KPMG

A capability improvement framework to disrupt, transform and innovate

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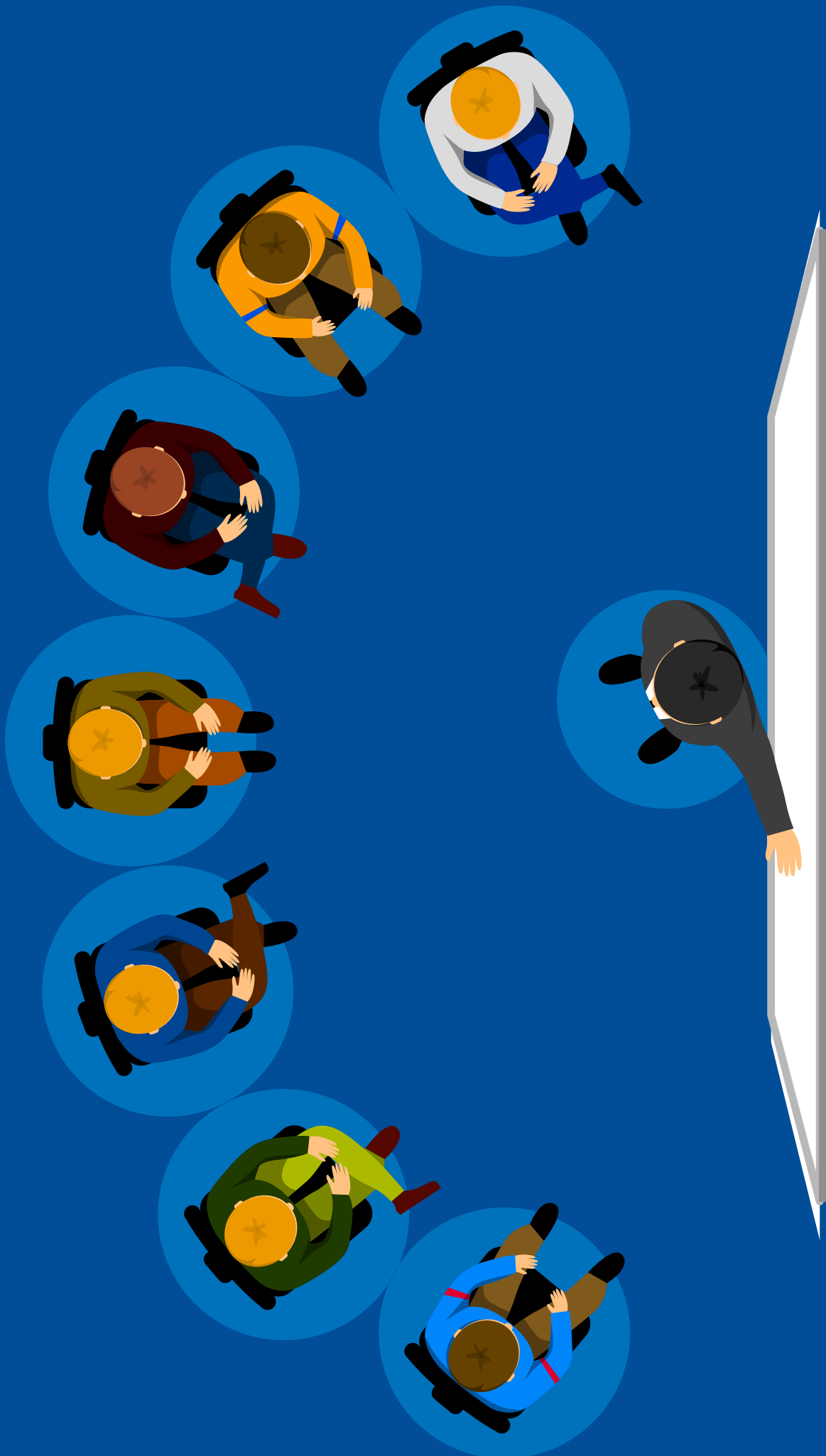# Introduction

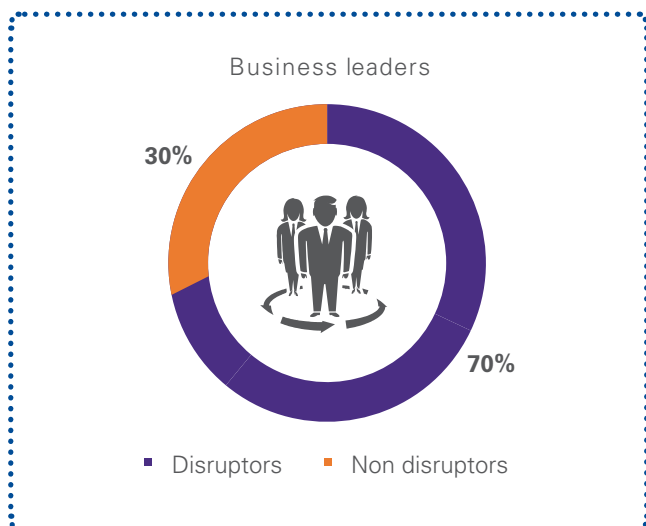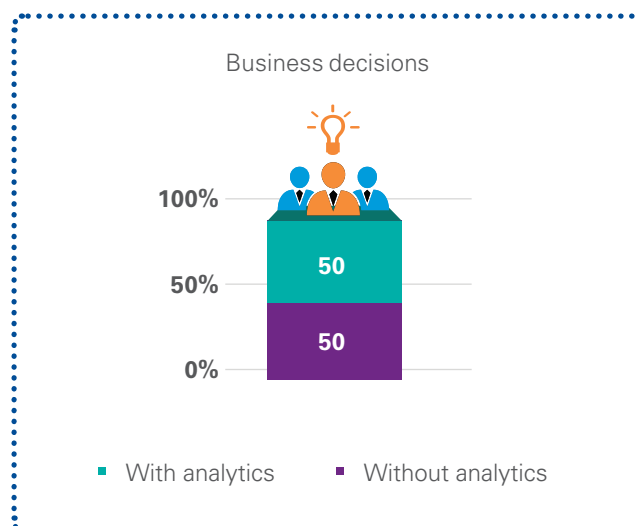In today's world, organisations want to have rapid growth and improve their existing business performance from products, financials, service operations and sustainability perspective. Amidst business uncertainties, volatile political conditions and complex environments for organisations to achieve the business performance, 'disruption' is increasingly becoming a keyword. Disruption is an opportunity for organisations to transform their business models and develop new products and services.

