PRODUCTIVITY AND GEARING RATIOS CONSIDERATIONS IN A GLOBAL DELIVERY MODEL

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01. PRODUCTIVITY: A NEW PERSPECTIVE ON EFFECTIVENESS AND EFFICIENCY

Over the years, the productivity of IT functions has evolved from software quantity and quality to value delivered to the end customer

The focus on outcomes (time to market, solution quality, business value) rather than outputs (lines of code, story points) makes it possible to achieve improved and overarching productivity. This new perspective on productivity encompasses both efficiency and effectiveness.

Some of the influencing factors and key drivers of the overall productivity include:

- Process and its maturity level: Agile – DevOps, KANBAN, SRE, Lean Six Sigma culture.

- Work type: Digital transformation, Center of Excellence (CoE), greenfield development, consulting, maintenance, testing, production support.

- Technology and Tool adoption: Rationalization, automated CI-CD, KEDB (Known Error DataBase), cloud platforms.

- People and Skill focus: Cross skilling, team happiness index, continuous improvement culture.

With the advent of Agile as the dominant execution approach, especially over the last 5-6 years, organizations across all geographies are moving away fromindividual level productivity to group level productivity with the focus on measuring their collective success.

A survey by consulting firms found the following results on how organizations are looking at productivity:

Measure of Success - An Industry View

58%
Quicker time to market

58%
Quality of solution

39%
Features Adaptability to market changes

30%
Visibility

44%
Customer Satisfaction

25%
Predictability

44%
Business Value

29%
Engineering Productivity

Research shows the maturity of Developer Velocity (DV) primarily varies across domains.

97% of digital/IT employees report having group level productivity and collective outcome measures.

53% of digital/IT employees said that quality—not quantity—of work is the most common productivity KPI, followed by measures that compare work completed to plans or goals, volume, value.

Strong tools for planning, development, collaboration, continuous integration and delivery are the primary drivers of productivity.

Median digital/IT employees say that out of a 40-45-hour work week, only ~30 hours are spent in productive work – productivity drain relates to managing communications, unproductive meetings, time for requesting/recreating information, broken processes, work arounds.

95% of digital/IT employees say improvement programs and initiatives such as digital transformation, simplification and automation, and knowledge/content/data management differentiate the productivity.

1. Source: APQC, McKinsey

01. MEASURE OF SUCCESS - AN INDUSTRY VIEW

While organizations are measuring and strategizing to enhance their team level efficiency for greater values, there are many tools available that focus on individual productivity measurement as well

We analyzed a few of these tools to determine their applicability of meaningful productivity measurements across various Life Cycle (LC) stages

Work Type / Project Phase	Applicability of Individual Productivity Tools
Discovery and requirements	No
Analysis and design	No
Coding and unit testing	Yes
System and acceptance testing	No
Implementation and deployment	No
Team collaboration	Partial (Covers planned meetings)
Production support	Partial (L3 specific coding)

Our study revealed that these tools mainly focus on coding effort, code quantity and round trips to code repository that is more relevant during the build phase of the project. These tools tend to miss various other phases of the project lifecycle, which are equally or more critical for the success of the project.

This individual productivity measurement is also not uniformly defined in the industry, due to their limited applicability to only the specific nature of the projects and to their partial life cycle coverage.

As we look ahead, increased adoption of low code and no code will further make the quantity-based individual productivity measurement inapt.

Customer-focused organizations primarily measure success by having varied work types spread across geographies, focusing on business value delivered and collective outcomes. They find the individual productivity measurement approach not suitable for their strategic objectives.
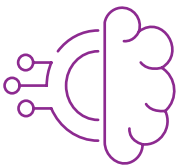
According to our philosophy... We believe that a holistic view in terms of efficiency, quality, value aspect and predictability can be used to gauge teams' performance and overall team productivity

Success is achieved when business value produced and customer satisfaction achieved is in accordance with the goals at the same time enhancing individual and teams' capabilities and well-being.

