



**Crunch time – Future of Finance in a Digital World**  
An Indian Perspective

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# Crunch time – Future of Finance in a Digital World: An Indian Perspective

“It was the best of times, it was the worst of times...It was the age of wisdom, it was the age of innocence...We had everything before us, we had nothing before us...” A Tale of Two cities; Sir Charles Dickens.

Imagine a day five years from now. The global CFO of a Fortune 100 company is rushing to her office to handle a crisis situation. The CFO has a Masters in Data Science and is known widely in the industry for her sharp business acumen and decisiveness. This was going to be one more test of prowess.

**10:00 a.m.** – In her self-driving car, she is updated on the financials via an alert on her wearable mobile device. A key operating company is coming dangerously close to breaching its cryptocurrency denominated liquidity limits. She has to act fast to prevent a funding crisis.

**10:25 a.m.** – In her office, she initiates a set of simulations to view the real time positions of global liquidity status to explore immediate inter-country funding transfers on Blockchain. A cognitive intelligence solution pulls up data to create an instant dashboard of global treasury. She directs a voice activated query to analyze scenarios and predict various possible outcomes. The cognitive

tool is capable of mining internal data as well as external big data, as it builds models and options.

**10:45 a.m.** – Meanwhile, the “Finance Factory” Manager running the shared service centre prepares to run a real time virtual close. The centre is run on automated robotized processes supported by human judgement and robust cyber-secure controls.

**11:30 a.m.** - Finance teams collaborate with their global colleagues who possess a mix of business and technology skills. They use their control reports and validate the virtual close and the appropriate predictive and prescriptive analytics scenarios. The CFO collates the results and provides her recommendations of fund management.

**12:00 p.m.** – The crisis is averted and liquidity is restored to the stressed operating company on Blockchain. Once again the CFO has proven herself to be a master in crisis management, networking, and optimal leverage of exponential digital technologies.



**Welcome to the future of Finance in a digital world!**

Much as the situation above may seem futuristic and not aligned to real life, each of these technologies exists today and are being adopted by finance leaders across the world to redefine the way they deliver value to their enterprises. As organizations are experimenting with exponential technologies at the front end of business and customer experience, there is an increasing demand on all support functions, to improve their digital dexterity. Finance is no exception.

In this white paper, we have tried to identify the key trends that are defining the future of Finance in the digital world and the impact of eight underpinning technologies that are likely to enable this transformation.

We have based our research on global Deloitte thought papers and have contextualized for the Indian scenarios based on our interactions and interviews in India. As Digital India is unfolding into our daily lives and the front end of businesses are becoming increasingly digital, finance leaders are getting ready for this shift in their traditional operating models. This white paper delves into their challenges and opportunities and attempts to provide some perspectives for making smarter decisions for that inescapable future. Our research has been around four key themes of digital evolution in Finance, given below:

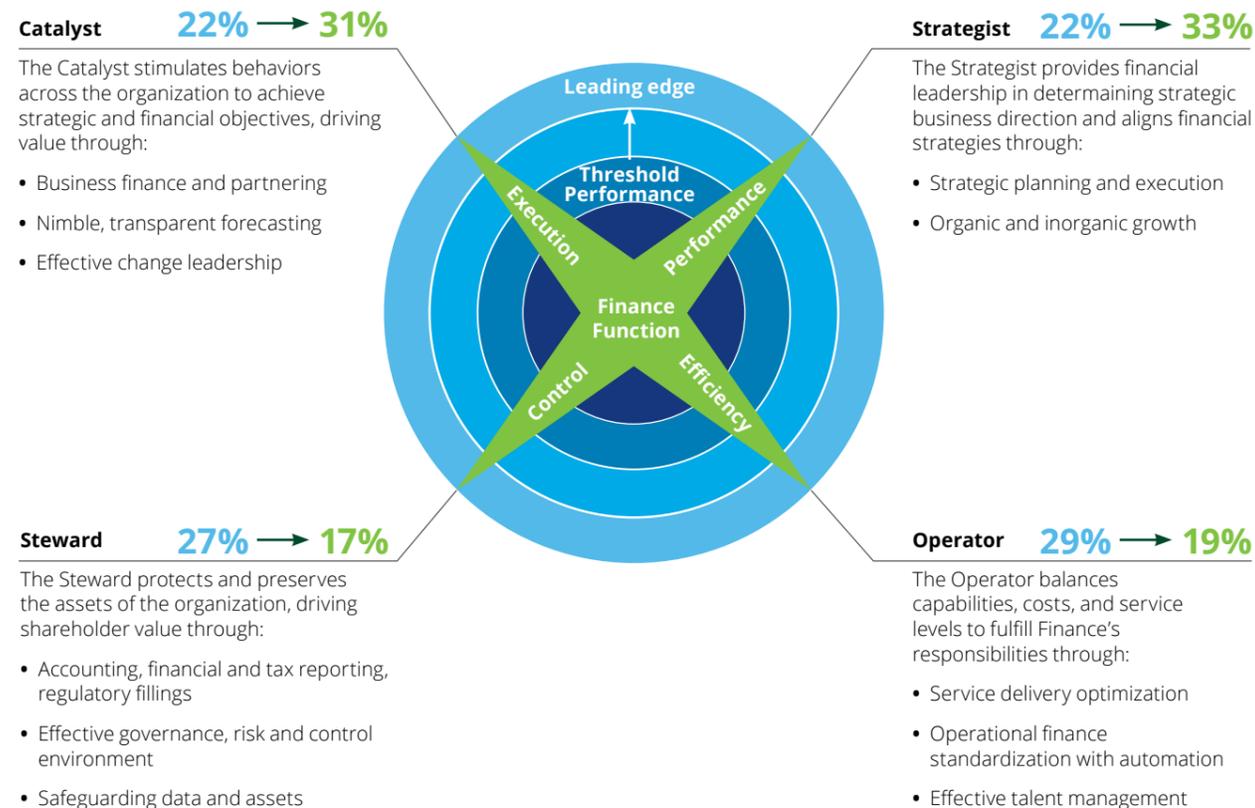
- a. The **dilemma of data** - a key challenge for the 21st century CFO
- b. The evolving **role of a CFO** in a digitally smart India

c. Eight **exponential technologies** that are likely to define the future of digital Finance

d. Developing a **Digital DNA** for Finance – the bridge between **Acuity** and **Acumen**.

Our research is guided by the Deloitte framework of the four faces of the CFO (Fig 1) and how the digital ecosystem is acting as a catalyst and contributor to the reallocation of time between the bottom quadrants (Operator and Steward) to the top quadrants (Catalyst and Strategist). A digitally savvy Finance is expected to find more time for business partnering and decision support and this whitepaper tries to outline how some of the leading finance teams in India are working on making that shift happen.

**Figure 1 : Deloitte's Four Faces of Finance**



\*Deloitte's CFO Program facilitates CFO Transition Labs. The averages shown are sourced from 290 CFOs that participated in the CFO Transition Labs during the period June 2010 to January 2016

**Six predictions for the Future of Finance:**

**Predictive and prescriptive analytics** will be a mainstream expectation from Finance – sourced from structured and unstructured data (Big data).

Information will become **ubiquitous and available in real time** and the role of Finance at most will be to ensure that the right information is made available to the right stakeholders in the right format. Cyber security will form an indispensable part of finance leader's arsenal.

**Technology will be all pervasive** and eight core exponential technologies will form the core of digital finance. Digital will not just be a platform or an ecosystem, but more like the underlying ethos to define the way Finance will function.

The Finance **processes of the future will be run as utilities** – automated and inter connected through a global data exchange.

**Social outcomes of business** will feature prominently in the finance reporting requirements. Models to measure and report will evolve in their maturity and acceptance.

**Finance talent of the future** will be made up of individuals belonging to Generation Y and Generation Z with diverse expectations around work and value systems. Millennials and centennials will invade into the world of finance leadership with very high levels of digital dexterity and analytical mind set.

# Data Dilemma – a key challenge for the 21<sup>st</sup> century CFO

“Water water everywhere not a drop to drink”

Finance organizations often find it hard to keep pace with the growing requirements of their businesses. Technology has enabled organizations to receive significant amount of data which needs to be optimally utilized for decision making. Information is flooding into business, pushing data volumes through the roof. Apart from internally generated business data there is a lot more data outside the business which influences decision making. Years of investments in business intelligence solutions have helped the finance community to meet with the demands of data. However, the demands of the digital economy are throwing up newer requirements of actionable insights that are often not easily available from the existing tool sets.

## Unstructured data:

The massive growth of structured data is challenging enough, but the amount of unstructured data from video, photographs, and text raises analytical challenges that many finance organizations are not prepared for. The existing technology landscapes and infrastructure is often found wanting to handle the sea of data entering the business. CFOs are over burdened with data.

## Lack of analytical tools:

To resolve the problem of unstructured data CFOs require strong analytical tools to decipher the data. The complexity of IT landscape makes it difficult to get the right information without adequate analytical tools. Finance is struggling to evolve the set of standard algorithms and data models that would underpin the business needs first and offer dynamism to the changing business scenarios.

## Business is going Digital:

Business dynamics in India are changing. Customer preferences, trends, fashion, technology are fast changing. Indian consumer now has the purchasing power and the appetite for new, fast changing trends. To survive, businesses have to even launch products in hours instead of months. These products can disappear just as quickly and so can the customers. Finance needs to do more things in real time, a post mortem approach would be detrimental.

## Developing data sensitivity in finance talent:

The traditional pool of finance talent includes accountants trained in the skills of compliance and book keeping. The data deluge in the new age Finance will require a completely new skill set from Finance – the ability to synthesize large volumes of data and identify trends and patterns. This does not come easy and will require finance talent to undergo trainings in data science and upskill in statistical tools. More importantly, there will need to be a material shift in the mindset that co-existing with large volumes of data and analysis will be an integral part of Finance skills going forward.

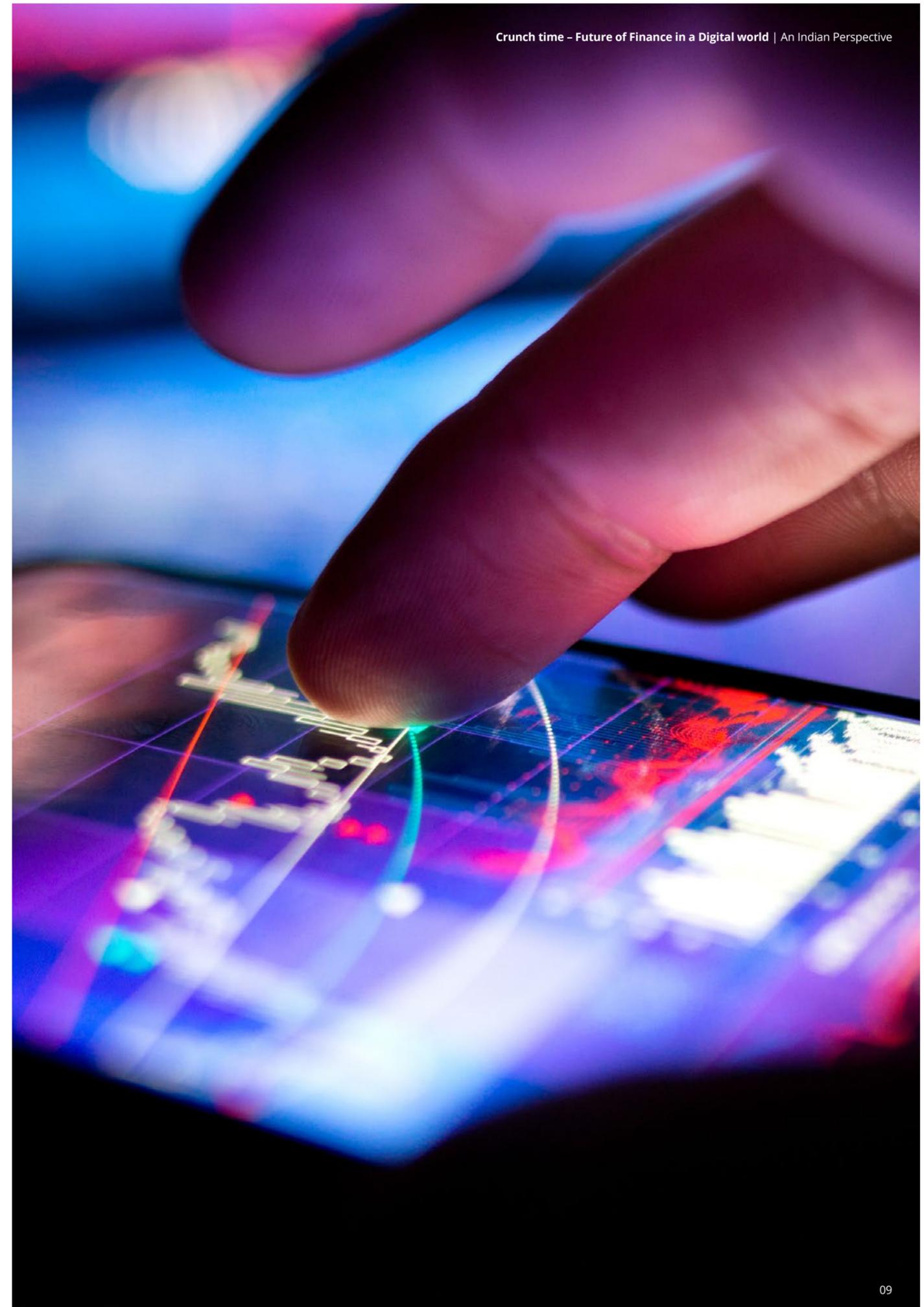
## Fidelity of master data:

One of the complex challenges that most finance teams grapple with is the dependability of the master data. As businesses have grown over the years, and M&A activities thrived, master data discipline has remained an often ignored governance requirement. As India gets ready for a GST implementation, the importance of having a sanctified and reliable master data cannot be over emphasized. Duplicate records or

incomplete master data would compound complexity and may result in tax credits being deprived due to inability of automated set off in the GST Network (GSTN).

## Data dilemma: Call of action for Finance in the digital world

01. Undertake a thorough scan of master data and fix inconsistencies. Set up a data stewardship function for sustenance of master data discipline. Focus on articulating the common minimum requirements for data interchange and data standards for the organization.
02. Induct data science skills in finance teams in a phased manner. These skills often come at a premium and may require an active academic partnership to groom talent with an orientation specifically for Finance. This is a techno-functional role that requires deep understanding of the core analytics solutions, supplemented with business appreciation.
03. Invest in understanding the potentials of external big data mining – from structured and unstructured sources. It is not just enough to mine data, knowing where to find the insights and how to deploy the insights for decision support will also be equally important. This is a discipline in its own right and requires a role within Finance.
04. Make insights driven decision making a part of Finance value system. This is a cultural shift and requires leading from the top. The CFOs should insist upon insights for every decision support and exhort their teams to a culture of inquisitiveness and numeracy.



# The evolving role of CFOs in a digitally smart India

## Survival of the fittest

### How is the role of an Indian CFO changing?

Traditionally, the role of a CFO has been evolutionary, where he was seen to excel at managing accounting, working capital, cost control, inventory, and capital expenditure. He was considered as a controller with a focus on transaction processing and financial reporting. This trend was prevailing not only in large Indian home grown companies but also in multinational companies which had significant global influence. In some cases, the CFOs were able to break out of the archetype and craft a role of Finance as a true enabler for business decisions. However, this process of evolution has been a long journey and required significant change management at various levels.

It is now almost clichéd to consider a CFO as a strategic business partner—this expectation is a given. The challenge is to prepare the finance leaders for this new ask from the business and society. The wave of digital revolution in India has made this ask even more competitive—not only is the CFO expected to excel as a business partner, the role demands the incumbent to thrive and contribute in an ever evolving digital ecosystem.

If we look at the way the sociological and economical ecosystem is evolving, we are on the verge of a digital disruption of the nature that very few countries across the world would have seen. Initiatives such as Aadhar, the Unified Payment Interface (UPI), and the Jan-Dhan Yojana are classic examples of how the economy is being introduced to Digitalization.

The government first established the platform and the ecosystem which have now paved the foundation for the next steps, a classic example being the Aadhar enabling Direct Bank Transfer (DBT). The recent wave of demonetization has only accelerated the process and ubiquitous mobile opportunities make the journey easy and accessible for all.

It is only natural that if the entire frontend is getting digital and becoming more autonomous, the functions that support this ecosystem should keep pace with these fast economic and business model changes. The way Indian businesses and finance leaders are taking up the challenge, over a period of time, Indian finance organizations will probably get recognized as one of the most digitally sophisticated Finance organizations anywhere in the world, well aligned to the government's vision for Digital Bharat!

Traditionally, CFOs in India have been playing the role of an Operator and a Controller not only in large home grown conglomerates but also in multinational companies which have significant global influence. But that facet is fast changing...