Disruption: As a way of working

Business leaders

30%

70%

- Disruptors   - Non disruptors

Business leaders want to be disruptors

Disruptors	70%
Non disruptors	30%

Use of analytics for business decisions

Business decisions

100%
50
50%
50
0%

- With analytics   - Without analytics

Quantitative and informed decision making

With analytics	50%
Without analytics	50%

More than 70 per cent of the organisational leaders want to be disruptors in their area of work but less than 50 per cent[01] have trusted analytics data to support their decision-making.

Several business leaders (6 out of 10 CEOs)[01] visualise disruption as an opportunity, rather than a threat. In the recent past, we have seen disruptions across the globe, and are aware about the technology/digital disruption going around, but it can also be systematically done to bring in larger business benefits for a longer period of time. Many organisations working on improving user experience are spending on big data reporting, modelling and analytics, but only a few are focusing on the internal capability improvement of their business processes and stakeholders, which are a part of the value stream, and impacts the business.

Organisations are privy to huge amounts of data related to each of their functions such as sales and marketing, customer service, business operations, human resources, but they are not using it for internal prediction.

To be a market disruptor, organisations need to sustain their existing performance, scale up existing process of execution, maintain discipline in operational activities and services, develop competency of team members, and take empirical decisions based on data.

Over the past two decades, KPMG in India's Business Excellence team has observed the adoption of Capability Maturity Model Integration (CMMI®)[02]. The adoption of CMMI has helped organisations become resilient and agile, outperform competition, facilitate consistent delivery of products and services.

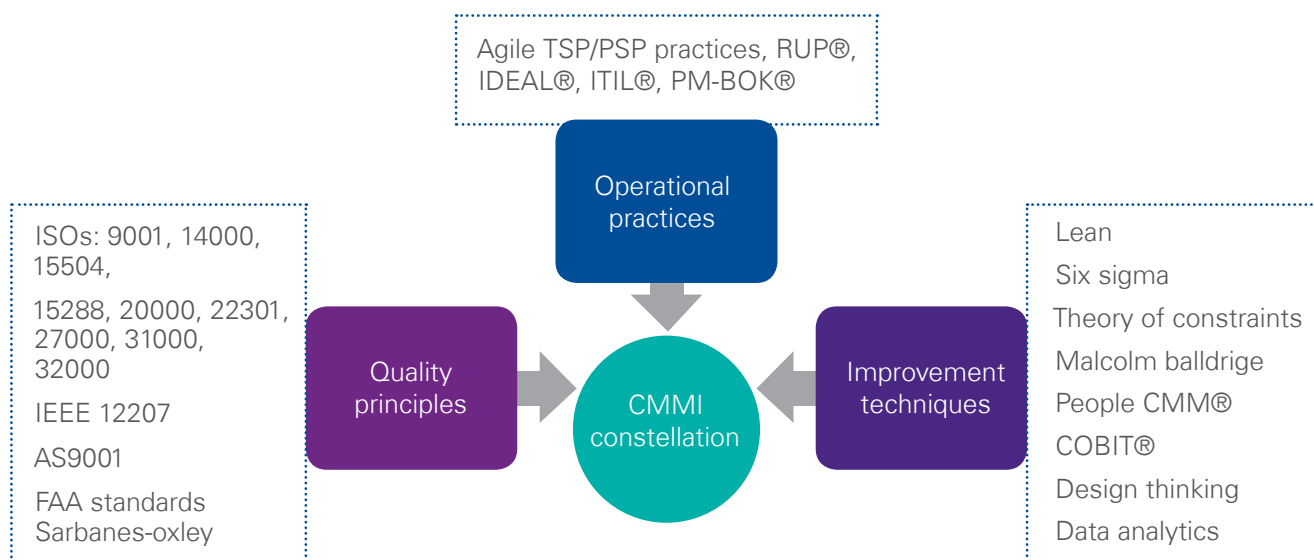1. Disrupt and Grow, 2017 Global CEO Outlook, KPMG Please mention the member firm
2. CMMI stands for Capability Maturity Model Integration

CMMI implementation across industries

The CMMI institute developed CMMI® model as a collection of best practices, which can be used by organisations to build capabilities, increase quality, enhance customer satisfaction and improve employee retention and profitability.

CMMI can be considered as a compendium of leading practices and techniques.