An illustrative view of how Infosys defines the unit of measurement and the goals for productivity improvement.

Predictability
- "Plan to done" ratio
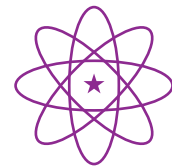- Velocity
- Through periodic review of burn down charts

Efficiency & Improvement
- Automation coverage, tools usage, DevOps maturity
- Cycle time evaluation, deployment metrics, SLA adherence
- SP/Person hours or person months

Quality & Effectiveness
- Requirement and design traceability
- Escape defects density
- Defects reopen rate
- Code quality

Value, Customer, Team Satisfaction
- Business value delivered at every sprint and release
- Customer satisfaction
- Pulse from all stakeholders and project teams' happiness index

At Infosys, productivity measurements in engagements are characterized by the service delivered. Depending on the specific type of service to be delivered in the engagement, Infosys defines the unit of measurement and the goals for productivity improvement.

Nature of service	Unit of measurement	Measure of PI	Themes for Improvement*
Production Support	# of production support tickets serviced	Increase in # of tickets serviced	1 2 3 4
	Mean time to resolve tickets	Reduction in the time taken to resolve tickets	
Maintenance	# of enhancements delivered	Increase in # of enhancements delivered	1 2 3 4
Development/Agile	# of hours taken to deliver the work based on the baselined estimation model	Reduction in # of hours measured in terms of revision in estimation model	
	# of days to deliver the product	Reduction in cycle time	1 2 3 4
	# of story points delivered per sprint (velocity)	Increase in # of story points delivered	
	# of story points completed vs planned	Increase in # of story points delivered	

01. HOW DO WE MEASURE PRODUCTIVITY IN INFOSYS

Our development frameworks, accelerators and continuous improvement initiatives have been designed to help expedite innovation and time to market as well as improve quality delivery

Depending on the applicability to a specific program, improvement levers are applied.

Illustration for Themes for Improvement

	Production Support		Development and Maintenance	
1 Go Lean	• Workload optimization • Optimized Management Overhead	Six Sigma and Lean culture, Infosys AMS dashboard	• Staffing rationalization - roles and locations • Reduce overlaps and overheads	Six Sigma and Lean culture
2 Improve & Automate	• Trend anlysis and automation • Tool based reduction in support tickets • Monitoring, Automated log search • Automatic Ticket Resolution • Automatic Cyclic KMDB	Automation Maturity Model, Live Enterprise Framework (LEAP), Innovation Framework (BTN)	• Testing automation • Automated TDM and TEM • App. Health-compliance • Automated Code Reviewer • Faster MF Build	Infosys Migration Platform, Code analysis platform, Infosys testing accelerators, Code Store, Innovation Framework (BTN)
3 Optimize & Rationalize	• Create SELF HELP documents • Shift Left from L3 to L1 through continuos improv	Digital Learning Platforms, LEAP BOT repository	• Automated CI/CD • Infra-as-Code • Service Virtualization • Agile & DevOps, SRE adoption	Infosys DevOps Platform, SRE Platform and maturity models
4 Transform	• ITIL Process standatization and optimization • Application/rationalization and decommissioning	Infosys Application insights, Process and assessment frameworks, Prediction models	• Open-Source Adoption • APIs for intergration/Batch removal • Functional Rationalization • Hardening Sprint	Code Generators, Cloud development platforms, COBALT store

For EU Banking Major, early adoption of accelerators and product centric development led to:

4x Time to market improvement in onboarding new countries

2.5x improvement in business productivity and fraud investigation accuracy

At Infosys, we have experience partnering with some of the best and biggest companies around the world and we always apply our learning to constantly improve our work productivity models and outcomes

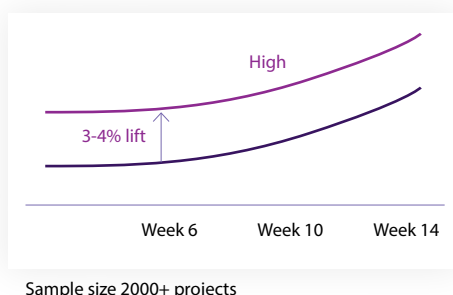**When we examined large set of engagements, we observed:**

- Early adoption of improvement levers differentiates and enhances teams' productivity.