## A few relevant examples:

- A leading consumer equipment manufacturing company in India has started using Blockchain to make payments to their suppliers. Earlier, the payment process was cumbersome and involved several steps that included confirmation of delivery by the company, raising of a physical bill of exchange by the supplier and submission of invoice and transport documents to one of India's leading banks for payment. After the implementation of Blockchain, the details of invoices processed in the company's Oracle system get transferred to the bank on the Blockchain, then are discounted and funds are disbursed to the vendors of the company. On the due date, the solution facilitates an automated debit from the company's account maintained with the bank.
- One of India's leading consumer products and services companies, in the global beauty and wellness space, implemented Tableau to analyze large amount of data on inventory movement, retail behaviour, sales and marketing, and procurement of key inputs, allowing them to gain detailed insights into the company's performance.
- Executives of parts distribution division of one of the world's largest two-wheeler manufacturer, traditionally used to record the orders on paper or received it through emails. As a result, it faced several issues with the manual processes for recording orders as they were time consuming and resulted in delays and errors, given the huge volume of orders. The company felt a need to capture the orders through a mechanism which was readily available with parts distributor executives. Accordingly, it developed a mobile app which was integrated with the company's CRM platform for channel partners. With this app, a customer is assigned an executive based on the executive wise tagging of the customers created in it. The app empowers the executive to check the stock and price of any part on the fly.

It is almost a foregone conclusion that, a few years from now, Finance will be running on an ecosystem of mobile apps. As mobility solutions continue to change the human behaviour patterns, such as in the way we order food, hail taxis, or request a plumber, enterprises will adopt mobility to run their businesses. The convenience of an apps-led architecture and the dominance of the millennials in the workforce will hasten this makeover. The CFOs should plan for this future and work closely with their CIOs and IT partners for the right solutions that are enterprise ready, cyber secure, and fully integrated at the back end.

### Digital finance for a Digital India: Call for action for Finance in the digital world:

01. Prepare backend systems and processes for a possible future of paperless payments process, supported by GST Network and electronic billing.
02. Invest in cyber security and embedded controllership. Digital world is open to malfeasance and hacking like never before. The recent incidence of Ransomware attacks globally have escalated cyber breaches to new levels and have once again highlighted the need for sustained cyber vigilance.
03. Invest in understanding Distributed Ledger Technology (DLT) for potential

applications in Finance. Indian banks are betting big on this technology. The central bank in Singapore has recently approved a proof-of-concept for use of DLT (of which Blockchain is one type) for interbank transfers. It may be a matter of time that RBI provides the regulatory framework as well.

04. Be prepared for audit beyond limited sampling. Digital audit is becoming a reality where cognitive tools can scan the entire database and extract information that is really required. To respond to audit queries, Finance needs to up the ante and invest in real time embedded controllership and forensic skills.



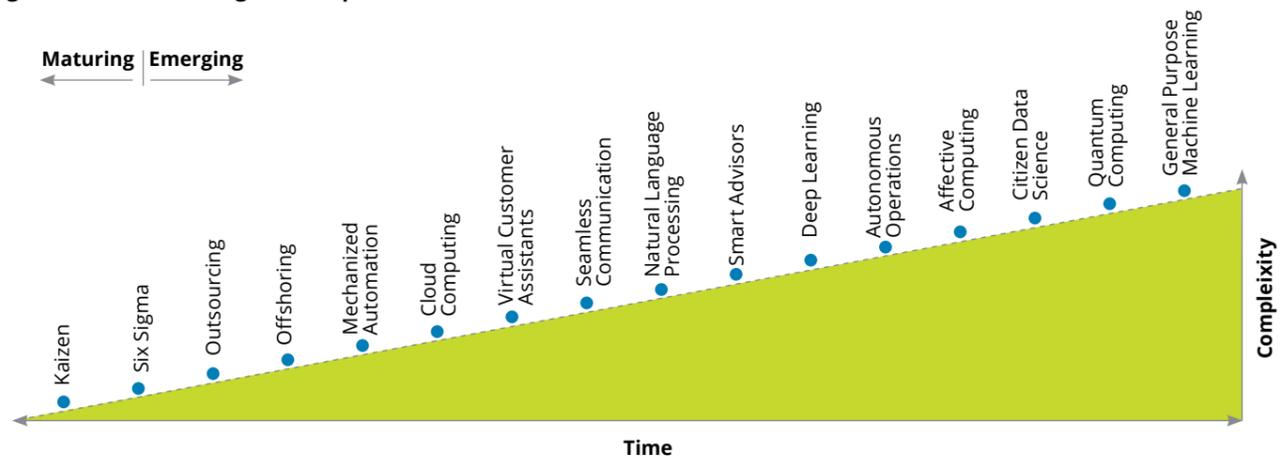
# Eight exponential technologies to shape the future of Finance

“The Octagon of Exponentials”

Innovations in technology in the last fifty years have enabled the finance function to move from hindsight to insight. While it took thirty years for the technology of the twentieth century to capture and distribute data, a shift in half that time has empowered people to leverage that data through performance tracking, mobile devices, and robotics process automation. Smart CFOs are currently investing heavily in fully robotized and automated transactional processes and controls, which is a stepping stone to enable the

next big shift: cognitive computing, where systems not only present data but truly process that data and generate actionable information. Refined datasets will empower the CFO to focus on making the decisions that maximize business and customer impact. Amplified intelligence leveraging internal and external data will strengthen the role of the CFO as a Strategist and a Catalyst but only if technologies are leveraged to optimize the Steward and the Operator roles first.

Figure 2: Evolution of digital disruptors



Technological developments in the twentieth century enabled only hindsight: broad historical reporting on key performance indicators. The power of personal computing generated insight through statistical analysis that helped organizations understand their historical performance. Cognitive computing will yield foresight by leveraging advanced analysis, machine learning, and modelling to predict future performance. (Source: Image based on Gartner’s Hype Cycle for Emerging Technologies.)

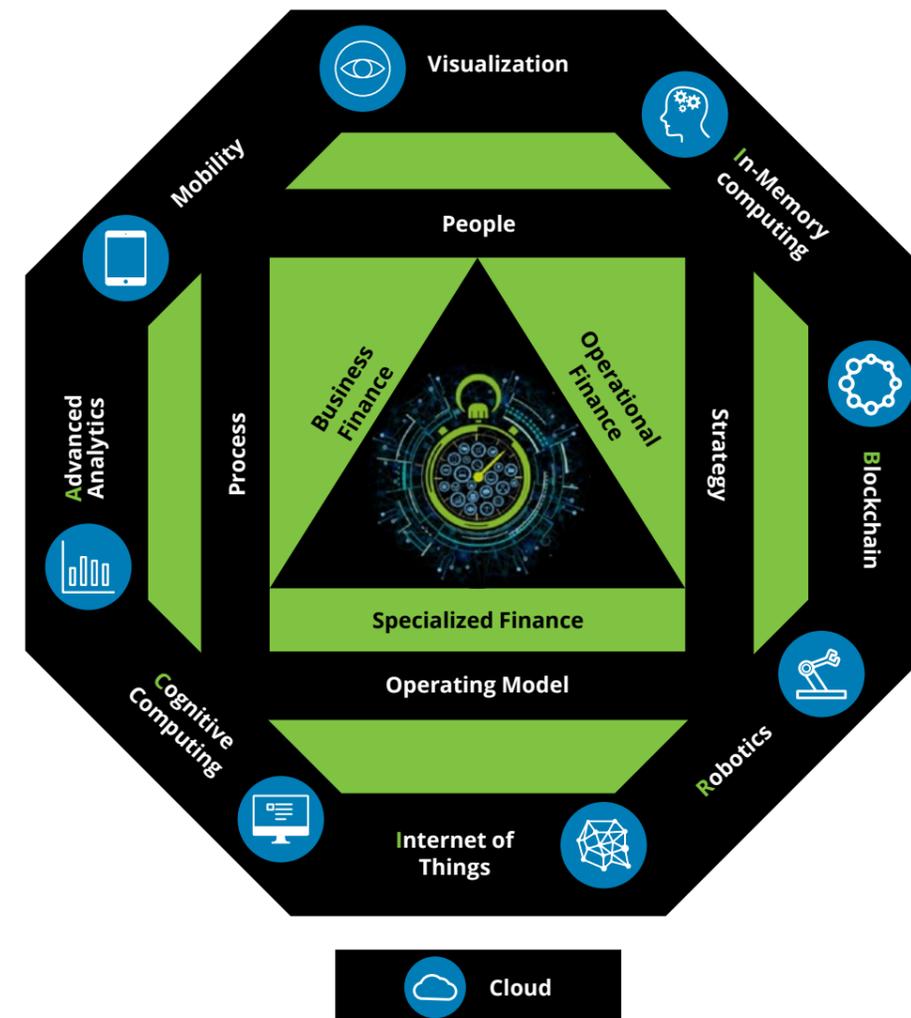




**Figure 3: The Octagon of Exponentials**

As the underpinnings of information technology shift, it has never been more important to look ahead and anticipate changes. Fortunately, CIOs and CFOs are developing the dexterity and vision to grapple with developments ranging from machine intelligence to new IT organizational models. Because they are realizing that if they are not already preparing to make the shift, they risk becoming digital dinosaurs!

Our research shows that future of Finance will be propelled by a set of **eight exponential technologies** that will redefine the way Finance will deliver organizational value. We have named this evolving ecosystem as the **“The Octagon of Exponentials”** to reflect the interconnectedness and interplay of these eight technologies.

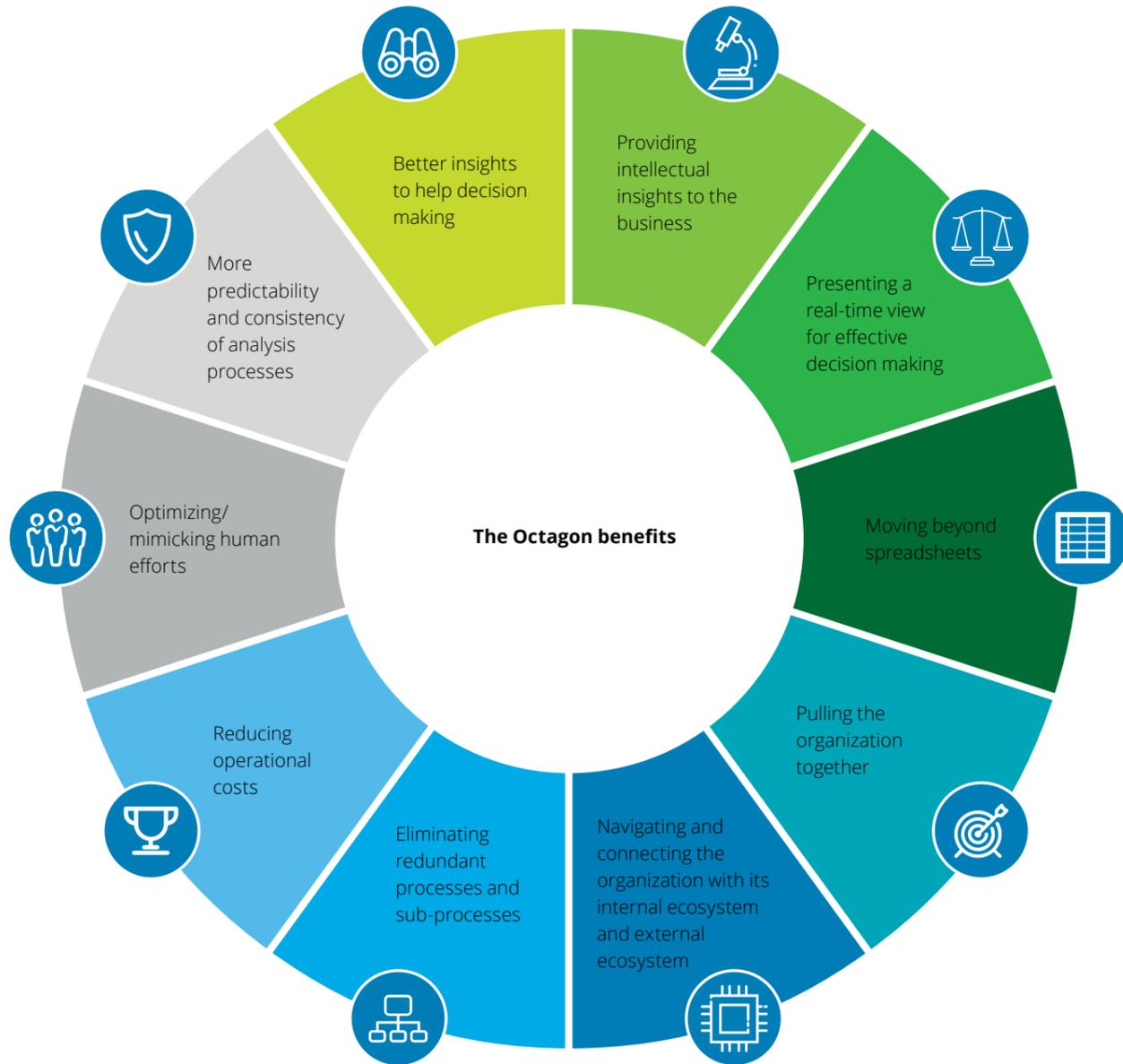


This entire ecosystem of this octagon coming together and all working on a cloud platform are going to define the future of Finance, from a technology play. But it is important to remember that these eight are not separate pieces. They are all a part of the continuum, and it is only when the continuum comes into play that Finance will start realizing the

full benefits of these technologies. This is a once in a generation opportunity and it is important for the CFOs to realize that if they do not leverage on the opportunity right now, if they do not ensure that we respond with speed and alacrity, they will possibly sleepwalk into a digitally disrupted future with little preparedness.

Figure 4: Value from the Octagon

The eight technologies collaborating in tandem will revolutionize the finance function



All these technologies are likely to sit on top of a **Cloud environment** that uses scalable, elastic technology to deliver services over the Internet. Instead of making large investments up front, Finance can get the full stack of finance functionality “as-a-service”, delivered through public, private, or hybrid clouds. Adoption of Cloud, with sufficient security features, will be an essential component of the octagon.

Areas where the eight technologies will impact Finance:

The eight technologies will bring in a wave of disruption in core Finance areas. While FP&A is the area where maximum disruption is seen, there are other transaction based areas where we will see significant influence. The chart below summarizes the key areas in Finance disrupted by these elements.

Figure 5: Disruptions through the eight technology areas

Exponential Technologies	Visualization	In-Memory Computing	Blockchain	Robotics Process Automation	Internet of Things	Cognitive Computing	Advanced Analytics	Mobility
<b>Finance areas</b>								
Fixed Assets					x		x	
FP&A	x	x	x	x		x	x	x
Order-to-cash			x	x			x	x
Procure-to-pay			x	x	x		x	
Record-to-report				x			x	
Tax				x			x	
Treasury			x	x				
Investor Relations	x		x			x	x	x

x Areas of Finance Disruption

The following sections delve deeper in each of the elements, their maturity in Indian markets and how they are influencing Finance as an organization.

# Robotics Process Automation (RPA)

“Embrace the hum-bot culture of the future”

## What is RPA?

RPA is a computer-coded software, commonly referred to as a BOT, that emulates human actions and is able to drive automation of rule-based processes. It is an ideal automation technique for any process that has heavy dependence on data entry, data manipulation, triggering responses, and communicating with other digital systems.

Organizations see this ‘IT-light’ technology (RPA operates only at the UI level, eliminating the need for any integration with ERPs) as a blessing to dramatically bolster process efficiency levels, accuracy levels, and throughput for transactional processes, without having to navigate IT organization complexities required for other automation interventions.

Robot-led automation has the potential to change today’s workplace as dramatically as the machines of the Industrial Revolution changed the factory floor. Core skills that are related to business, process knowledge, technology integration, and insightful analytics could be delivered through a leveraged model at a lower cost. The capability and demand already exists for this technology and it is enabled by abundant computing power and software solutions that can be packaged and downloaded as “apps”.

Organizations using RPA solutions typically experience benefits beyond cost reduction.

- a. Decreased cycle times and improved throughput:** Software robots are designed to perform tasks faster than a person can and do not require sleep—making 24x7 operations possible.
- b. Flexibility and scalability:** Once a process has been defined as a series of instructions that a software robot can execute, it can be scheduled for a particular time, and as many robots as required can be quickly deployed to perform it. Equally, robots can be quickly reassigned when other, more important processes arise—as each robot is typically capable of performing many types of processes.
- c. Improved accuracy:** Robots are programmed to follow rules and robots do not make typos.
- d. Improved employee morale:** The tasks and processes most suitable for automation are typically the most onerous and least enjoyed and employees relieved of them can be refocused on more rewarding and higher value activities.
- e. Detailed data capture:** The tasks performed by a software robot can be monitored and recorded at every step, producing valuable data and an audit trail that can support further process improvement and also help with regulatory compliance.

