development	8%	7%	6%	18%
Sourcing & Procurement	7%	9%	3%	6%
Human resources	4%	3%	3%	5%

Table 5: Analytics savvy functions in an organization

THE IMPACT OF OTHER TECHNOLOGIES



We asked our respondents' views on the role of AI & Automation and convergence of Cloud, Big Data & IoT on analytics initiatives.

63% of manufacturing enterprises said automation could help scale and deploy analytics initiatives. On the other hand, 46% said AI could help drive prescriptive & predictive modeling.

	Overall Manufacturing	Geographies		
		USA	Europe	ANZ
Base	98	46	35	17
Automation				
Ability to scale current analytics initiatives & deploy	63%	59%	66%	71%
Standardization of data & analysis techniques	47%	39%	54%	53%
Drawing higher efficiencies	49%	50%	49%	47%
Artificial Intelligence				
Driving Prescriptive & predictive modeling	46%	30%	63%	53%
Possibility for creating new Business cases/models	42%	39%	34%	65%
Effective risk detection & mitigation	37%	30%	40%	47%

Table 6: Role of AI and Automation in the analytics world

Respondents said that convergence of technologies such as Cloud, IoT, and Big Data will lead to:

59% effective data management

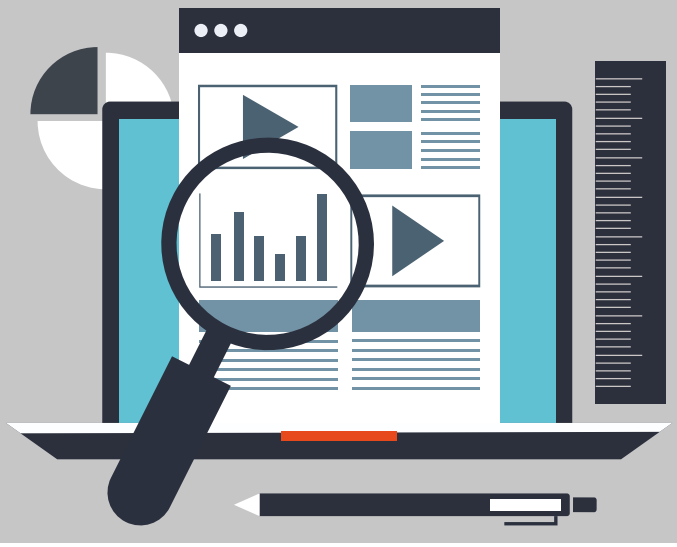
48% cross-organization synergies

46% scalability & repeatability of analytics frameworks

46% Predictive & Prescriptive Analytics

	Overall Manufacturing	Geographies		
		USA	Europe	ANZ
Base	98	46	35	17
Effective data management	59%	54%	63%	65%
Cross organizational synergies	48%	46%	51%	47%
Predictive & prescriptive analytics	46%	46%	54%	29%
Scalability & Repeatability of analytics frameworks	46%	46%	37%	65%
New business models/cases	44%	37%	46%	59%
Real-time impact on decision making	36%	35%	37%	35%

Table 7: Convergence of Cloud, Big data & IoT



CONCLUSION

Globalization has ensured a competitive market, compelling manufacturers to prioritize experience enhancement and keep their customers happy. At the same time, they are aware of the need to transform their business model as well as mitigate risks to stay afloat. To that end, manufacturers have elected to direct investments to predictive and descriptive analytics initiatives although their prescriptive analytics initiatives are not insignificant.

> ***What a global automotive firm had to say about its data analytics initiatives adds weight to our findings – "By our data initiatives, we have been able to ultimately decide on issues such as which brands and models to discontinue, where to procure parts and materials, and how to enable dealers to manage their inventories to improve sales. This has enabled our customers to be part of the decision that have not only changed the way we work but also has added value to our customers."***

However, manufacturers first need to address issues related to the shortage of essential analytics expertise and legacy systems. The willingness of manufacturers to utilize analytics to further their business performance and the accompanying challenges in seamlessly executing their strategy presents a good opportunity for analytics providers.

About Infosys Knowledge Institute

As enterprises navigate the path to being digital, Infosys Knowledge Institute offers thought leadership to guide their transformation. With decades' worth of business and technology experience we help enterprises strategize how they reinvent themselves from the core: their people, processes, and proposition.

NOTES

NOTES

This page is intentionally left blank

For more information, contact datadomore@infosys.com

Infosys®
Navigate your next

www.infosys.com/endless-possibilities-with-data