- The right mix of teams (across geographies and vendor partners with effective digital collaboration) enhances productivity gains.

Early adoption of improvement levers provide strong foundation for teams' productivity

Digital visualization of processes (eg.KANBAN), feature driven development, cloud solutions, investments on cross skilling, automations, differentiators, accelerators and BOTs

- 3-4% uplift in overall efficiency in engagements have higher adoption of these levers at early LC stages.

Eg: Projects that have leveraged KANBAN and extended ServiceNow capabilities with fully automated KMDBs demonstrate a 3-6% higher productivity (support work).

High

3-4% lift

Week 6   Week 10   Week 14

Sample size 2000+ projects

For US Banking, in a large transformation program, agile scale up, DevOps implementation, and cross-skilling to full-stack led to:

30%	reduction in operations time
11%	cost reduction
2.5x	reduction in ticket volume
3x	improvement in time-to market

Teams spread across geographies see some variation in productivity (attributed to influencing factors)
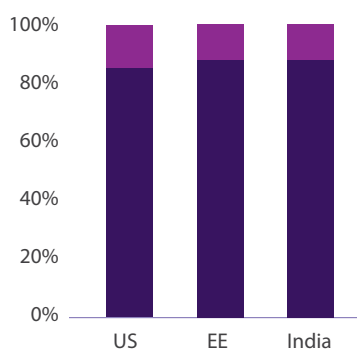
- > 85-90% of teams spanning across geographies deliver similar outcomes with sustained quality.

- A small % of teams with multi-geo scenarios (> 3 geographies) deliver lower than the desired productivity.

- 40-50% of teams with multi-vendor scenarios (> 2 vendors) deliver lower than the desired productivity.

- In case of digital transformation programs, a +/-5% productivity variation is observed between EE and India teams. Domain understanding,

client context and engagement characteristics are the key influencers.

- In case of support work, +/- 1.5% productivity variation is observed between EE and India teams. Time zone, app and processes understanding, better connectivity are key influencing factors.

- Our experience indicates that inheriting highly matured organizational quality management system (QMS) by every program brings in lower variability and higher predictability.
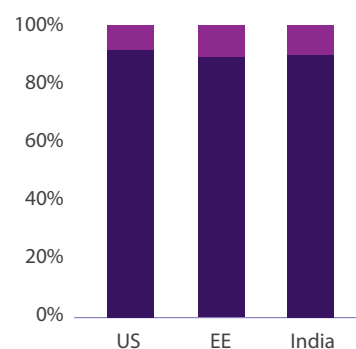
Geography Mix

Transformation programs

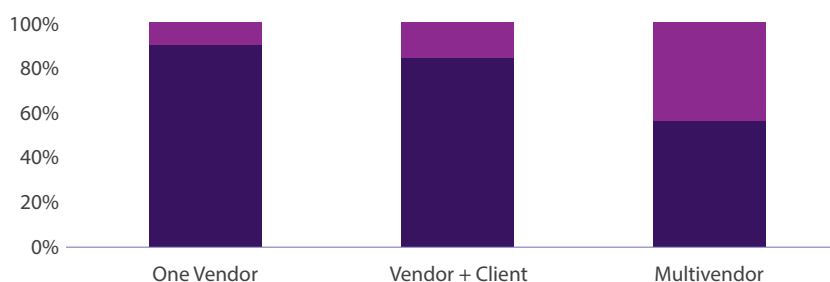### Support

■ Teams delivering the desired productivity range   ■ Teams delivering lower than desired productivity range

Consolidation of teams and effective usage of digital collaboration help improve efficiency

- In one-vendor scenario, >85 - 90% of teams delivered desired productivity with sustained quality.