Applied alone, RPA has great potential for automating routine tasks, those that are methodical, representative, and rule based. Some illustrative tasks that can be automated are:

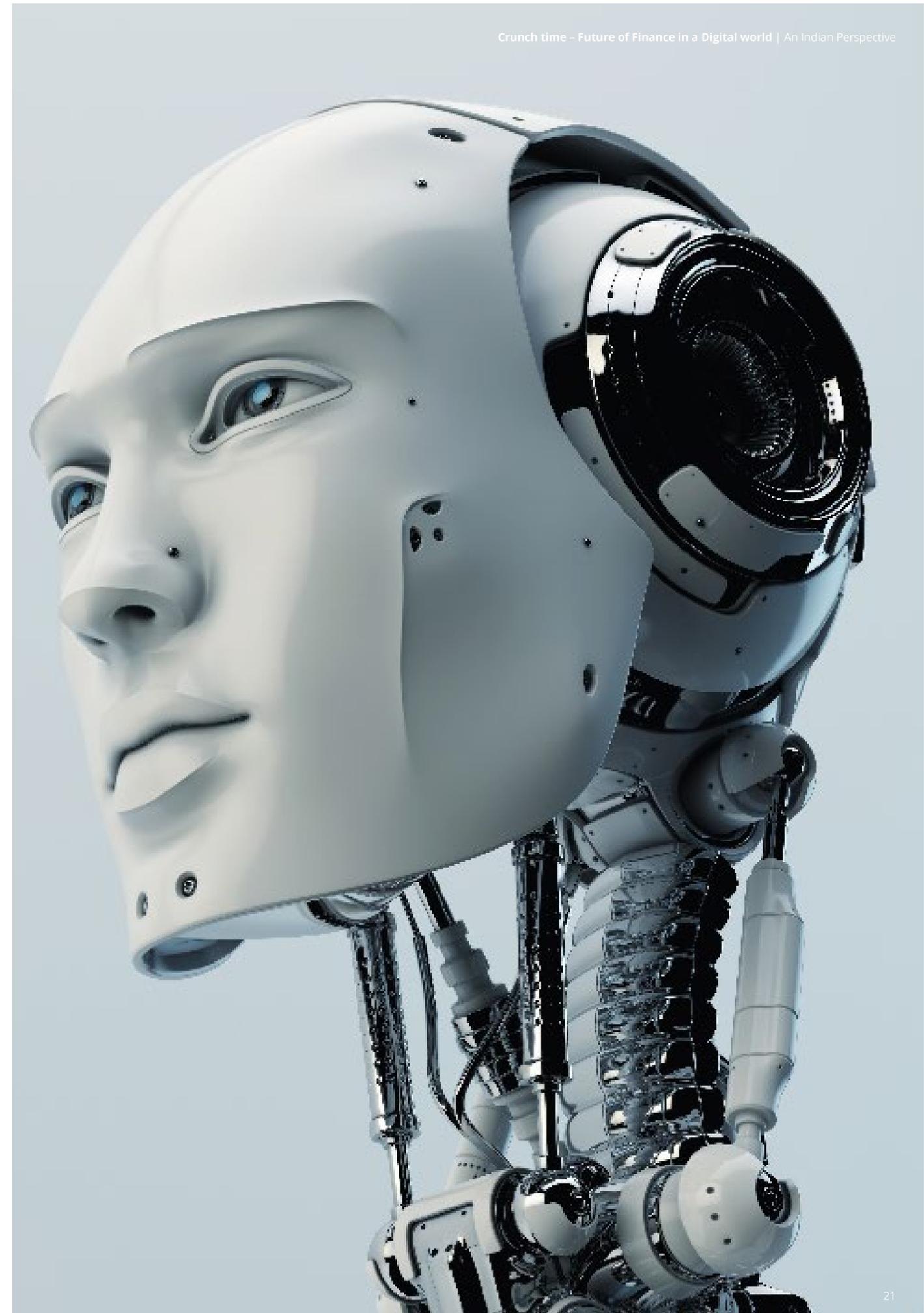
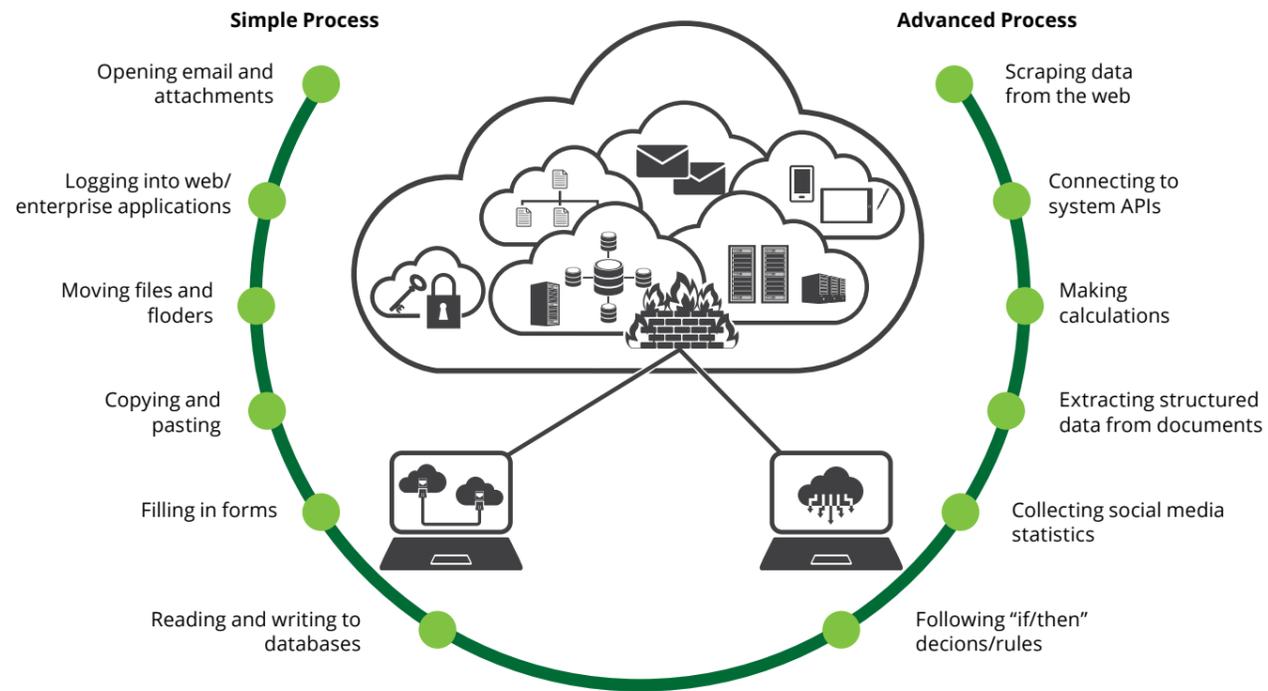


Figure 7: Range of possibilities for RPA enabled processes



**RPA in the CFO's office:**

Interestingly, the more transformational and meaningful impact of RPA has been its ability to elevate the overall nature of work for the F&A organization. Finance has always been known for operational and stewardship activities, such as transactions processing, accounting entries, and report preparation. BOTs have opened up a whole horizon of opportunities where the focus will be on more value-additive and engaging activities.

Nothing is more exciting to CFOs than to see projects with high ROIs, low risks, and even lower timelines for implementation. And RPA meets those requirements very well. Ranging from a design to implementation cycle time from a few weeks to a few months (usually less than

four), an RPA investment also pays back for itself typically within the budgeted year—unfathomable for most traditional IT investments.

F&A processes by their very fundamental characteristics are considered as RPA ready. Processes are typically heavily reliant on ERPs or excel for inputs and outputs, addressing a key RPA readiness criteria—one which requires process inputs to be electronic /structured and consistent. However, despite this, each F&A process demonstrates a unique, and sometimes widely divergent amenability to RPA.

The key is to drill down into process-specific and activity-level characteristics to gain a sharp sense of which processes RPA can be applied to (Amenability Guidelines)

and estimate the level of benefits that can be expected. In the table on the next page (Fig 8), some of the typical finance processes have been tested for amenability to robotics automation.

**Deloitte's RPA Amenability Assessment Guidelines**

- 01. Well-defined, stable process, with limited and predictable exceptions
- 02. Structured, consistent inputs to the process
- 03. Minimal 'embedded' logics in the process
- 04. No requirement for any physical or voice interaction during the process

Figure 8: RPA Amenability index for typical F&A processes

Level 1		Level 2		Level 3															
Finance* (40%-60%)		Accounts Payable (80%-100%)	Accounts Receivable (40-50%)	Fixed Assets (50-60%)	Travel and Expenses (85-90%)	Cash Management (30-40%)	General Accounting (45-60%)												
20%	40%	60%	80%	20%	40%	60%	80%	20%	40%	60%	80%	20%	40%	60%	80%	20%	40%	60%	80%
Receive Invoice		Processing of Sales Orders		Work Order Creation		Expense Processing (General)		Manage Business Advances		Journal entries		Financial statements analysis							
Approve Invoice		Credit Control		Asset Movement		Expense Processing (Leadership)		Petty Cash Accounting		Trial balance preparation and review		Financial and regulatory reporting							
Release Invoice		Debtors Management (B2C)		Asset Ageing Analysis		Open Purchase Orders		Petty Cash Management		Account reconciliation									
Prepare Payment Run		Debtors Management (B2B)		Dispose Assets (Accounting only)		Manage T/E Reporting		Manage Expense Reimbursements		Intercompany accounting									
Perform Vendor Reconciliations		Collection Accounting		IFRS Adjustments						Statutory/GAAP adjustments									
Perform Spend Analysis				Period-end Procedures						Period End Close									
Managing Queries (English language)										% the process can be typically automated		% the process cannot be typically automated							

Size of opportunity often ranges from 40% to 60% operational efficiencies, with highest amenability experienced in the usual suspects: Accounts Payable, Fixed Assets, and T&E - processes characterized as being typically low-risk, self-contained, and rule-based. In addition, there are pockets of opportunity in Accounts Receivable (sales order processing, debtors reporting etc.), and General Accounting (journal entry processing, reporting), which are also being actively considered in the RPA portfolio as a testament to the strength of the RPA solution.

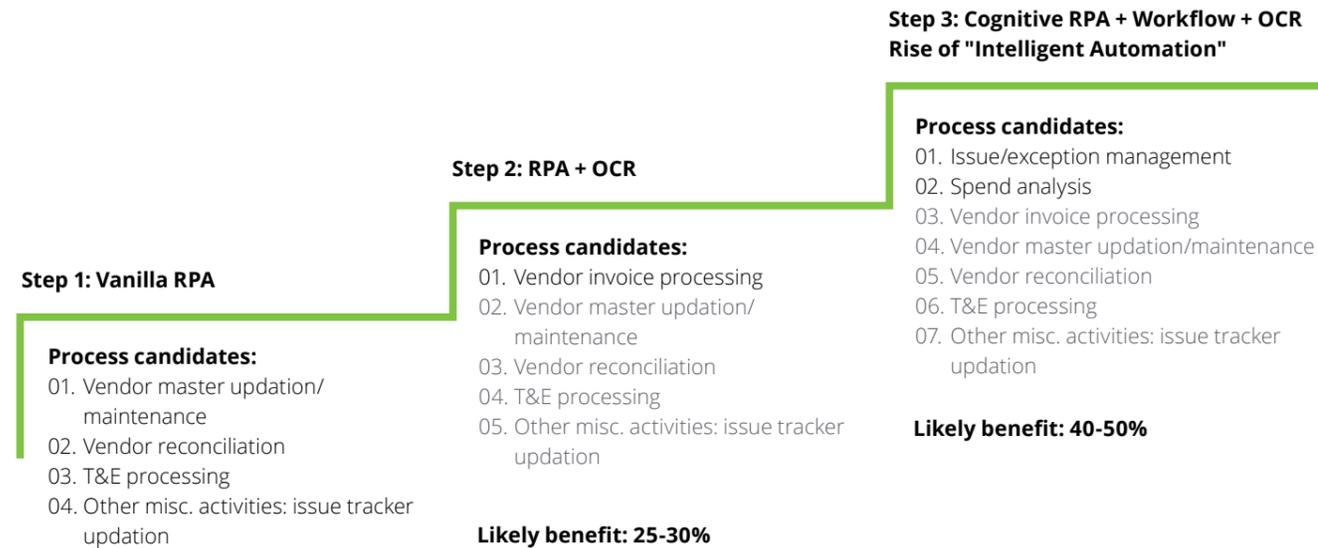
While many organizations are keen to quickly ride the RPA wave, more successful organizations ensure that at the onset, there is an enterprise-wide, clearly defined digital strategy, of which RPA forms an integral, but ultimately, only a piece of the ecosystem.

Best in class practices suggest RPA must not be viewed as a point solution - the road map for automation should look beyond the initial deployment and set out how automation will grow within the organization. As an example, RPA will not eliminate the need to continue to invest

in other enabling tools, such as the ERP, workflow and document management solutions, OCR tools etc. A fully automated process is conceivable only when each tool plays its part, and hands over the output from one stage to another, seamlessly. Consider Accounts Payable (AP).

Most view AP as the one of the most transactional processes in the F&A portfolio, and therefore expect RPA benefits to range upward of 40-50%. However, organizations are required to adopt a ladder approach to experience the benefits of RPA in its full form.

Figure 9: Layered approach to leveraging RPA



As can be seen, a combination of tools including RPA, cognitive (intelligent) robotics, workflows, OCR solutions, etc., are required for a truly transformative approach to automation.

Specific interest has been around how automation can replace humans in non-routine, complex, creative, and often exploratory tasks—in other words, systems that can automate human cognition, being referred to as 'Intelligent Automation'. Developments in machine learning, powered by scalable computing resources in the cloud, are making computers capable of recognizing patterns and understanding meaning in data in a human-like way.

It is now becoming possible for CFOs to visualize an environment where an ERP supported closing cockpit ensures timely period closing, an RPA solution is able to extract and format month-end closing data, handover to a natural language generation (NLG) tool which deduces facts and trends (including from external unstructured data) and finally whip out month-end reports by hour six, with expected reliability.

RPA in action: Indian and Global Use cases



**Case 1:**

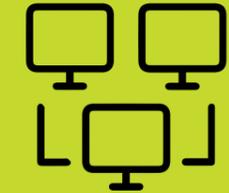
A leading private bank in India implemented RPA across 200 processes across the organization, including retail banking operations, agri-business, trade & forex, treasury and human resources management among others. Robots are currently processing over 10 lakh transactions daily, bringing in unparalleled operational efficiency, higher accuracy and a massive reduction in processing time for customer services.

Software robots are configured to capture and interpret information from systems, recognize patterns, and run business processes across multiple applications to execute activities, including data entry and validation, automated formatting, multi-format message creation, text mining, workflow acceleration, reconciliations, and currency exchange rate processing etc. The bank saw significant productivity improvement, better turn-around-time, improved customer service, and reduction in errors.



**Case 2:**

A large bank deployed a full Robotics Process Automation (RPA) implementation using 100 robots running 18 processes to handle more than 85,000 requests each week. The output capacity delivered by the robots was equivalent to roughly 230 Full-time equivalents (FTE) delivered at 30 percent of the cost of recruiting more staff. Additionally, two of the top five quality fails were eliminated following introduction of the robots.



**Case 3:**

After exploring ways to improve its mature shared services operation, a global manufacturer concluded it could bypass traditional Business Process Outsourcing and focus instead on robotics and cognitive technologies. The company could automate an equivalent of 80 percent of its FTE workload.

# Cognitive Computing

“Simulation of human thought”