CMMI constellation: A collection of best practices

Agile TSP/PSP practices, RUP®, IDEAL®, ITIL®, PM-BOK®

Operational practices

ISOs: 9001, 14000, 15504,

15288, 20000, 22301, 27000, 31000, 32000

IEEE 12207

AS9001

FAA standards
Sarbanes-oxley

Quality principles

CMMI constellation

Improvement techniques

Lean

Six sigma

Theory of constraints

Malcolm balldrige

People CMM®

COBIT®

Design thinking

Data analytics

One of the key features of CMMI is that it can harmonise with any existing standards, process improvement methods and operational practices followed in the organisation.
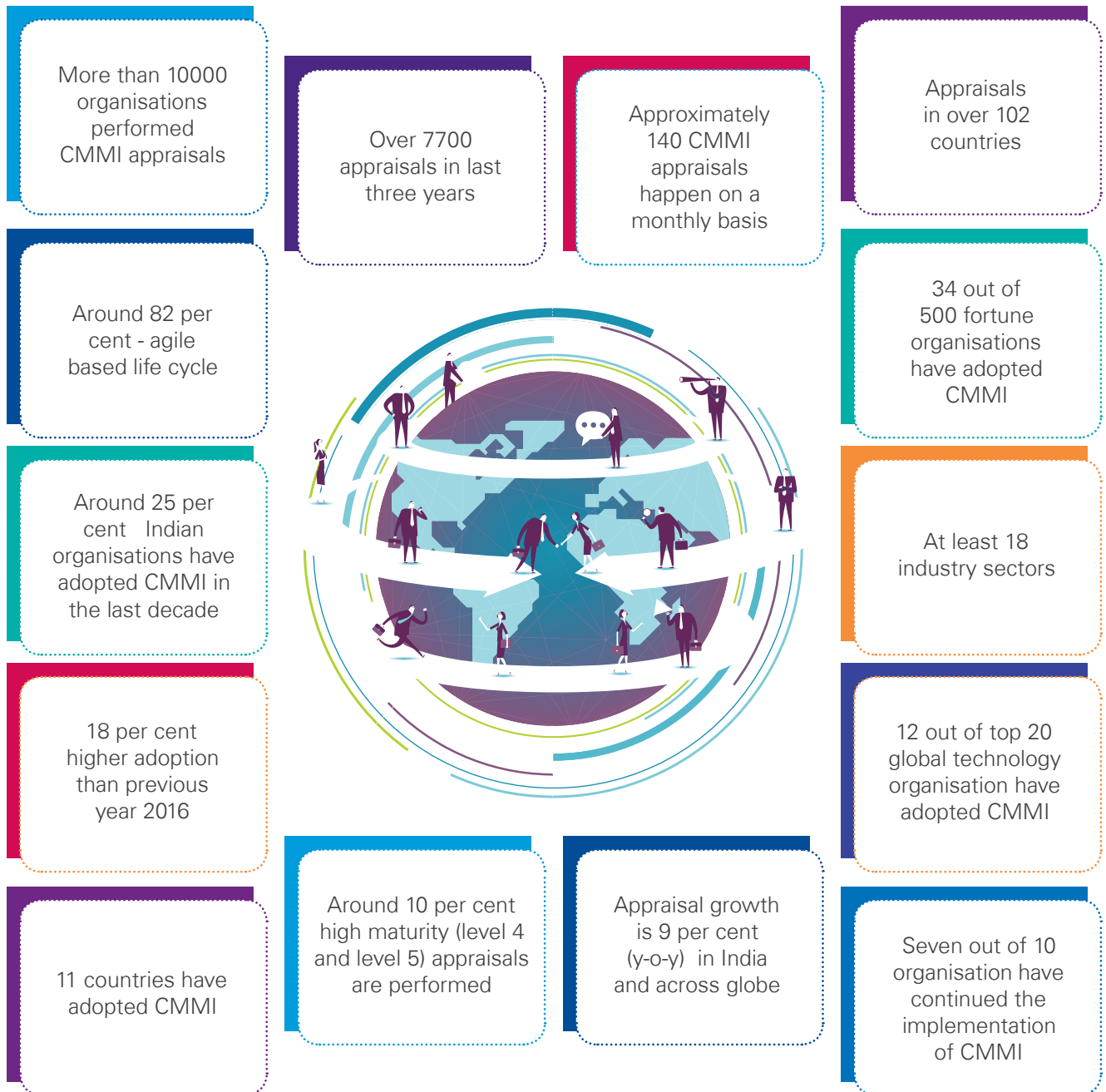
As a model, CMMI could cater towards all the stakeholders in the product development and service management life cycle:

Customer framework

Focuses on needs and requirements

Business framework

Instills governance, improves capability and provides potential benefits

Middle management framework

Drives performance and quality (operations and delivery)

Project framework

Performs project and stakeholder management and control

Vendor management

Manages engineering/service outsourcing

Individual framework

Guides continuous improvement and capability development

CMMI implementation can provide advantages to all stakeholders

It is quite evident that CMMI can support all stakeholders in an organisation in the value chain and thus provides organisations resilience and opportunity to disrupt.

From the recent CMMI institute maturity profile of 31 December 2017 published, we can deduce the following about CMMI implementations across the globe:

More than 10000 organisations performed CMMI appraisals

Over 7700 appraisals in last three years

Approximately 140 CMMI appraisals happen on a monthly basis

Appraisals in over 102 countries

Around 82 per cent - agile based life cycle

34 out of 500 fortune organisations have adopted CMMI

Around 25 per cent Indian organisations have adopted CMMI in the last decade

At least 18 industry sectors

18 per cent higher adoption than previous year 2016

12 out of top 20 global technology organisation have adopted CMMI

11 countries have adopted CMMI

Around 10 per cent high maturity (level 4 and level 5) appraisals are performed

Appraisal growth is 9 per cent (y-o-y) in India and across globe

Seven out of 10 organisation have continued the implementation of CMMI

Source: Maturity Profile 31 December 2017

Multiple organisations across the globe in different industry domains have successfully implemented CMMI. Following are a few listed industry types based on the maturity profile report of 31 December 2017:

Aerospace and defence	Commercial banks	Computer software	Computers/ office equipment	Construction and farm machinery
Electronics/ electrical equipment	Engineering/ construction	Financial data services	Healthcare- insurance/ managed care	Industrial machinery
Information technology services	Insurance- life, health (stock)	Motor vehicles and parts	Network and other communications equipment	Semiconductors/ other electronic components
Telecommunications	Wholesalers - electronics and office equipment	Wholesalers - healthcare		

Source: Maturity Profile 31 December 2017

Also, from the maturity profile of 31 December 2017 we have observed following:

- The top two organisations in 10 industry domains have demonstrated CMMI implementation
- Around 6.8 per cent out of 2017's fortune 500 organisations have adopted and demonstrated CMMI implementations.
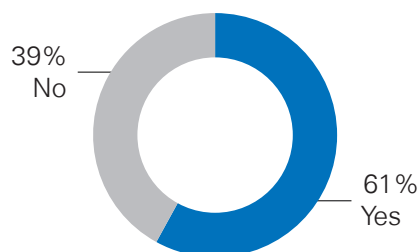
Emerging trends

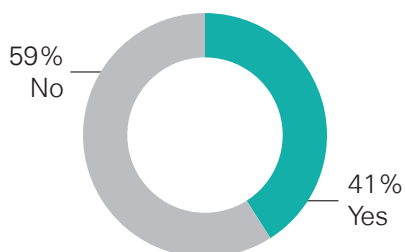It has been observed that the need for process improvement, capability development and achieving of business results are key drivers for organisations to adopt different constellations of CMMI.

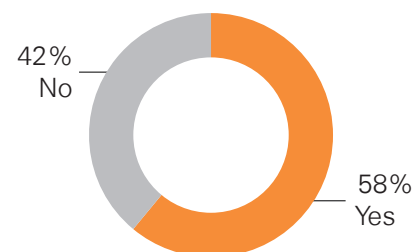## The following trends have been observed based on CMMI institute reports:

Gap in strategy implementation

39% No

61% Yes

Struggle between strategy formation and implementation	
Yes	61%
No	39%

Competency gap

59% No

41% Yes

Do not encourage employees to build organisational capabilities	
Yes	41%
No	59%

Capability to manage activities

42% No

58% Yes

Do not have established planning process	
Yes	58%
No	42%

Performance measures

46% Defined

54% Undefined

Do not have measures which matter	
Defined	46%
Undefined	54%

Standard processes

50% Lack

50% In place

Do not have standard processes, assets and job aids	
In place	50%
Lack	50%
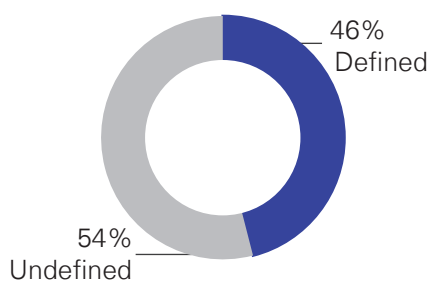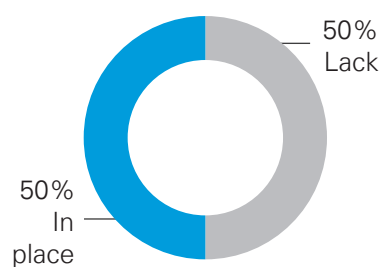
Management of activities

33% Unplanned

67% Planned

Difficult in monitoring plans and making adjustments	
Planned	67%
Unplanned	33%

Source: CMMI Institute, "Assess Your Organizational Capability Study," 2015

Organisations are generally involved in systems or applications development and manufacturing products or providing services. For serving business needs and meeting customer objectives better, organisations require business capabilities i.e. people process and technology and intention to perform activities.

Business capability has been a major disruptor and opportunity for the last two decades. Based on the CMMI Institute "CMMI benefits and Who uses CMMI presentation", 2015 about 90 per cent of the business leaders have it as one of their top 10 priorities while working on new product development and services. Several firms lacking in developing their business capability are likely to be replaced in the next decade.

Market, competition, and leaders have driven new product development for rapid and sustained growth, profitability, and improved user experience. To ensure that the time-to-market is met, organisations need to plan. Gap in competency or lack of capability in managing activities may result in ineffective planning and coordination, leading to delay. This might result in penalties or other business implications. Thus, organisations need to upskill employees on a regular basis, and appropriately plan and manage activities.

Productivity and efficiency in business process is key for any business. There is always a requirement to attain higher customer satisfaction. Therefore, having clearly defined business objectives and aligning them to business processes are key for any organisation.

The intent to perform by any organisation can be demonstrated through its vision, mission, values, policies, procedures and guidelines. If they are not in place then there are chances that employees may not appreciate the value system of the organisation, integrity and trust may not be visible to all stakeholders which may impact the organisation.

KPMG in India has been implementing CMMI for almost two decade, and has noted the following changes in the business environment:

- The global market has been changing with the advancement and advent of new technology

- Change in the way of working with millennials constituting a majority of the workforce

- High level of compliance to standards like safety, security and environment for mobility, cloud and analytics

- Revisions in various standards like International Organisation for Standardisation (ISO) and Aerospace (AS) to remain competitive

- Automation of quality management systems to facilitate their adoption

- Agile framework implementation in business processes for reducing time to market

- Tools implementations to constructively enable delivery management, communication and collaboration

- New technology adoption for rapid development and delivery and continuous delivery for integrated working.