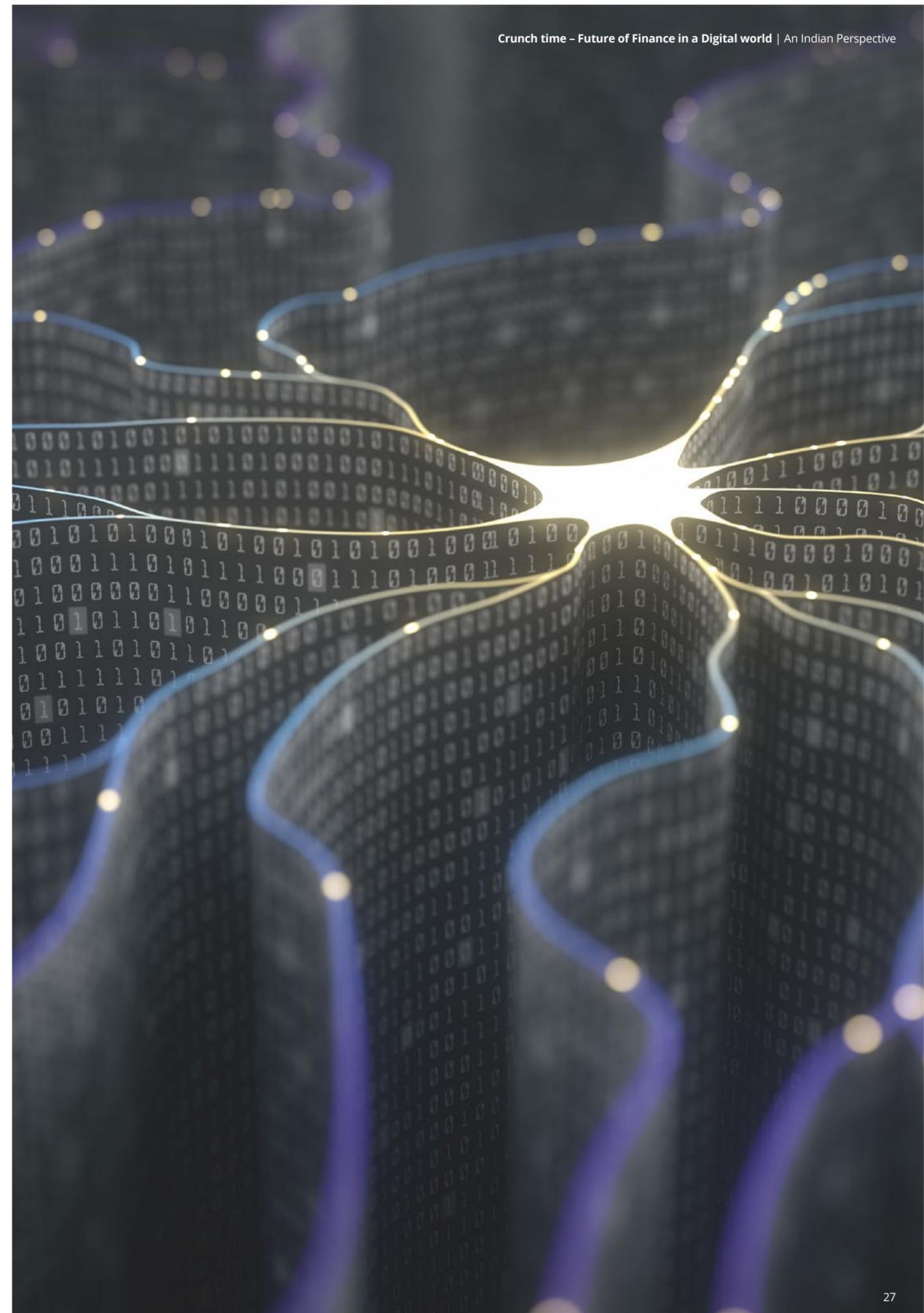
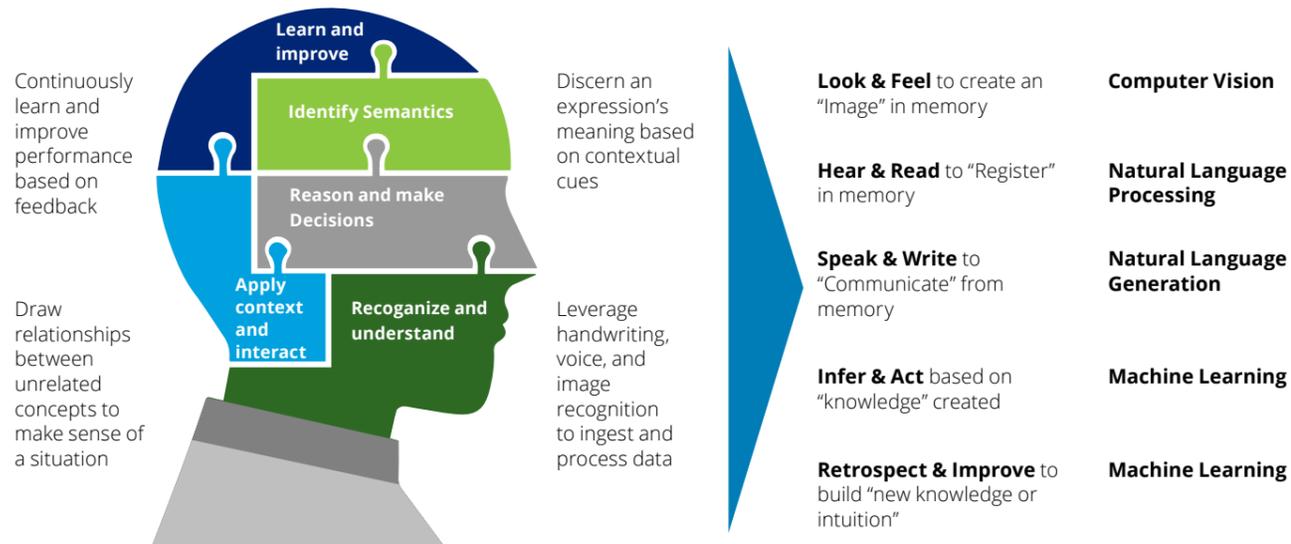
## What is Cognitive Computing?

Perhaps the most disruptive set of technologies upending the world of Finance lie in Artificial Intelligence (AI) applications. A subset of AI is Cognitive Computing which by definition is “a self-learning system that uses data mining, pattern recognition, and natural language processing to mimic the way the human brain works. The goal of cognitive computing is to create automated IT systems that are capable of solving problems without requiring human assistance”. These advanced tools simulate human cognitive skills, grinding through

mountains of data to automate insights and reporting in real time. Cognitive solutions may be deployed from the cloud and offered as a hosted service or may be deployed on in-house servers, depending on the organizational IT landscape and requirements.

Machine Learning, Natural Language Processing, and Natural Language Generation are considered to play a significant role in structuring the future Finance office.

Figure 11: Cognitive systems perform a variety of tasks to tackle problems similarly as humans used to do



**Machine Learning**

Machine learning is a branch of the larger discipline of Artificial Intelligence, which involves the design and construction of computer applications or systems that are able to learn based on their data inputs and/or outputs. Basically, a machine learning system learns by experience; that is, based on specific training, the system is able to make generalizations based on its exposition to a number of cases and then is able to perform actions after new or unforeseen events.

As an example of machine learning in practical use in Accounts Payable, a Cognitive BOT can be trained in processing a series of transactions and be disciplined to handle specific exceptions with the right set of action items and issue resolution mechanisms. BOTs can also be trained on “Intelligent Scheduling” of invoices which the accountant has to manually keep track of.

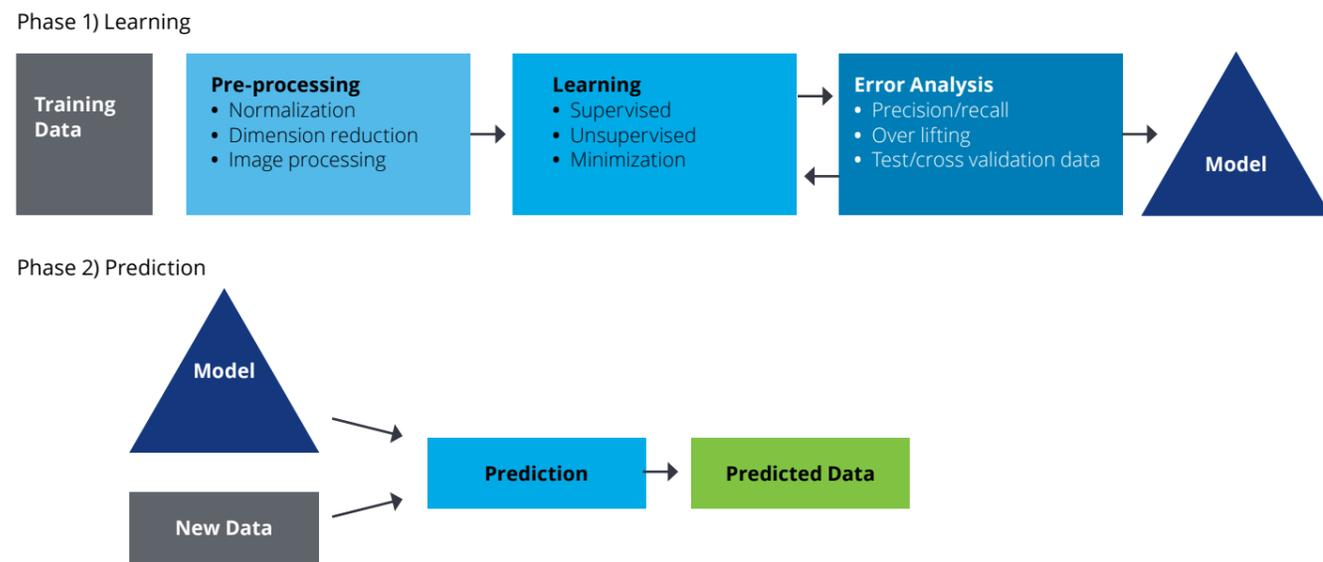
Further, the discipline of machine learning also incorporates other data analysis disciplines, ranging from predictive analytics and data mining to pattern

recognition. A variety of specific algorithms are used for this purpose — frequently organized in taxonomies, these algorithms can be used depending on the type of input required.

**Machine Learning process:**

The Machine learning set up process typically involves two phases namely the Learning phase and the Prediction phase. In the learning phase, the BOT is introduced to a series of data that it would be working on. It then goes through a structured training exercise which includes Pre-processing, Learning, Error analysis, etc.

**Figure 12: Depicting the Machine learning process**



Once the Learning process is completed, it is exposed to an advanced-level training, which includes Predictive analysis, that would be complementing the human analytical work in the future.

Machine Learning is effective where large volumes of data exist. Thus, it becomes a highly effective tool in areas of Finance. Some recent advances in use cases have been found in risk assessment, audit functions and FP&A. Machine learning

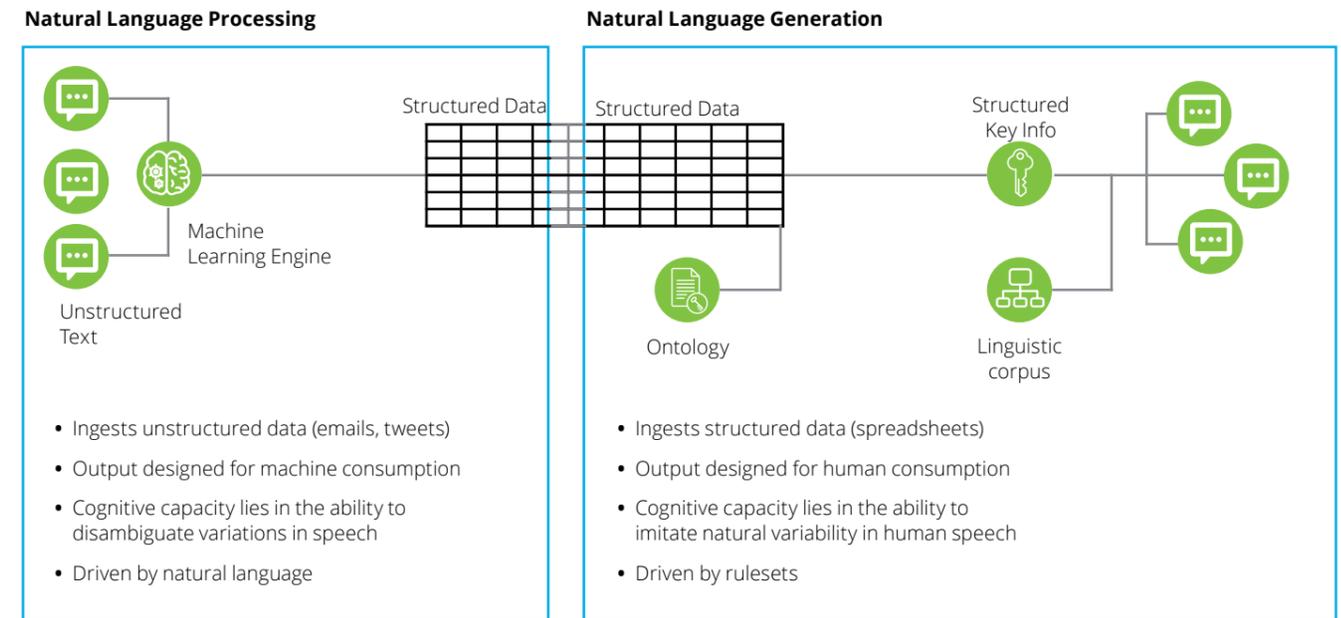
is also contributing in Robotics Process Automation (RPA) where the process automation keeps improving based on a self-learning feedback loop.

**Natural Language Processing (NLP) and Natural Language Generation (NLG)**

Consider these statistics – “74% of firms want to be data driven but only 29% say they connect analytics to action”; “88% of finance leaders say that decision

makers in their enterprise want a better understanding of the analysis they receive and they want Finance to simplify it for them”. Finance is expected to play the role of a “translator” of business data and for this, there is an increasing need for Finance to dig deep into the data sets and patterns and understand the underlying layers of reasons. Today, NLP and NLG are vital tools in the armoury of the finance office to achieve this goal to graduate as a “translator” for business performance.

**Figure 13: NLP and NLG can be effectively used in Finance and Accounting processes to significantly reduce manual effort**



**Natural Language Processing (NLP)**

enables computers to analyze and understand the human language. This enables the user to have “natural conversations” with a system rather than through programming (read artificial) languages. NLP is an attempt to make computers “intelligent” such that they communicate and behave as humans do. Simplistically, NLP consists of three steps:

**01. Speech to Text** – This is where the computer understands and interprets what humans are telling them. In-built algorithms and routines convert our language into a programming language the computer can understand.

**02. Part of Speech Tagging** – Here the language is broken down to its grammatical parts of speech like nouns, verbs, adjectives, etc. which can be used as inputs for the next stage.

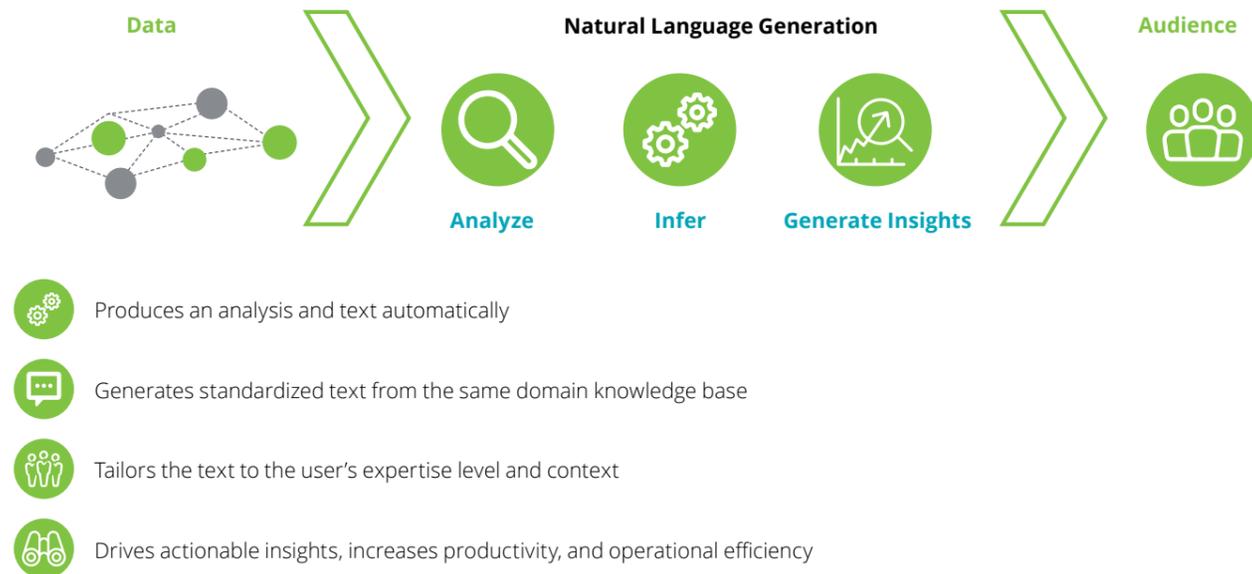
**03. Text to Speech** – After the relevant output is selected the programme converts this data back into speech format which can be easily understood by humans.

NLP is extensively being tested in generation of Flash Profit & Loss Reports, Profitability Analysis, R&D Spend, Sales/ Margin Reports, Credit Reporting, FP&A and related areas. NLP can present contextual narratives for these which

gives the consumer an easy to digest and actionable insight. A sample Flash P&L report may look like this – “Commercial hours are trending above plan (+ x %) due to both professionals count and utilization and above forecast (+ x %) mainly due to increased utilization.” Futuristic scenarios include Tax disclosures, C-Suite Memos, Compliance reports, etc. where the underlying data is fairly standardized.

**Natural Language Generation (NLG):** NLG is the name given to the natural language processing task of generating natural language from a machine representation system which includes significant analysis, inferences, and generating meaningful insights for the user.

Figure 14: NLG process where raw data is processed to provide meaningful reports to the selected audience

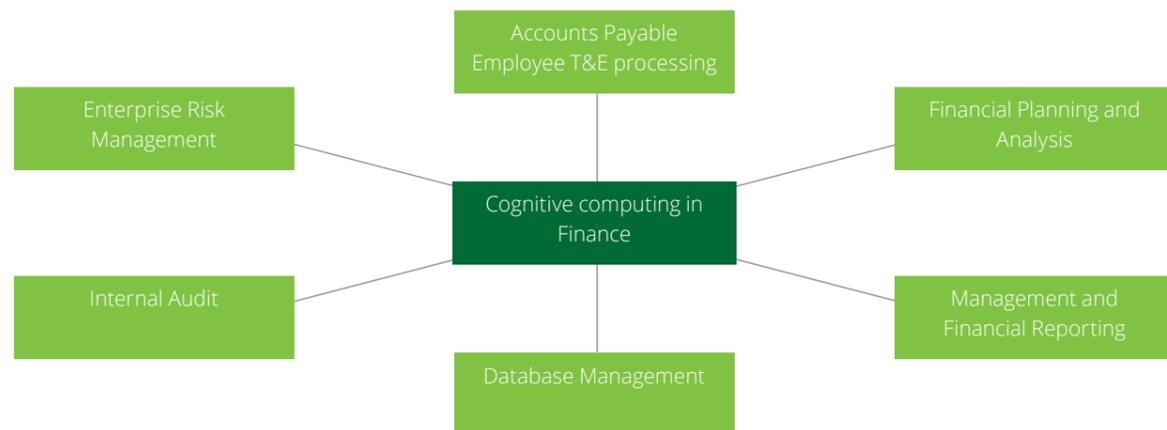


**Cognitive computing in the CFO's office:**

Presence of Cognitive workforce in the Finance world will bring about a symbiotic relationship between humans and machines to perform transactions and analytics more efficiently and accurately. Humans will still rule the Finance world

with setting the organizational strategy and objectives, formulating the hypotheses, determining the criteria, and performing evaluations. Cognitive enabled computing machines will do the routine, manual, transactional work to prepare the way for insights and effective management decisions.