- Adoption of practices like scaled Agile and DevOps
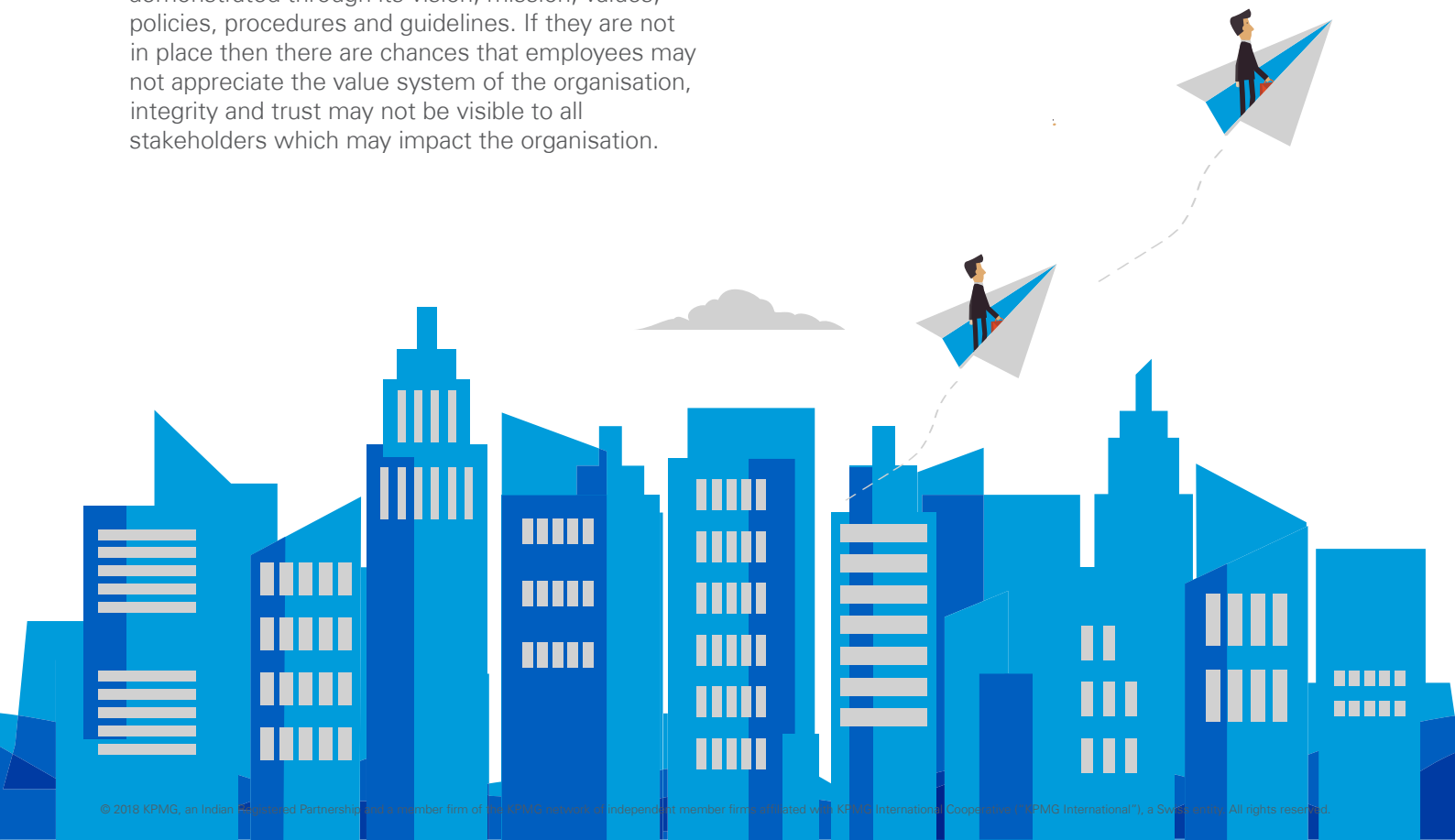
Earlier product development and service implementation documentation and reports were comprehensively maintained by organisations. Over the last decade organisations have turned leaner and adopted agile-based approach. An incorrect notion about agile is maintaining zero documentation and reports, due to which organisations are facing the following challenges:

- Lack of data to justify that the business environment supported has grown complex
- Awareness issues around

  Repeating past success (by teams)

  Team competency (team and individual)

  Vendor capability
- No/few role-based training, as individuals are assumed to already have the requisite knowledge. In a few organisations as high skilled resource are recruited trainings is considered as cost rather than investment
- Lack of visualisation of the entire product is missing, as enough time is not spent in prioritization of work

- No control over client-driven process (working as support/extended arms rather than enablers/ partners)
- Work monitoring is low as in agile people interaction and communication are considered to be more important than following process-based approach (lack of systematic way of working).

Thus, there is a need for organisations to:
- Access their capability level to build a matured, performed and sustained system which enables them to perform effectively in the competitive global market
- Focus on governance and infrastructure to determine successful implementation of strategy
- Build a culture of continuous improvement which is required to manage business resilience and disruption
- Perform quantitative management of business attributes like risks, security and performance to predict and enhance reliability and value.

CMMI V2.0 – The next generation model

The need of the hour for all organisations is to have a holistic framework which can support changes in the business landscape. Being a contributor in the advancement of leading practices in people, process, and technology, the CMMI Institute has evolved its product suite. CMMI® Development V2.0 was introduced in March 2018.