Figure 15: Cognitive computing in Finance



Used in Finance, Cognitive technologies working alongside the existing ERP systems and Robotics can upend operational finance and bring about unprecedented speed, agility, and transparency to processes. These processes have a deterministic way for exception handling (Employee T&E processing, Management Reporting, Internal audits, etc.) and are an ideal fit for cognitive automation, thus creating bandwidth at all levels in Finance.

**a. Machine learning in Internal Audit:**

In audit, because of recent advances in machine learning, standard audit techniques like sampling are on the verge of becoming obsolete. This directly affects the audit industry's employment model, which has been dependent on hiring scores of graduates to carry out mundane administrative work. This is because developments in data mining have given auditors the ability to collect, analyze, and test entire data sets. In the past they relied on restricted samples of data.

With a Cognitive BOT in the audit team, the auditors can analyze an entire set of accounting journals, rather than just taking a sample of journals that provide a snapshot. This wider view can highlight anomalies like entries posted by unexpected people or at odd times, such as weekends. Other examples include analysis of the entire set of expenses and potentially expose claims for personal travel, etc.

**b. Machine Learning in FP&A:**

For the FP&A function, the key aspect of planning is to obtain an accurate understanding and prediction of sales volumes. Many a time, though the plans are made for sales profiles, the sales forecasts turn out to be wrong. Inaccurate revenue forecast remains one of the biggest risks for the CFOs. A recent study shows that more than 50% of companies feel their pipeline forecast is only about 50% accurate. Machine learning has the potential to improve this process by:

**1. Powerful Trend Analysis -**

Humans do not have the capacity to scan vast amounts of data and come up with scenarios and identify patterns. This is where algorithms are powerful. They can examine structured as well as unstructured data and come up with meaningful and impactful analysis. These scenarios may prove invaluable in a planning cycle in providing perspectives beyond what is available merely from the ledgers and past performance data sets.

**2. Forecast Accuracy -**

Forecasts are generally driven at product level sales values. Machine learning algorithms can detect patterns at lower level feeder drivers such as brand categories, product categories, purchase orders, and even invoices to discover interesting relationships and dependencies, which can then be used as inputs into the planning cycle and thus enable more accurate forecasts.

**3. Dynamic Forecasting -**

Machines are capable of dynamically updating scenarios based on changing input parameters. They can simulate and re-simulate scenarios while tweaking data and thus act as informative decision tools. This makes the planning cycle more elastic.

**4. Interactive self-service -**

Machine Learning is now allowing companies to build self service solutions on platforms that can mine swathes of data and provide relevant and contextual responses to any standard human query around financials. A leading global FMCG company is investing in Cognitive computing to build forecasting models for its key categories and markets where executives can direct queries to the platform and expect responses that offer powers of simulation and deep learning insights, humanly impossible to obtain otherwise.

**c. Machine learning in other Finance areas:**

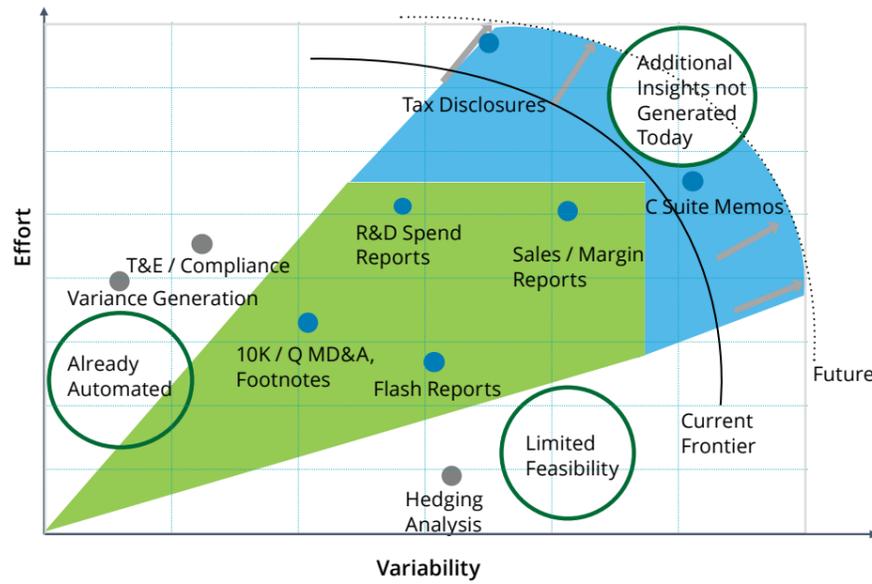
In other areas of Finance, tools have been developed that use machine learning technology to scan electronic papers and automatically identify and extract key accounting information from a wide range of documents such as contracts, policies, agreements, purchase orders, sales orders, commercial invoices, etc. These tools then improve with every human interaction, which will over time increase their power as they gather more information.

**NLG in Finance:**

NLG in Finance can be used in generating financial, statutory, and compliance reports which can consume a significant amount of human effort.

**Figure 16: NLG's potential use in Finance reporting**

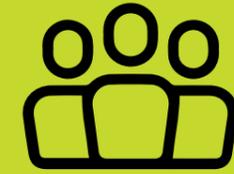
NLG's potential can be used within existing Finance reporting functions and expand the envelope to other key reporting needs



Use of NLG has the promise to free up time from business analysts in trying to discern patterns and create lengthy texts of variance/other reports. If that drudgery is taken away, the FP&A teams can focus time and attention on critical business analysis and predictive forecasting, which requires human intelligence and inference. Enabled by NLG and visualization, Finance Centres of Excellence of the future can deliver highly-tailored reporting packages with actionable insights to business leaders. A crucial impact of the forthcoming changes will be on the finance talent of the future. Traditional Finance roles like Financial Controller, Accounts Payable, or Accounts Receivable clerks may all but disappear and instead we will have Data Scientists, Scenario Planners, Market Makers, and Behavioural Scientists running the show.

Cognitive Computing holds immense potential for use in Finance and many large global organizations have started their early experiments with the use of Cognitive science. It is only expected that as routine operational processes get automated through Robotics, the next curve of evolution for Digital Finance will come in the shape of Cognitive Computing, when computers start thinking like humans and are able to predict and prescribe solutions. We are seeing real life examples through Apple's Siri and Amazon's Alexa or through Google Maps. It is a matter of time when Finance adopts the power of Cognitive computing in its core DNA and starts unleashing quantum benefits to augment the insights dimension of Finance.

**Cognitive computing in action: Indian and Global Use cases**



**Case 1:**  
A professional services organization is automating standard commentary related to weekly and periodic financial results across all businesses. This automation effort will be freeing up time for the finance team doing this work to focus on more strategic tasks.



**Case 2:**  
A news agency uses cognitive software to automate corporate earnings news articles. After an initial learning curve, the process of automated reporting is virtually error-free. The company now produces 3,700 earnings stories per quarter, a 12-fold increase over its manual efforts.

# Advanced Analytics

“Where data turns into meaningful information”

## What is Advanced Analytics?

Owing to onset of the new world order with greater technological evolution, complexity in business operations and huge data volumes, it has become imperative for Finance organizations to step up and evolve as a business partner rather than just a transactional role player.

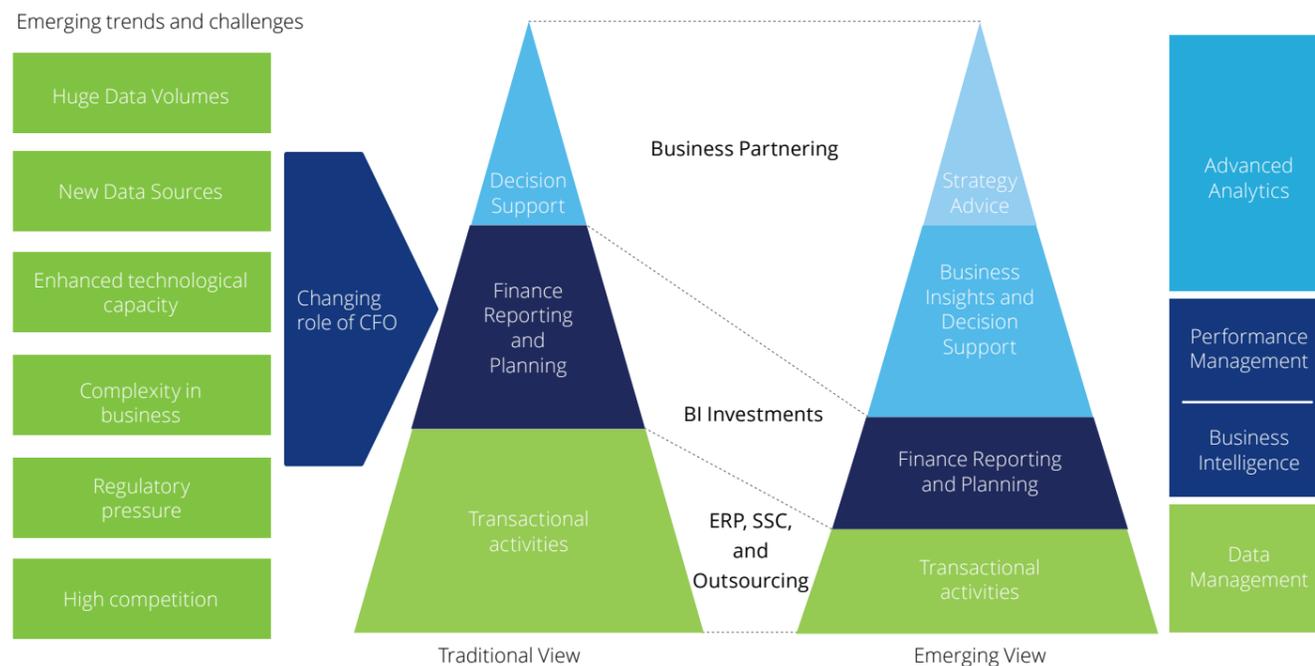
Finance executives are left to consider how to provide business leaders with more timely, accurate information, to make quicker, more effective decisions. This depends on doing the basics right: collecting the data in a structured manner

and coming out with insights, which can support decision making and add value to the organization.

## Analytics as an enabler:

Analytics is helping finance organizations across the globe to meet the emerging challenges. Finance function frequently has access to the data, tools, and people to realise the true potential of analytics. Increasingly, the techniques available can now move us from simply reporting on what has happened to predicting and even anticipating future events.

Figure 17: Trends in Advanced Analytics



Organizations are already making significant investments in advanced analytics, which have made their way into the toolset of many finance teams around the world.

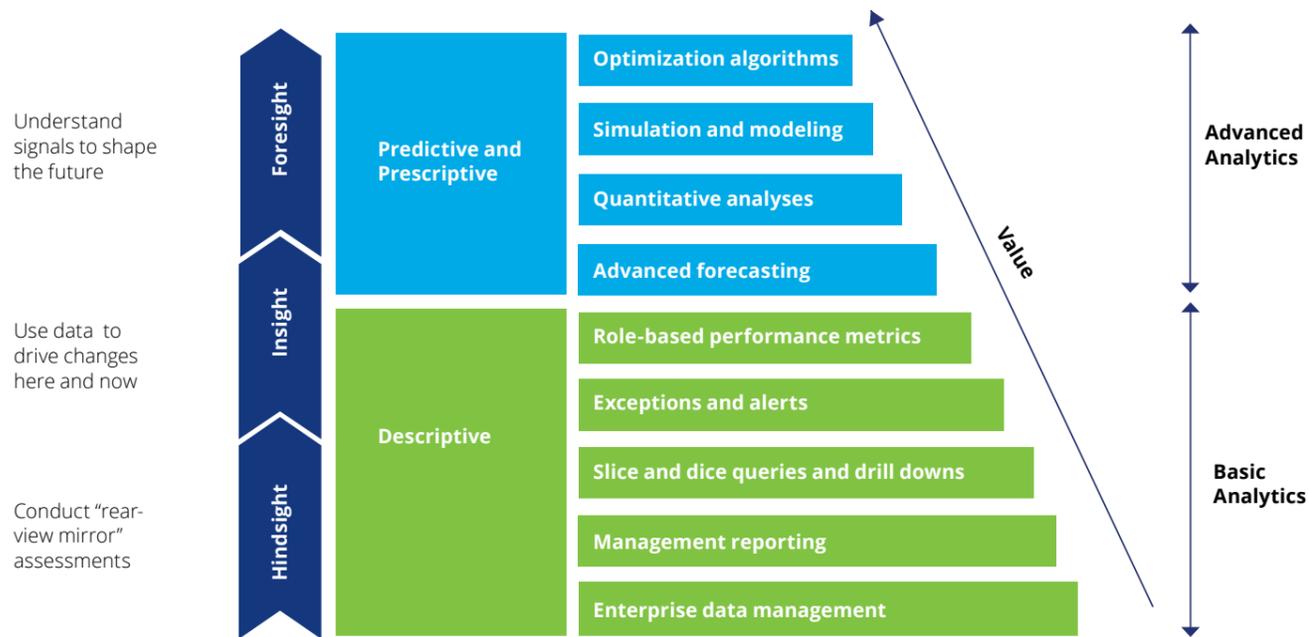
## Moving beyond historical reporting: 'An era of advanced analytics'

Analytics has evolved from being a mere data analysis technique with operational problem solving capability (based on

historical data) to a value unlocking technique capable of deciphering strategic insights and predicting future challenges for the top management.



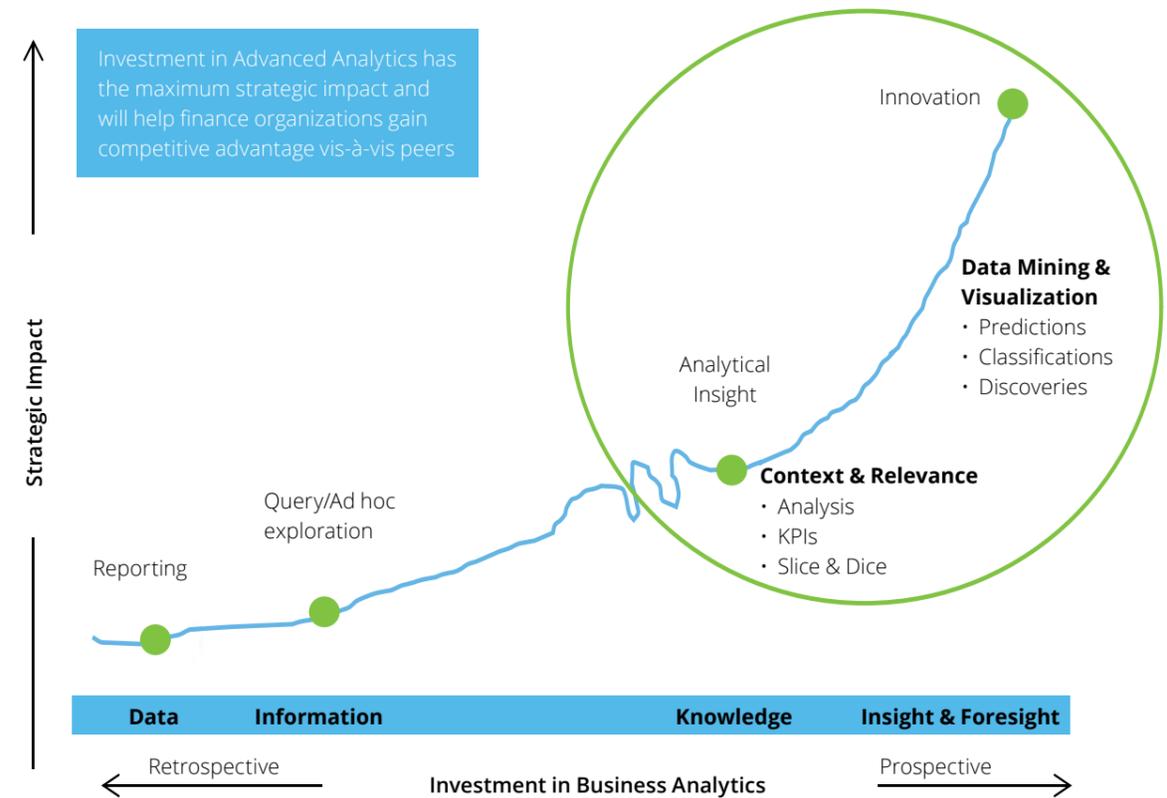
Figure 18: Basic to Advanced Analytics



Based on the level of complexity and maturity, there are three categories of analytics: Descriptive, Predictive, and Prescriptive Analytics. Descriptive analytics works on historical information and derives insights from it (e.g., MIS reports, Tax analytics etc.). As per Deloitte's estimates, 70-80% of analytics deployed qualifies to be descriptive in nature. Predictive and Prescriptive Analytics are an advanced form of analytics and are capable of solving complex business problems. Predictive analytics utilizes a variety of statistical

modeling, mining, and machine learning techniques to make future predictions (e.g., forecasting in FP&A) whereas Prescriptive analytics goes beyond descriptive and predictive models by recommending one or more courses of action, and showing the likely outcome of each decision (Simulations, What-if Analytics, etc.) Leading finance organizations must focus on creating value by increasing their investments in advanced analytics to stay ahead of the curve in terms of innovation and efficient decision making.

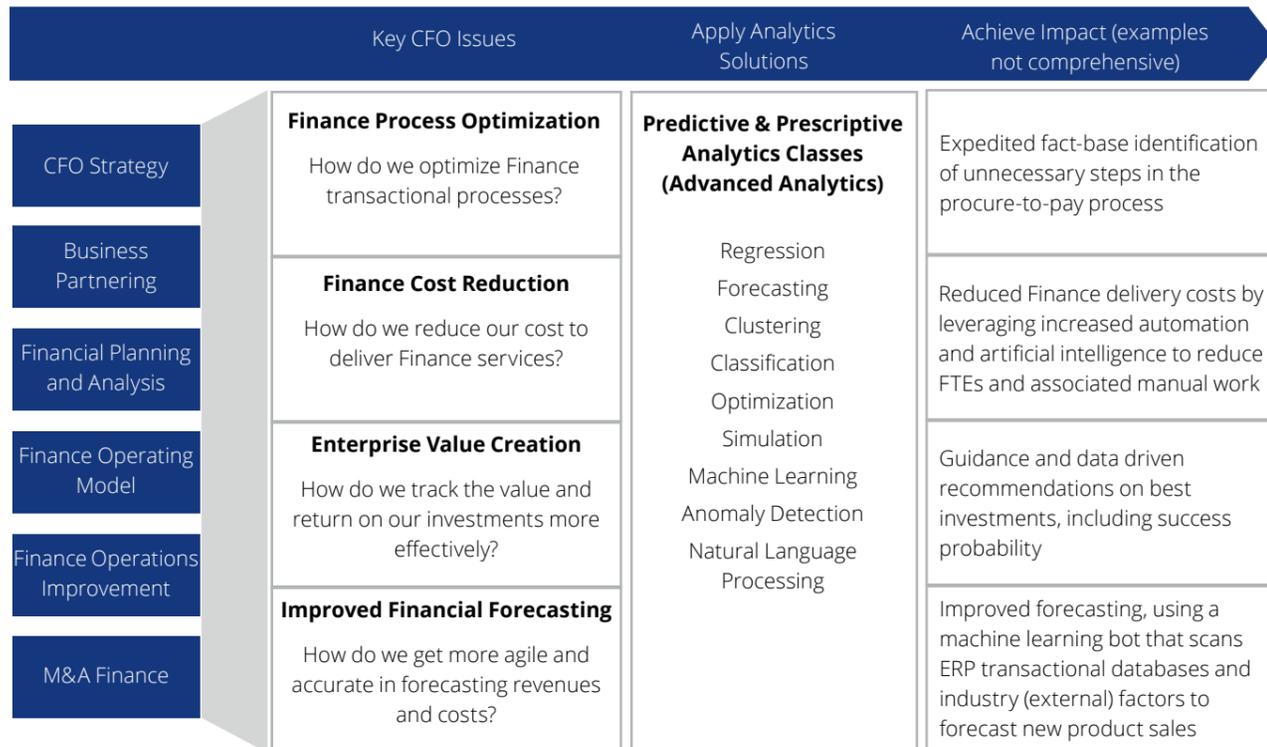
Figure 19: Investment in Advanced Analytics and its strategic impact



**Advanced Analytics in the CFO's office:**

Advanced Analytics help CFOs manage performance in alignment with the business strategy, model business processes, and gain deeper insight into cost and profitability drivers. Plans, budgets, and forecasts become more accurate using analytics tools. This can help finance organizations to better understand the significance of KPIs, and their true relationship to performance.

Figure 20: Pertinent issues faced by the CFOs and how analytics can act as the “Resolver”:



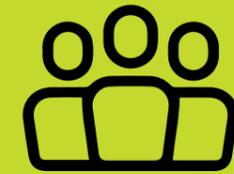
The field of analytics is rapidly maturing; today, there are a library of solutions that address a host of domains that are of interest to any CFO

Figure 21: Advanced Analytics areas of CFO interest

CFO Issue Platform				
	Reduce Cost	Optimize Process	Improve Forecast	Create Value
Analytics Capabilities	Reporting Strategy Analytics	Information and Data Outlier Analytics	KPIs and Scoreboard Analytics	Relevant Benchmark Analytics
	Intercompany & Transfer Pricing Analytics	M&A Performance Analytics	Enterprise Performance Management Analytics	Advanced Planning & Modeling
	Variable and Controllable Cost Analytics	Statutory and Regulatory Analytics	M&A Scenario Planning Analytics	Multi-dimensional Financial Analytics
	Reconciliation Analytics	Integrated Planning Analytics	Enterprise Risk Analytics	Investor Relations Analytics
	Payables/Receivables Analytics	Inventory Analytics	Capital and Project Analytics	Tax Strategy Optimization
	SG&A and Controllable Expense Analytics	Liquidity and Cash Analytics	Asset/Capital Deployment and Planning Analytics	Hedging Analytics
	Close Acceleration and Quality Analytics	Operating Model & Activity Analytics	Equity Research Analytics	Profitability Analytics
	Transaction Processing Analytics	External Reporting Analytics	Driver Analytics	Financial Engineering Analytics
	Revenue Cycle & Recognition Analytics	Balance Sheet and Cash Flow Analytics	Tax Analytics	Analytics Driven Decision Support Analytics

Operational Finance      Business Finance      Specialized Finance

Advance Analytics in action: Indian and Global Use cases



**Case 1:** The HR department of one of the biggest conglomerates in India sought to understand the reasons that drive attrition, the risk of leaving for different employee segments, and business units needing improvement. With an endeavor to become a data driven organization, the company wanted to leverage predictive modelling techniques to identify employees at risk of attrition and deploy HR actions to increase employee engagement. Employee lifecycle data was analyzed using statistical analysis to find which explanatory variables were the most powerful predictors of leaving rates. Factors associated with high risk of leaving and risk areas (business units, grades, ages, individuals) were identified alongside segments with high leaving rates to determine variation in the attrition rate across business units. A predictive model was developed to identify employees at risk and recommend the appropriate HR action to increase his engagement with the company. Key benefits derived included improved engagement levels with employees, reduced attrition and preventive HR policies rather than reactive.



**Case 2:** A global pharmaceutical manufacturer wanted to use data analytics to align its staffing model with the best-in-class standards to optimize its finance service delivery. Several regressions were run with the independent variables to determine the best regression model for Finance FTEs and thereby, helped in right sizing of the organization. The model also enabled the organization to identify opportunities by region and explore options to close the gap and increase staffing efficiencies.



**Case 3:** Using an advanced analytics model, a leading entertainment conglomerate involved in gaming segment was able to better forecast the demand for new games under various pricing, advertising, and social scenarios by genre and platform for each title. It was also able to predict the effects of changes in game prices on the sales of each game. The model was also capable of optimizing the prices to maximize expected profits by game.



**Case 4:** Using advanced analytics and regression analysis, a driver-based budgeting / forecasting model was developed for a healthcare major. This model was capable of comparing various drivers to operating expenses, identified key relationships, and developed a streamlined, enhanced budgeting and forecasting process. Due to better forecasting capability, there was a reduction in variance and thereby, more accurate reporting.

# Mobility

“Information and insights on-the-go”

## What is Mobility?

The surge in worldwide spending on mobile devices along with the superior performance by smartphones which includes mobile wallets, E-commerce, biometrics, GPS, and cameras have caused a shift in the way we operate in our personal lives. Workplaces are also seeing millennials increasing in share as a part of the workforce. This has resulted in more employees expecting the same seamless experience provided by the smartphone at the work. Moreover, it has led to a transformation of business models and rise in expectations across the value chain.

Enterprise Mobility Management is the set of people, processes, and technology focused mobile devices, wireless networks and other mobile computing devices to allow mobility of workers, corporate data, and information.

Several organizations who have embarked upon their Digitalization journey, view enterprise mobility as a critical aspect in their operations and expect it to be one of the top IT investments. Implementation of Bring Your Own Device (BYOD) policies would lead to higher employee satisfaction through increased productivity, higher engagement after work hours, and collaboration. This can also reduce costs and maintenance efforts for the IT function. The implementation of mobile policies increases the infrastructure requirements multifold to manage new devices, services, and connectivity models. Traditional approaches are inadequate to support mobility as the number of apps explodes, and the development and distribution of those apps requires new skills, new processes, and new platforms. Each new mobile device introduced in the enterprise has consequences on the cost and performance of the IT environment.

Cybersecurity is one of the major concerns as the decentralized access of corporate data is an element as crucial as the decentralization of work. Businesses might also have to consider aligning their mobility strategy in order to collaborate with external parties like suppliers, distributors, and even customers who might have their own BYOD policies in place. This is a long and difficult journey and requires cross functional collaboration.

The top three areas in which companies are investing in to achieve their mobility are in building and deploying new applications for customers and employees, infrastructure upgrades more aligned to mobile cloud principles, and reengineering business processes to best take advantage of mobile platforms and work styles.

## Mobilization of the Business Process

Mobilizing the business process means taking existing business processes and optimizing them to be used on mobile devices. This could involve every line of business within an organization. Companies would need to carefully analyze each business process to determine the most suitable ones to be mobilized, and therefore maximize the ROI. Also, mobilizing the business process can be a complex technical challenge for some organizations. It will require procuring additional software solutions or reengineering existing solutions, or sometimes both. The additional cost of which can become a barrier from gaining stakeholder buy-in.

Organizations should take a proactive approach in trying to take on these policies to drive maximum value out of enterprise mobility, rather than a reactive approach in trying to avoid employee dissatisfaction from lack of agility.

More than 60% of organizations are still in the process of making existing IT assets mobile-enabled; 30% are using mobility to re-define existing business models and drive incremental revenue streams.



**Mobilization across the Value Chain**

Mobilizing across the value chain involves collaboration between the organization and its value chain partners. Mobilizing the channel can streamline the entire value chain operation, allow quicker time to market, and resolve issues before they become problems.

Employees showing highest demand for BYOD policies are those who serve external clients, those who like to use the latest technology in their personal life, and those who connect to the internet while traveling. For customer facing functions such as Sales, Marketing, and Services, mobility can help employees connect better with customers and help in faster issue resolution. In terms of sales, it helps the employees to track and maintain leads and get real time competitive information and for customers, it could help in purchase by enabling connectivity through multiple channels.

**Mobility in the CFO's office:**

Enterprise mobility is gaining acceptance in the finance functions as many finance leaders realize that the demands of the millennial workforce cannot be met without smart mobile solutions. Some of the areas where Mobility is becoming mainstream in Finance are:

- i. Use of mobile apps for managing the full cycle of travel management—booking trips to submitting expense claims and getting notified on reimbursements. Many providers are now offering mobility as a USP for their travel solutions.
- ii. Workflow approvals for Accounts payable processes, including exception approvals, are slowly gaining acceptance and are believed to be on the cusp of an explosion through mobile leverage.
- iii. Workflows can also be applied for approvals for changes in master data; e.g., vendor master changes often require multiple parallel approval layers.
- iv. With mobile wallet payments becoming main stream in India, it is only a matter of time when corporate payment solutions for B2B payments can also get on to mobile app-based payments.
- v. The biggest use of mobility in Finance today is in the use of dashboards and reporting, where most BI solutions are coming with an embedded mobile enablement option. Many corporate leaders are now demanding mobility in reporting to be an essential ingredient of an enterprise information management strategy.

**Mobility in action: Indian and Global Use cases****Case 1**

A two-wheeler manufacturer felt the need to capture the spare parts orders through a mechanism which was readily available with parts distributor executives. Accordingly, they developed a mobile app which was integrated with the company's CRM platform for channel partners. With this app, a customer is assigned an executive based on the executive-wise tagging of the customers created on the CRM. The app empowers the executive to check the stock and price of any part on the fly. The app has the complete list of parts and also included minimum order quantity and price, which is readily available with the executives. With this information, executives could commit on the delivery of parts.

**Case 2**

A mattress manufacturer was facing an issue of unauthorized dealer selling. Due to unauthorized selling, they faced a loss of 5-7% in the top line. As that specific mattress brand (under which there was unauthorized selling) operated at an average margin of 15%, loss of 5-7% affected its bottom line. The company decided to deploy a Radio-frequency identification (RFID) chip in the mattresses for tracing the product supply source for an unauthorized dealer. The RFID technology was then integrated with their home grown ERP, so that the unique product number could be stored for production slip generation and MRP label. Handheld mobile devices with RFID readers were then provided to mystery customers, so that they could carry it to an unauthorized dealer to collect the unique product numbers online. Once the serial numbers were collected via RFID readers, the dispatch history of the product movement could be known very easily. The product supply source, i.e., the distributor or the dealer who had sold the product to an unauthorized dealer was easily identified. With the implementation, the company was able to reduce unauthorized selling by nearly 50%.

# Visualization

“A picture is worth a thousand words”

## What is “Visualization”?

Organizations today have several sources of data which come in different forms. The data repository coming in from these sources needs to be optimally used and presented to the management for effective decision making. Finance as a function churns out large amount of data which can be used by the rest of the business in an easily digestible form.

Data visualization helps the business to understand the significance of data by placing it in a visual context. Text based data is replaced by advanced visualization tools which might include patterns, trends, and correlations that might otherwise go undetected.

A software with visually appealing graphics and user friendly navigation can be an effective way to decipher the data into meaningful information. Visualization tools can bring analytics solutions to the enterprise faster, enabling rapid prototyping that reduces development time. These tools also allow companies to “see” developing stories that directly address decisions that matter.

## “Visualization” in the CFO’s office:

Visualization is fast catching up in industries such as Financial Services, Manufacturing, and Telecom companies dealing in large data from multiple sources. These industries are looking at utilizing the advanced tools in the Business Finance domain which includes the entire Enterprise Performance Management suite. Visualization in Strategy formulation, Planning, Reporting, and Intervention is a very strong value proposition for CFOs who are fast assuming the role of a strategist.

**Beyond Spreadsheets:** Traditionally management accountants have been using standard charts and graphs used in spreadsheets, in some cases advanced macros and more sophisticated infographics, heat maps, bar charts, pie charts, dials and gauges etc. which helped decipher data into meaningful visual insights. Organizations are now exploring modern visualization tools which have interactive capabilities, with drill down options for further querying and analysis. We are seeing a generational shift from Business Intelligence (BI) reports to more of graphics and visuals and even amenable to mobile devices. Organizations are looking for BI tools which offer visualization technology as a key feature. In the near future, we will see advanced spreadsheets complemented by BI tools with certain soft automation features on the presentation layer.

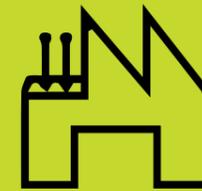
## Intuitive and Intelligent Visualization:

Some organizations are also exploring advanced features of Visualization. To effectively synthesize the complex information available, they not only need a powerful business analytics/BI but also an ‘intuitive and intelligent visualization’ capability. An intelligent visualization is one that is in alignment with the organization’s key objectives and provides a unified but multidimensional view of performance. The changing role of CFOs in India requires them to have these much needed tools to give a unified view of affairs across all functions in order to support strategic decision making. This unified view allows all stakeholders to shift their frame of reference and look beyond their own siloes to understand the implications of their actions on the organization’s overall

Advanced visualization tools have been implemented by nearly 30% of the companies we surveyed, with another 12% reporting they are evaluating or piloting the technologies.

objectives. While business analytics helps them to dig deeper and discover causalities, visualization helps them to truly comprehend the performance drivers, look at organization-wise impact, and communicate the insights to different stakeholders in the most effective way.

## Visualization in Action: Use Cases

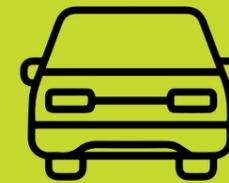


### Case 1:

An automobile financing holding company in India embarked on a Business Intelligence (BI) journey and invested in building a data warehouse and a BI solution with the following top three business objectives:

- To create a single version of truth and eliminate any chance of conflict between metrics reported by various functions, providing accurate and consistent data.
- Enabling faster decision making by making the data and analysis capabilities available with business stakeholders.
- Eliminating manual process for collating and validating data, empowering business with more time available to perform detailed analysis to get actionable business insight.

An enterprise reporting solution was built in SAS Visual Analytics tool which catered to 150 reports and dashboards for various different analyses covering six core functions: controlling, operations and credit, accounts, risk, sales, strategy and marketing, and products. This solution also had the capability of self-service analysis for the business for any ad-hoc business requirement.



### Case 2:

A global manufacturer wanted to improve the speed, consistency, and quality of information decision-makers were receiving, specifically so they could analyze problems more quickly. The company created dashboards that were positioned on the production floor to show when there might be an imminent bottleneck in the production process. With these visual tools in constant sight, managers could quickly reallocate people and resources to avoid costly slowdowns.



### Case 3:

Using visualization tools, executives at a global bank are now able to analyze financial data more efficiently using interactive, integrated reports. The reports allow executives to drill down into leading and lagging performers across different periods and compare scenarios, such as actual financial metrics to budgeted metrics.



### Case 4

A health services company faced challenges reconciling information across reports, with little ability for executives to customize information or dig deeper into the data. With visualization tools, the company now delivers easy-to-use trend analyses and KPIs that provide insights into variances and root causes.

# In-memory Computing

“Promises a massive gain in speed”

## What is In-Memory Computing?

Dealing effectively with digital information requires a technical architecture that can handle massive data sets, without sacrificing availability or timeliness. That is what in-memory technology can deliver. Key applications include transaction processing, event processing, distributed caching, and scenario modelling.