Key changes of CMMI V2.0 not observed in CMMI V1.3

The noteworthy improvements made by CMMI V2.0 are in the following areas:

Performance focus

Emphasise on performance practices at all maturity levels to improve organisational performance and recognise return on investment.

Usability and guidance

The model is built on a scalable architecture which would leverage existing practices and allow continuous integration and addition of new content to provide guidance for specific changing business needs.

Accessibility and understanding

An evolutionary incremental improvement path explained in non-technical business language can accelerate adoption of the new model across the globe and varied industries.

Appraisal reliability and value

As part of its new appraisal method to provide larger coverage for data analysis in each work unit (WU), statistically-validated random sampling technique will be used for significantly reducing the bias of results which is likely to make the appraisal process dependable.

Adoption guidance

Transition guides for existing organisations following CMMI V1.3. Simple steps designed to get started for new adopters along with common resources for successful implementation, critical lessons learnt and leading practices.

Integration of systems and tools

A single sign-on interface to reduce redundancy and easier navigation. It would also help organisations gauge their capabilities and prepare a road map for their CMMI implementation journey.

Other changes in the model from CMMI V1.3 are as follows:

- The process areas which are collection of best practices will be known as practice areas

- Each practice area can be segregated as 'core information', i.e., general descriptive section and 'context specific', a contextually applicable section

- The model will have required content for a practice area essential to achieve appraisal rating and explanatory information for interpretation and aide understanding for the required information

- Generic goals and practices in CMMI V2.0 will be replaced by two institutionalisation practice areas: governance and implementation infrastructure

The terms, acquisition will now be known as 'supplier management' and 'process institutionalisation' as 'process persistence and habitual'.

Potential benefits of CMMI V2.0

The potential benefits which the new CMMI V2.0 proposes to bring to organisations are as follows:

Manage business resilience	Envisage, anticipate and adapt disruptions and opportunities impacting business
Build and sustain capability	Strategise to build and sustain business process and technology efficiency for performance
Improve performance	Establish business goals in alignment to organizational needs and track them.
Manage workforce	Talent acquisition, development and management for business effectiveness
Select and manage suppliers	Coordinate with supply chain for desired business outcome and risk management
Engineer and develop products	Enhance end user experience and bring in delight
Plan and manage work	Optimise time to market and schedule
Support implementation	Collaborate with stakeholders for informed decisions, support product integrity and deliver committed outcome
Ensure quality	Individuals, team and organisation to define and maintain superior standard of deliverables for customer and business

KPMG in India's experience in CMMI implementation

KPMG in India's Business Excellence practice enables excellence through implementation of industry practices in people, processes and technology.

KPMG in India has been a transition partner to CMMI Institute for over 15 years. We have been one of the most active transition partners in India through implementation of CMMI appraisals in various organisations, sectors and domains.

15 years partnership award by CMMI Institute

We have nurtured more than 15 lead appraisers, and supported around 450 clients in their process improvement journeys in over 30 countries.

Around 70 per cent of our implementations on CMMI in the last three years involved Agile life cycle.

We have assisted startups, delivery centres of global organisations and many reputed organisations on development of Quality Management System (QMS) and its maintenance through a process improvement framework to promote behaviour that leads to improved performance.

We have enabled organisations to institutionalise their systems, application and product development, service and operations management and workforce management areas with respect to CMMI suite constellation for business process improvement.

As part of engagements, we have transformed organisations' adhoc way of working to a defined way of working.

We have supported organisations having multiple delivery centres in the implementation of CMMI high maturity (Maturity Level 4 and 5), which focuses on analytics-based transformations and innovations.

With global organisations, we have performed multiple-models implementation of CMMI product suite constellations, focused on improving capability, competency, performance and delivery.