In-Memory computing enables Finance organizations to have significantly high access speed to access and analyze high volume of concurrent transactions. It provides automated notifications in real-time to enable better decision-making. Further more advanced features enable dynamic big data calculations in milliseconds.

For many future data management needs, in-memory will likely be an indispensable tool. The explosion of information streaming in from the Internet of Things alone could make In-memory a critical capability for companies undergoing a digital transformation.

From the hardware-based point of view, data analysis consists of three components; **the processor** to perform the calculations, **the storage** to store the (manipulated) data, and **a system** that transfers data between the two. Naturally, the slowest of these components is the bottle-neck for the performance of IT-based data analysis. More specifically, it is not the latency of random-access memory but the latency of hard disks. Processing power is not used to full capacity because the data to be processed is not retrieved fast enough from hard disks. In Memory

Computing (IMC), in a nutshell, is **moving data which has traditionally been stored on hard disks into memory**. By focusing on pure hardware characteristics, latency is dramatically reduced. Consequently, the process of data analysis is subject to a tremendous speed-up.

## “In-Memory computing” in the CFO’s office:

While significant complexity is typically encountered across Finance, there are some areas in which it can be crippling. Multiple ERP systems are one culprit, for example, impeding the organization’s ability to pursue swift, focused innovation cycles. Managing working capital—including DSO (day sales outstanding), cash flow, and cash position—are perennial challenges. Complexity also plays a major role in long closing cycles and can thwart the finance team’s ambitions to tap reliable finance data at any time, on demand.

IMC can be effectively used in the finance function to work with detailed **projections for unit sales and revenues** at the stock-keeping unit (SKU) level. IMC systems allow multi-dimensional scenario testing by interactively exploring the financial and volume implications of price changes in specific geographic markets or channels. Analysts are able to determine almost instantly the **impact on profitability, inventories, and cash flow** of specific actions. An IMC analytics system can run several different sets of assumptions or scenarios in a matter of minutes, compare results, and enable those involved to knowledgeably discuss the best approach.

## In-Memory Computing in Action: Indian and Global Use Cases



### Case 1:

A transportation company carried more than 23 million passengers each day on more than 12,000 trains. Using legacy technology, the company could handle no more than 40,000 concurrent internet users, many of whom spent up to 30 minutes trying to book tickets online. With in-memory technology they can now handle more than 120,000 concurrent users. Completing a reservation now takes mere seconds.



### Case 2:

A retailer used in-memory as part of a multi-year program to modernize their aging financial systems environment. The company’s legacy budgeting and forecasting system was more than 20 years old, and was heavily dependent on spreadsheet templates and supplementary schedules. Their solution was a new system with the ability to drill down from totals to transactional detail. The system delivered better analysis, reduced time spent on financial processes, and enhanced output view options.



### Case 3:

An insurance company wanted to transition to a new finance platform to improve and standardize financial processes. Using in-memory technology, the company was able to gain near real-time access to data to enable analysis and support decision-making.

# Blockchain

“Building digital trust”

## What is Blockchain?

Blockchain is a protocol for exchanging value over the internet without an intermediary. Blockchain technology allows for the secure management of a public ledger or database (also referred to as a ‘distributed ledger’), where transactions are verified and securely stored on a network without a central governing authority.

Blockchain offers the storage of immutable records of transaction data through distributed networks. It retains the full history of transactions, which makes them verifiable and independently auditable. It also enables peer-to-peer transfer of value, eliminating the need for intermediaries. In addition, event triggered programmable contracts, also known as smart contracts, can be stored and executed on the Blockchain.

The Blockchain is believed to have the similar disruptive potential that the internet had in the 1990s. Just like the internet revolutionized the exchange of information, Blockchain is believed to revolutionize the exchange of value. Clearly, most business leaders and CFOs are intrigued by the promise of the Blockchain technology.

## What is so powerful about this new technology?

There are several intrinsic features of the Blockchain that lend it its power and allows it to record and transfer value over the internet in a peer-to-peer manner:

- 01. Near real time:** It enables near real time settlement of recorded transactions, removing friction, and reducing risk.
- 02. No intermediary:** It is based on cryptographic proof instead of trust, allowing any two parties to transact directly with each other, without the need for a trusted third party.

**03. Distributed ledger:** The peer-to-peer distributed network records a public history of transactions, making Blockchain distributed and highly available.

**04. Irreversibility:** It contains certain and verifiable record of every single transaction ever made that cannot be altered without altering the entire chain. This prevents double spending, fraud, abuse, and manipulation of transactions.

**05. Censorship resistant:** Crypto economics ensures that Blockchain continues pumping out new blocks and that blocks are not being reverted or altered.

The Gartner hype cycle puts Blockchain technology just below the peak of expectations, which means that experts still see another 18-24 months before this technology becomes main stream. Most industry experts and pundits concur, but would rather see it moving quickly beyond proof-of-concepts (POCs) into production sooner rather than later. While significant investments (over \$1.4 billion in the last 3-4 years) have already been made into the Blockchain ecosystem, a lot still needs to be seen. Several companies have done POCs globally, with financial services industry leading the way. The leading global banks have been actively working together in the Global Blockchain consortium R3, which is a consortium partnership of over 80 of the leading financial institutions and regulators led by R3, a distributed ledger technology firm. There are several use cases around global money movements (payments and remittances), trade finance, digital identity, smart contracts, and several others that have been established and leading firms are investigating into.



## Blockchain in the CFO's office:

The key question facing CFOs is how to evaluate the potential and the business case for Blockchain for their respective businesses and help the C-suite make the right level of investments in the technology, before it is too late. The

global economy is quickly moving towards platform-based shared business models driven by technologies such as Blockchain. Therefore, it is not just the CIO who should be leading the discussion at the C-suite for Blockchain, instead the CEO and the CFO, who can lead the conversation of investing

in new platform-based technologies, such as Blockchain, that have the power to disrupt entire business models. And, this is very much in line with the CFO's role of a strategist for the organization.

As it relates to the CFOs' roles of being

**Figure 22: The four faces of the CFO in a Blockchain(ed) world**

Blockchain technology is expected to deliver significant, industry-scale efficiency gains through innovation that will disrupt existing Finance ecosystems

### Redesigning performance management

With a private distributed ledger, it is possible to measure, validate, and reconcile all transactions within an organization to measure performance almost real time

### Transforming how Finance provides organizational leadership

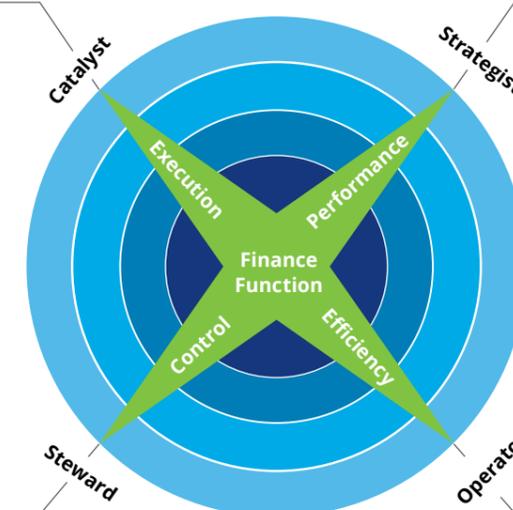
The adoption of Blockchain technology and industry-level systems of record will change the way Finance provides leadership to the organization

### Reforming asset preservation and reporting to stakeholders

The immutable, verifiable, and digitized model of proof-of-existence will transform management of critical assets and reporting to internal and external stakeholders

### Evolving risk intelligence gathering and application

Real time awareness of value transfers in and out of the organization will provide risk intelligence to executive strategic and financial objectives



a catalyst, steward, and operator for the organization, there are several specific use cases where the Blockchain technology can prove to be useful for the Finance function. Some of these are listed below:

- Planning, Budgeting, and Forecasting
- Inter-company reconciliations
- Financial Audit
- Vendor Management
- Shareholder Voting

**Budgeting and expense management:**

Conducting the budgeting and expenses on a Blockchain involves placing the entire budget data on it and allowing the transfer of value (, i.e., money) on it to the various parties connected with the Blockchain. It will create an audit trail for each and every dollar/rupee spend, providing greater transparency and internal accountability.

**Consolidations and inter-company**

**eliminations:** With the record keeping and transaction management features of Blockchain, it can easily hold the financial transactions for the group companies and aid consolidation of the financials for the group and elimination of inter-company entries. The Blockchain does not work on the double entry book keeping system, instead it maintains a single records ledger for all transactions. The immutable nature and the historical record maintenance will facilitate accurate consolidation of financials, enforce documentation of intercompany transactions, and promote intercompany synergies.

**Financial audit:** With a company using the Blockchain to post every transaction on the Blockchain in real-time, the nature of financial audit will change completely. Instead of having quarterly or annual audits by external auditors, the company could look to audit its financials on a daily basis and that too internally. Financial audits on a Blockchain may eliminate the need for third party validators, reduce audit expense and costs for books maintenance, and provide better governance and transparency.

**Requisition and vendor management:**

Blockchain's ability to hold assets, transfer titles and value, and execute smart contracts will make it possible to create requisitions and manage vendors. Vendor data and identity can be easily held and verified using the digital identify feature and smart contracts can execute automated remittances and payments, reducing vendor cash conversion cycle, eliminating the need for reconciliation, and promoting efficient vendor management.

**Accounts payable process:** Upon addition of a vendor's digital identity to the Blockchain and the negotiated terms on a Blockchain smart contract, using shared sub-ledgers, vendors can see the requisition requests in real-time. Smart contracts can track individual assets to document their provenance, track their ownership, combat frauds, and initiate automated payments. As a result processing time will be reduced and security can be enhanced. The system will also eliminate the need for reconciliation of PO and invoices; and drive better vendor relations.

**Shareholder voting:** Shareholder voting system can deploy the Blockchain to record the ownership of securities, and issue voting right assets and voting token assets for each shareholder. To exercise the vote, a user may spend voting tokens to cast votes on each meeting agenda item if they also own the voting right asset. This system has been tested by NASDAQ in a trial conducted in Estonia. Clear benefits of such a system include: increased transparency due to reduced manual intervention, greater trust in the corporate decision making, and better investor relations and shareholder participation. Recently, Reserve Bank of India (RBI) has published a white paper on the potential use of Blockchain in India, based on a proof-of-concept testing the end-to-end technology play in the interbank remittance process. The whitepaper concluded that the proof-of-concept provided an overall good demonstration of the use cases and helped broaden the understanding of the technology and potential end uses. It is expected that RBI will stay in step with the global adoption of Blockchain for accepted mainstream usage by monetary authorities around the world and this technology will gain credence and usage soon. For the finance leaders, this is a profound transformation in the horizon upending the traditional double entry accounting protocols and driving significant efficiencies and economies. There are many unanswered questions still such as revenue recognition principles for a Blockchain transaction. It is only expected that the ecosystem supporting Blockchain will gradually fall in place as the regulatory framework evolves.

**Blockchain in action: Indian and Global Use cases**



**Case 1:**

A leading consumer equipment manufacturing company in India has started using Blockchain to make payments to their suppliers. Earlier, the process was cumbersome and involved several steps that included confirmation of delivery by the company, raising of a physical bill of exchange by the supplier, and submission of invoice and transport documents to one of India's leading banks, for payment.

After the implementation of Blockchain, the details of invoices processed in the company's Oracle system get transferred to the bank on the Blockchain, and then are discounted and funds are disbursed to the vendors of the company. On the due date, the solution facilitates an automated debit from the company's account maintained with the bank. The entire process cycle for bill discounting has come down from four-five days to almost real time; entire audit trail is maintained and transactions have become completely paperless.



**Case 2:**

A global e-commerce company is offering a different approach to online retail by connecting buyers and sellers directly. The open-source project is creating a decentralized network for peer-to-peer commerce. Instead of visiting a website, users download and install a program that directly connects them to other people looking to buy and sell goods and services, removing the middlemen altogether.



**Case 3:**

A bank in Japan has completed a three-month trial on the application of mijin (a platform for creating Blockchains) to its accounting systems in a real-world environment. In the demonstration, 2.5 million virtual bank accounts and an environment with capacity to process 90,000 transactions every hour were created, with significantly reduced risk of failure and fraud.

# Internet of Things (IoT)

"Sensor and sensibility"

## What is IoT?

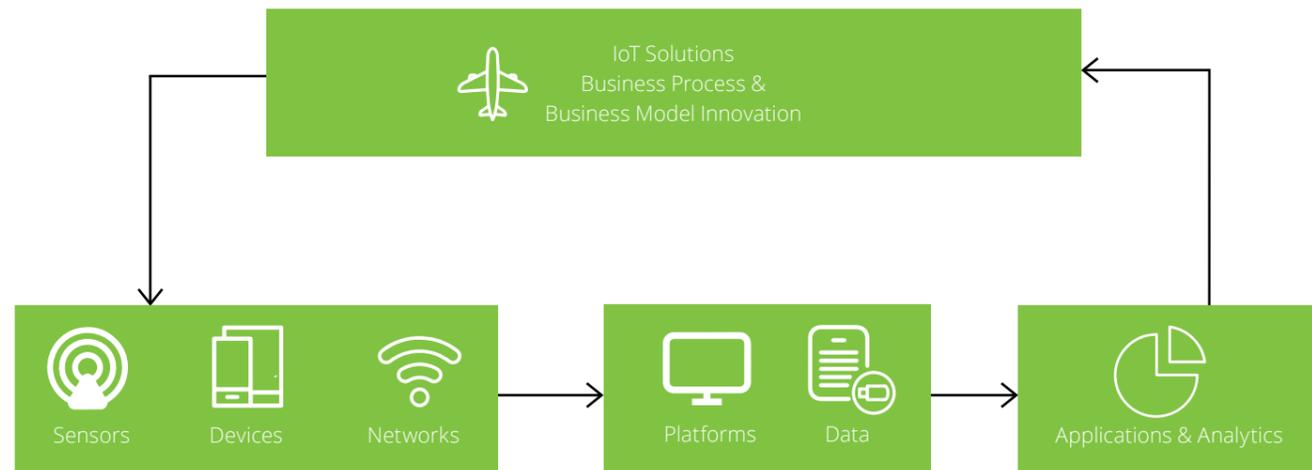
IoT refers to a world of intelligent, connected devices that enables machine-to-machine or machine-to-human interactions in a seamless platform, thus generating boundless possibilities for automation and efficiencies. It is not only about interconnected devices, but also the aggregation, relationship, and analysis of information that is created to take action on the situation and also the changes in business or technology landscape required to use the data and the analysis. Depending on the applicability, it can either be Industrial (Manufacturing, Transport, Automotive, etc.) or it can be Consumer (Health & Fitness, Infotainment, Security & Safety, etc.)

Irrespective of the type, the figure below indicates the interconnected technology architecture of IOT where sensor networks feed data architectures, which can then

be analyzed to reveal hidden insights that inform decisions and actions. Every IOT network generates invaluable data sets that can be analyzed to provide never-seen-before insights on patterns and behaviours.

The other unacknowledged contribution that IoT offers is laying down the foundation for what is called the Internet of Things "stack". The foundational layer is the most talked about, however, the true value lies in what is done with IoT information. As data generated is continuous and fast flowing, there must be simultaneous processing of data for actions to be taken based on most recent data. IoT in its isolation is an exponential disruption for business operations- coupled with the power of Analytics and Machine learning, the sea of data from IoT sensors can drive incredible insights for agile decision making in all spheres of business operations.

Figure 10: Inter-connectedness of IOT architecture



**IoT in the CFO's office:**

Clearly, three underlying themes are driving the change in the way Finance operates today:

**01. Emergence of new 'as a service' business model:**

**business model:** Riding high on the availability of data through Industrial IOT, new business models have emerged. Traditional product companies are making business model shift that requires them to develop and flex their service muscles to create value for the end consumer.

For example, New Billing Models will emerge complimenting the business model, which will call for commercial/pricing models to be innovated. This would further have ramifications on taxation on the bundled services.

IoT in Finance:

- Evaluate applicability of usage based billing;
- Assess awareness of how accounting standards apply, both in terms of revenue and cost recognition;
- Evaluate potential opportunities where bundling of services can be applied;
- Understand implications of Indirect tax applicability and tax incidence as the organization migrates to the new model.

**02. "Data" as a new capital:**

The convergence of machines, internet, and technological innovations has resulted in the creation of a new capital "Data" which generates large volumes of accurate data at a low cost.

**IoT in Finance:**

- Instant and ceaseless inventory control would become ubiquitous through data feed via IOT. Asset tracking is an established benefit from IoT. Further, IOT envisages a

continuous data feed to ERP with minimal or no human intervention that can be used to track re-order levels, raise purchase requisition, etc. Physical verification of stock taking is a potential area that can be automated for inventory reporting, management during financials close process.

- IoT enables predictive maintenance model and the capability of connected devices to upgrade patches/download new features making products more robust and appreciate its value while in service. This will facilitate ascertaining fair value of assets and accounting for depreciation.
- Some complex accounting calculation can be simplified. With inter-connected devices, asset tracking and consumer usage data are made available, that were not available in the traditional way of operation. With data made available, conventional ways of accounting computations should be relooked at a more pragmatic approach.
- IoT can be used in efficient Working Capital Management through use of sensors to track RFID tags placed on products moving through supply chains, thus improving inventory management while reducing working capital and logistics costs.