Our customised delivery, integrity in approach, robust implementation methodology, supportive consultation support and ability to perform smooth transitions from other partners give us a competitive edge to perform CMMI implementation in India.
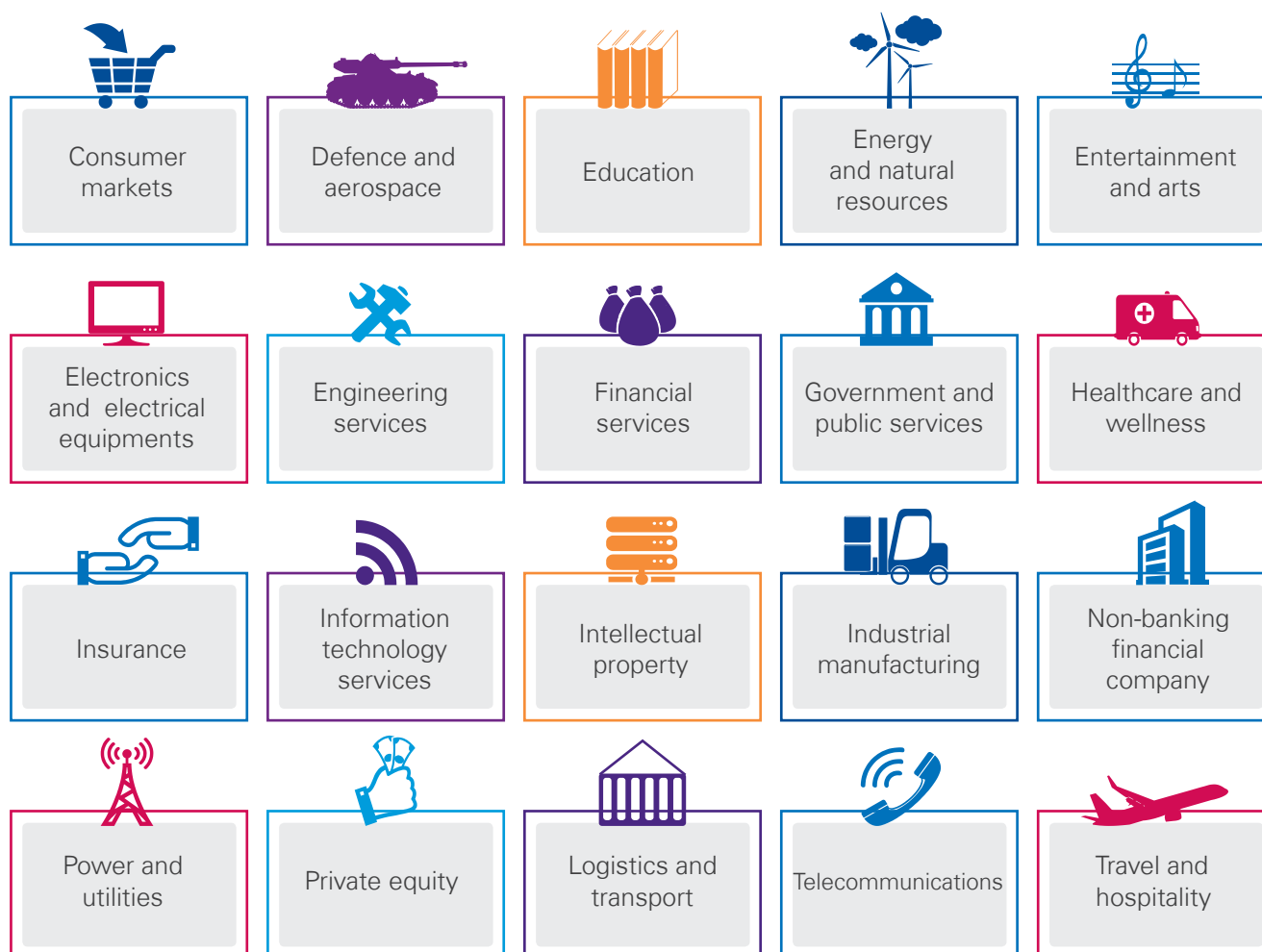
Business excellence implementation in industry and geography

The Business Excellence Practice has appraised CMMI product suite across organisations of various sizes — from an organisation as small as 50 members to global organisations more than 5000 members.

Few organisations have scaled their CMMI implementation enterprise-wide, i.e., across multiple global locations or global lines of business.

We have appraised around 20 sectors and domains:

Consumer markets	Defence and aerospace	Education	Energy and natural resources	Entertainment and arts
Electronics and electrical equipments	Engineering services	Financial services	Government and public services	Healthcare and wellness
Insurance	Information technology services	Intellectual property	Industrial manufacturing	Non-banking financial company
Power and utilities	Private equity	Logistics and transport	Telecommunications	Travel and hospitality

We have covered organisations and its units in the following countries other than India:

Bangladesh	Japan	Portugal	Turkey
Bahrain	Latvia	Qatar	Ukraine
China	Lebanon	Russia	United Arab Emirates
Czechoslovakia	Malaysia	Saudi Arabia	United Kingdom
Egypt	Morocco	Singapore	United States of America
France	Netherlands	Sri Lanka	Vietnam
Hong kong	Oman	Taiwan	
Indonesia	Philippines	Thailand	

Potential business benefits observed by KPMG:

KPMG in India has appraised CMMI across organisations, and the following are the value additions to organisations business operations:

Potential benefits of CMMI constellation
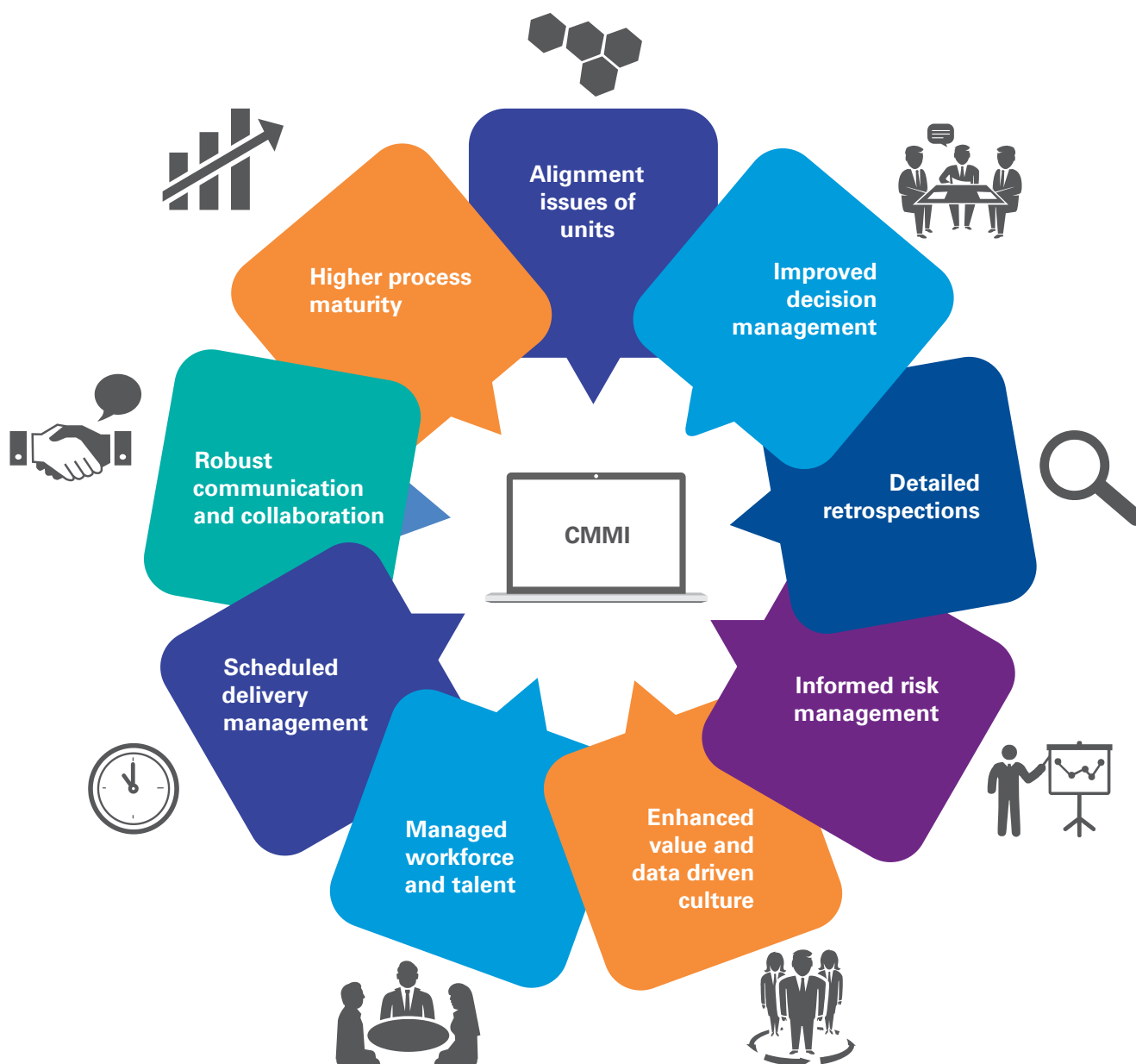
Merits experienced by organisations in secured storage and business process services sector

- Increase in availability of capacity by approximately 20 per cent, which resulted in more business

- Improvement in turnaround time (TAT) by around 9 per cent in tier I cities for one of the services

- Increase in customer satisfaction by 13 per cent for key accounts.

**Merits experienced by organisations in the e-learning domain:**

1

Improved turnaround time of 20 to 26 per cent with faster deliveries by rapidly changing business processes and meeting over-evolving customer demands.

2

Thorough project schedule both in terms of predictability as well as progressively reducing the time to complete projects.

3

Use process-driven approaches, quick development and test frameworks to help ensure solutions are efficient and expandable

Merits of CMMI product suite implementation we have seen across a few sectors and domains:

Global financial software

Ontime delivery
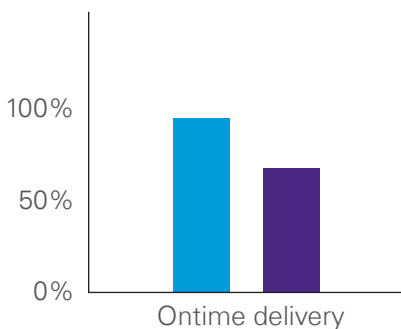
■ Post CMMI implementation   ■ Pre CMMI implementation

Leading IT solutions and services

Test effectiveness
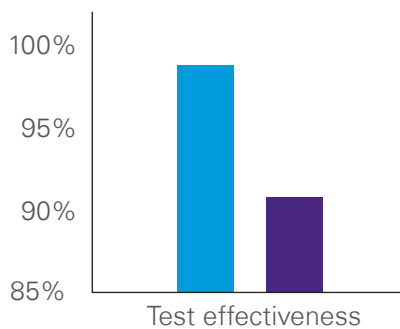
■ Post CMMI implementation   ■ Pre CMMI implementation

Product engineering function of global organisation

Delivered defect density
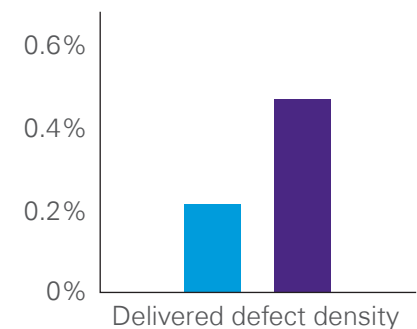
■ Post CMMI implementation   ■ Pre CMMI implementation

On-time delivery at global financial software organisation	
Pre CMMI implementation	71%
Post CMMI implementation	92%

Test effectiveness in leading IT solutions and service provider	
Pre CMMI implementation	91%
Post CMMI implementation	98%

Delivered defect density at product engineering function of a global organisation	
Pre CMMI implementation	0.453 defects / hr
Post CMMI implementation	0.215 defects / hr

KPMG - Continuous improvement journey

The Business Excellence team has always kept themselves abreast with the changing market, trends and CMMI product suite upgrades.

CMMI V2.0 has recently been launched, and it brings a lot of anxiety and inquisitiveness among the adopters of the model.

The Business Excellence leadership team:

Anandkumar K. Shelat	Krishnamurthy Kothandaraman	Mangesh Katalkar
Srijith Sreenivasan	Sankaran Venkataramani	

Have been contributors in model development and review process for CMMI V2.0.

The Business Excellence team is geared-up and ready to take a plunge for the continuous improvement journey for capability improvement to disrupt, transform and innovate with you. Are you ready for the same!

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KPMG in India
25
YEARS
of making a
difference

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