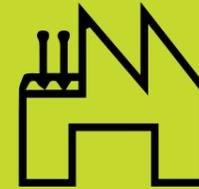
**03. Analytics for better decision making:**

The key to success in today's world lies in how fast data is turned into information and decision is based on the analysis made on the information. Up-to-date analysis for decision making is important for the company to understand risks and opportunities and take immediate actions to gain a competitive edge. This is called "Analytics of Things".

Some typical analytical applications are comparatives for driver's data, situational awareness, understanding patterns etc.

The biggest value of IoT adoption lies in the information generated by sensors and connected devices which generates abundance of data and lays down foundation for a strong analytics application. The insights from data are used to recommend action or to guide decision making rooted in business context and aligned to business strategy. Deploy full spectrum of Analytics from basic predictive to prescriptive to capitalize on the data sets generated from IoT ecosystems such as:

- Employing **What-If analysis** based on the drivers will significantly enhance the decision making agility and allow Finance to play an enhanced role as a business partner. Moreover, as volume of data increases it can also lead to generation of new scenarios which currently are based on experiential learning.
- Visual Analytics** approach can take existing capabilities to another level by unlocking complex insights that are lost in traditional reporting and by focusing on biggest business issues.
- Tax analytics** uses granular enterprise data as the foundation for tax decisions. The objective is to enable deeper fact-based taxation related decision making processes to gain insights.
- Risk analytics** can help in establishing a baseline for measuring risk across the organization and offer executives clarity in identifying, viewing, understanding, and managing risk.

**IOT in action: Use cases****Case 1:**

Factory floors in the plants operated by one of India's leading conglomerate use the Intelligent Plant Framework that connects every machine node in the factory and understands the rate of work and efficiency. The aim of the framework is to let businesses reduce waste and organize production flows by providing real time analytics based on large sets of data collected from disparate machines on the production floor. Various types of analytics performed on the data were collected—financial impact analysis, utility consumption analysis, downtime analytics, machine capacity analysis, WIP inventory analysis and so on. The key benefits derived included higher efficiency derived from machines, on-the-go visibility to the output on the shop floor and waste reduction.

**Case 2:**

A leading oil marketing company in India has revolutionized its entire supply chain through IoT solutions like retail outlet automation systems, tank farm automation systems, terminal automation systems, vehicle tracking systems, surveillance, and access control systems and even the Supervisory control and data acquisition (SCADA) systems used in operating facilities like cross country pipelines and the refineries. In all these systems, sensors installed in field units capture state information like temperature, pressure, flow rates, density, product levels, GPS coordinates, state/condition of devices, speed and such physical attributes. These attributes are captured and used for both monitoring the processes as well as controlling these systems. Key benefits included visibility into the entire supply chain, better issue management, and improved efficiency.

**Case 3:**

Owing to the benefits of Internet of Things technology, a leading flexible packaging company deployed Low Energy Bluetooth Beacon in its production lines to transmit two way information, using sensors for uniquely identifying the object, managing inventory real time, and location tracking. This was done to avoid inventory mismanagement — a mismatch between the physical inventory that was in the warehouse and the system inventory that was in the enterprise system. The reason for the mismatch was that when the material was being moved physically it was not getting tracked real time inside the enterprise system. With the deployment of Bluetooth Beacon, the effort involved in inventory management dropped by almost 80 percent. The number of customer complaints also went down by 40 percent.

## The Octagon of Exponential technologies: Maturity in India

Most of these technology tools with advanced features have been launched recently in India. More and more organizations are adopting the tools first as a “Proof-of-Concept” before venturing into a full-fledged roll out. The table below summarizes the level of maturity and mobilization complexity for each of the elements specifically with an India context.

Figure 23: Maturity in India (April 2017)

	Level of Maturity	Benefits	Friction
<b>Visualization</b>		Visualization tools help depict the analyzed data in a user friendly manner. Patterns, trends, and correlations can be displayed in an easily digestible manner for efficient decision making	New skills required in Finance; integration with disparate systems for data structuring
<b>In-Memory computing</b>		Exponentially faster transaction and BI processing allows moment in time close and performance analysis; allows organizational data to be mined in real time to support business strategy	Requires organizations to refocus processes to support shorter cycle times; adoption is still in early stages
<b>Blockchain</b>		Distributed ledger allows increased transparency of transactions, reduced auditing burden, and changes payment processing (AR/AP)	Early stages of adoption; commercially viable products are still evolving
<b>Robotics</b>		Automation of low, medium, and high complexity processes resulting in operational efficiency gains of x3 to x10 depending upon application; bots learn from new stimuli and evolve as new scenarios are presented	Highest ROI can be found in transaction intensive processes. Integrating RPA and cognitive predictions is at the leading edge of applications and requires Finance to develop new skillsets
<b>Internet of Things</b>		Using sensors for identification of all physical objects with the potential to dramatically reduce the cost of tracking inventory and these objects across the supply chain. This can also help in generating predictive information	Early stages of adoption; commercially viable products are still evolving. However, many local applications in warehouses and inventory management in retail is already well underway
<b>Cognitive Computing</b>		Deeper insights allow Finance to enhance business capabilities and move to granular exception management; can be a driver to improve enterprise value and increase speed to insight	Cross disciplinary support required to develop and manage technological and analytics platform; new skills are required in the Finance organization
<b>Advanced Analytics</b>		Predictive analytics helps in accurate forecasting, better risk management, and improved customer offerings using statistical tools and modelling techniques. Deeper insights allow Finance to better forecast risks and opportunities	New skills are required in Finance; additional investments required to build advanced analytics capabilities
<b>Mobility</b>		On-the-go real time information available with finance organizations will allow faster turn around time and efficient decision making	Integration with multiple legacy systems and cross disciplinary support required for effective implementation



# Developing a Digital Culture in the Organization

## “Embrace the change”

Preparing for a digital future is no easy task. It means developing digital capabilities in which a company’s activities, people, culture, and structure are in sync and aligned toward a set of organizational goals. Most companies, however, are constrained by lack of resources and talent, and pull of other priorities, leaving executives to manage digital initiatives that either take the form of projects or are limited to activities within a given division, function, or channel. Despite

this, some companies are transcending these constraints, and achieving digital capabilities that cut across the enterprise.

Organizations embracing Digitalization are making conscious efforts to create a “Digital Culture” which is not only robust but perpetually sustainable. Some have embarked upon a structured Digital journey by establishing a dedicated team or a Digital Centre of Excellence (DCoE) which manages the people, process, and

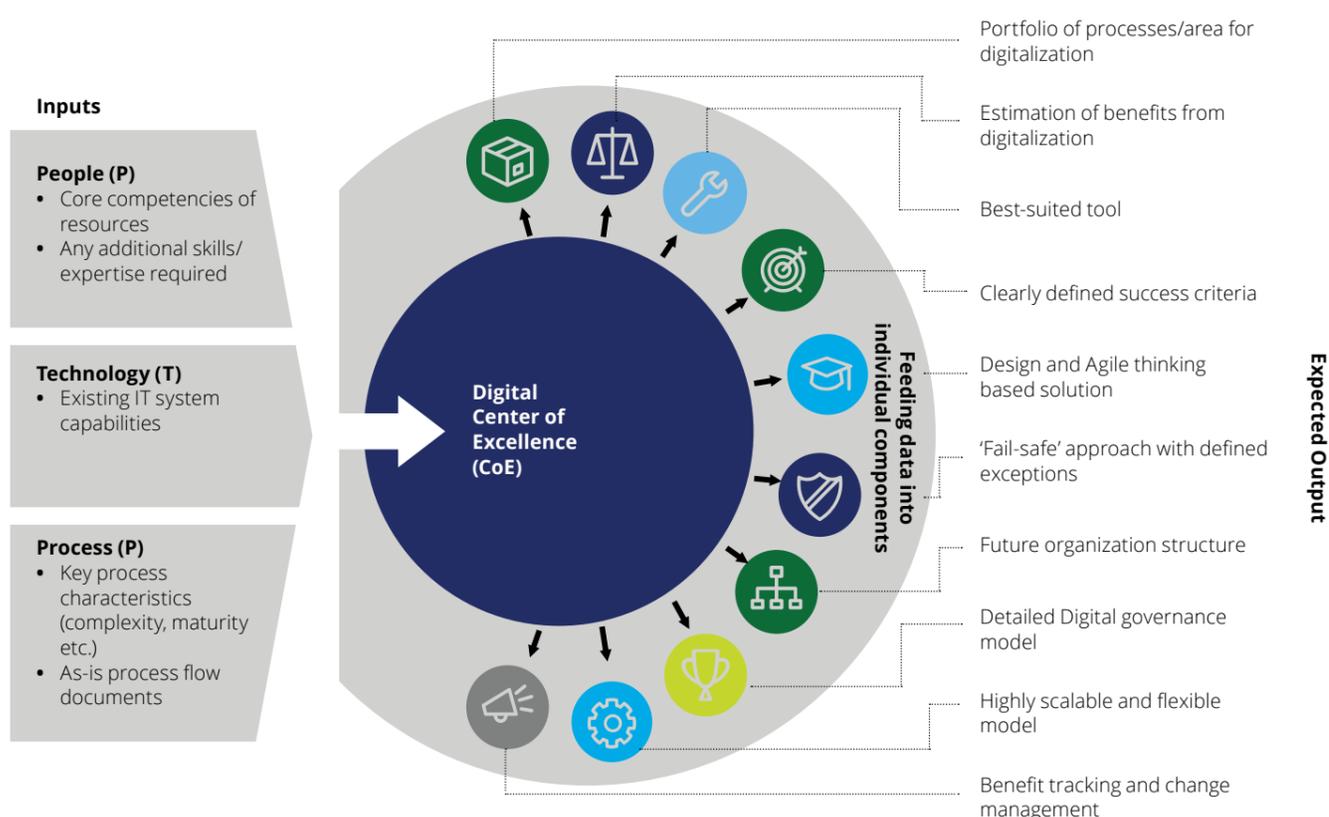
technology aspects of Digitalization. The DCoE has specific expected outputs which include identification of organizational needs, developing a portfolio of processes or areas for digitalization, developing a business case, selecting the right tools, developing an agile methodology, a revised organization structure, and a robust governance structure.

Organizations are responding to an increasingly digital market environment by adding roles with a digital focus or changing traditional roles to have a digital orientation. The list of “digital” business roles and functions is extensive and growing. There are now digital strategists, chief digital officers, digital engagement managers, digital finance managers, digital marketing managers, and digital supply chain managers, among other positions. From a technology perspective, digitally matured organizations are seeing significant synergy between IT and functional teams. The CIO has a key role to play in the functioning of the CoE and development of the Digital roadmap.

Following activities are typically performed in creating a robust governance framework:

- a. Setting up a dedicated governance team
- b. Identify digital opportunities
- c. Analyze, standardize, and optimize processes for digitalization
- d. Identify training needs for the CoE team members
- e. Facilitate participation in training programs for various Digital Tools implemented/planned to be implemented
- f. Facilitate participation of the CoE team members in
  - Publishing standards and best practices
  - Ensuring smooth running of operations of processes
  - Enforcing change management policy
- g. Involve the CoE team members in managing Digital Strategy
  - Refining strategy
  - Monitoring and reporting progress on activities planned

Figure 24: Elements of a Digital Centre of Excellence



Governance plays a very important role in establishing a robust, sustainable plan for an organization’s Digital journey. The Governance framework of rules and practices ensures accountability, fairness, and transparency in the process of Digital implementation and ensures a steady state.

# From Acuity to Acumen

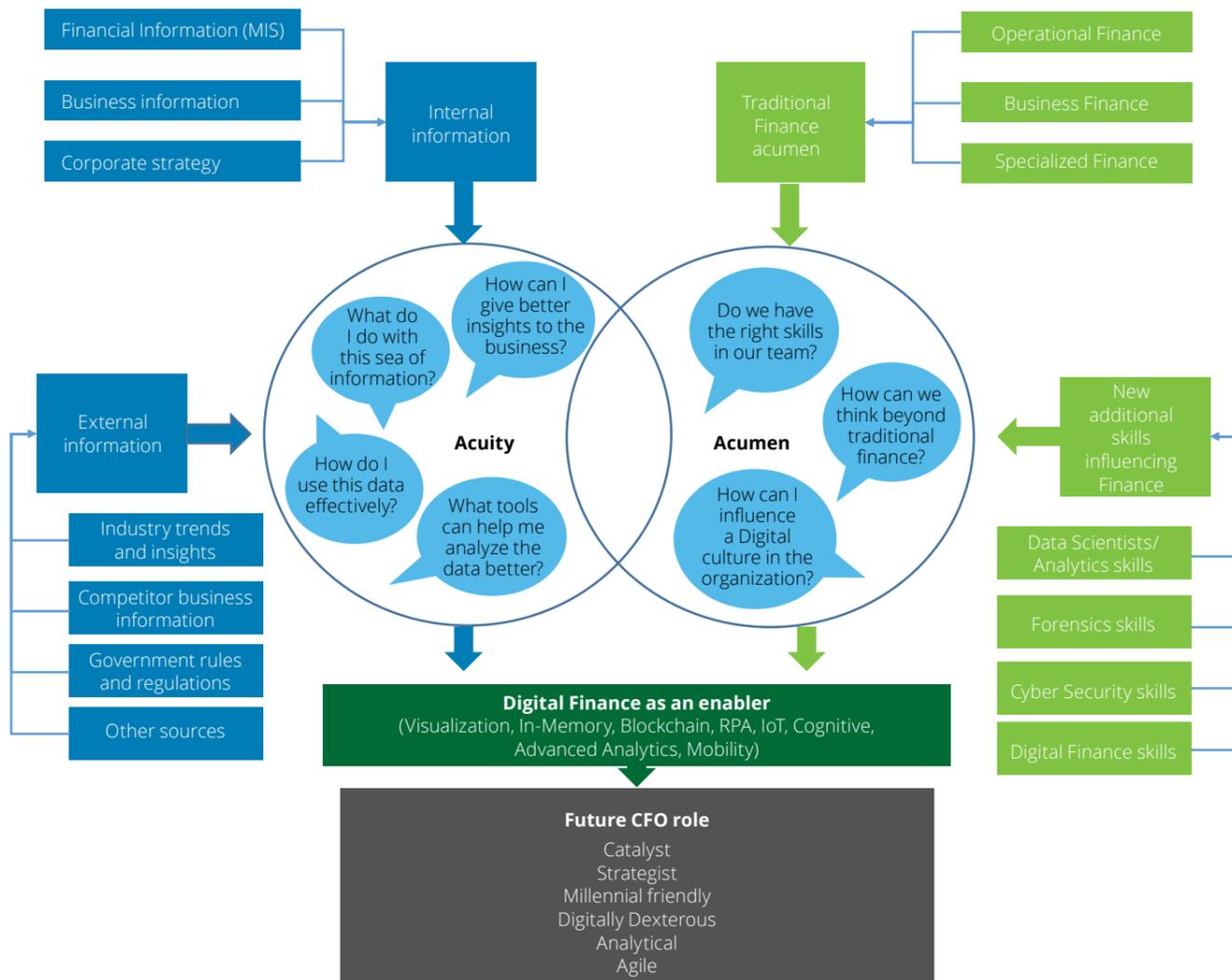
“A paradigm shift”

**Acuity defined:** The Oxford Dictionary defines Acuity as “clarity or insights”. The requirement for Finance to be a business partner had always been there. Over the last 10-20 years, that requirement got reinforced further because of significant global economic events. So, that led to a particular reinforcement of the fact that Finance cannot anymore be just the score

keeper or shepherd as it was called in the past, it needs to be a business partner. But what we see in the last three years is a direct shift even from that paradigm. Today, the requirement from Finance and Finance Leaders in particular is to demonstrate much higher level of intelligence, insights, based on information. That is an element that we call acuity.

The velocity of change that we see today in the world of Finance is mind boggling; changes are happening at two very specific levels. We can call them “changes of acuity” and “changes of acumen”.

Figure 25: From Acuity to Acumen



## New roles are becoming increasingly important

- Data Scientists, Cyber experts, Forensics

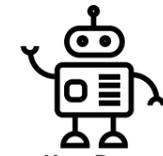
## Investing in training and development Key

- Job rotation the norm and vital to leadership Development

## Soft skills matter more than ever

- Consulting, negotiation, influencing, data interpretation

## Meet your new team members



**Acumen defined:** Acumen comes from talent. The requirement for Finance talent today is vastly getting different from what it used to be in the past, where Finance was a preserve of accountants and MBAs to a large extent. There were branches of specializations like tax, treasury, audit and so on and so forth. Today, we see the acumen of Finance changing so significantly that the requirements include people like data scientists, people like forensics experts, people like cyber security experts, people who are able to connect the dots, people who are able to narrate a story. In short, CFOs need an infusion of business savvy professionals. It is now imperative for them to understand business, the market it operates in, products, pricing and the customer.

Finance in the digital world is all about the bridging of acuity and acumen through smart technologies. As our personal lives are morphing into digital personas, it is inevitable that business processes and Finance in particular will have to match strides. The evangelist CFOs who can respond to this clarion call will have an edge in making their functions leaner, sharper, and more agile in responding to the changing times. At the end, it will be a case of Darwinism where the fittest will survive and the process of natural selection will weed out the digital dinosaurs. The time is here and the time is now. To act, to change, to disrupt and to “be exponential”!



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