- ~40% of teams in multi-vendor scenarios (> 2 vendors) delivered lower than the desired productivity.

■ Teams delivering the desired productivity range
■ Teams delivering lower than desired productivity range

Location gearing ratio determines how many talents are required nearshore or offshore to produce the output equivalent to one US-based talent for the similar type of work
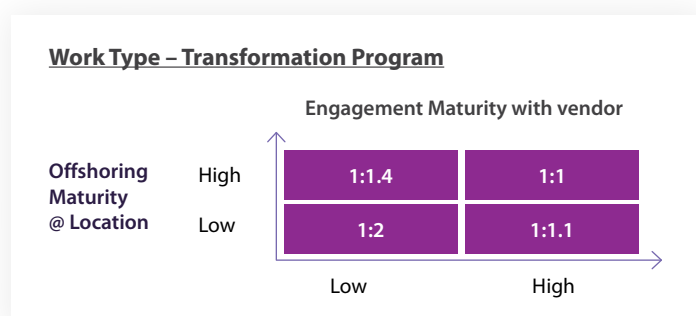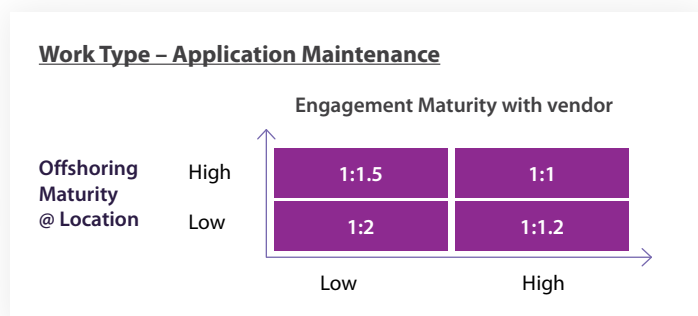
Gearing ratio for specific locations is dependent on various parameters beyond productivity. Typically, it improves over time as application understanding and environment familiarity increases. Some of the key factors influencing gearing ratios are:

- **Portfolio characteristics:** A portfolio's technology stack, process maturity, talent requirements, infrastructure complexity, business criticality and support window (24x7) requirement come into consideration. All these determine the set of activities and work type that needs to be delivered through different engagement models.

- **Engagement maturity with vendor:** The type of engagement and its maturity have an important role in determining gearing ratio. More mature engagements in terms of partnership depth see better gearing ratio due to existing synergies and landscape understanding.

- **Offshoring maturity at location:** Exposure to working in the region helps build client-specific SME knowledge base in terms of system and processes understanding. Clients with more offshoring maturity in the region tend to extract better benefits.

Typical gearing ratio as illustration:

Work Type – Application Maintenance

Engagement Maturity with vendor

Offshoring Maturity @ Location			
	High	1:1.5	1:1
	Low	1:2	1:1.2
		Low	High

Work Type – Transformation Program

Engagement Maturity with vendor

Offshoring Maturity @ Location			
	High	1:1.4	1:1
	Low	1:2	1:1.1
		Low	High

03. OPTIMAL WORKLOAD DISTRIBUTION ACROSS GEOGRAPHIES

For optimal distribution across regions, location-specific gearing ratio needs to be combined with location analysis, country-specific risk and financial modeling

- **Location analysis:** This takes into consideration the talent ecosystem, business environment, ecosystem maturity and strategic relevance. The selected location needs to complement future talent needs for growth plans.

- **Country-specific risk profile:** This parameter looks for a particular country with the overall business

risk, political risk, economic risk, service disruption risk, HR policies and operations scalability risk.

- **Financial modeling:** This involves assessing key elements and performing comparative analysis for the following people cost, operations and infrastructure costs, taxation and other costs.

See below for typical work type distribution across geographies and among captive offices and vendor partners:

Headquarters

- Business alignment and analysis
- Program Management
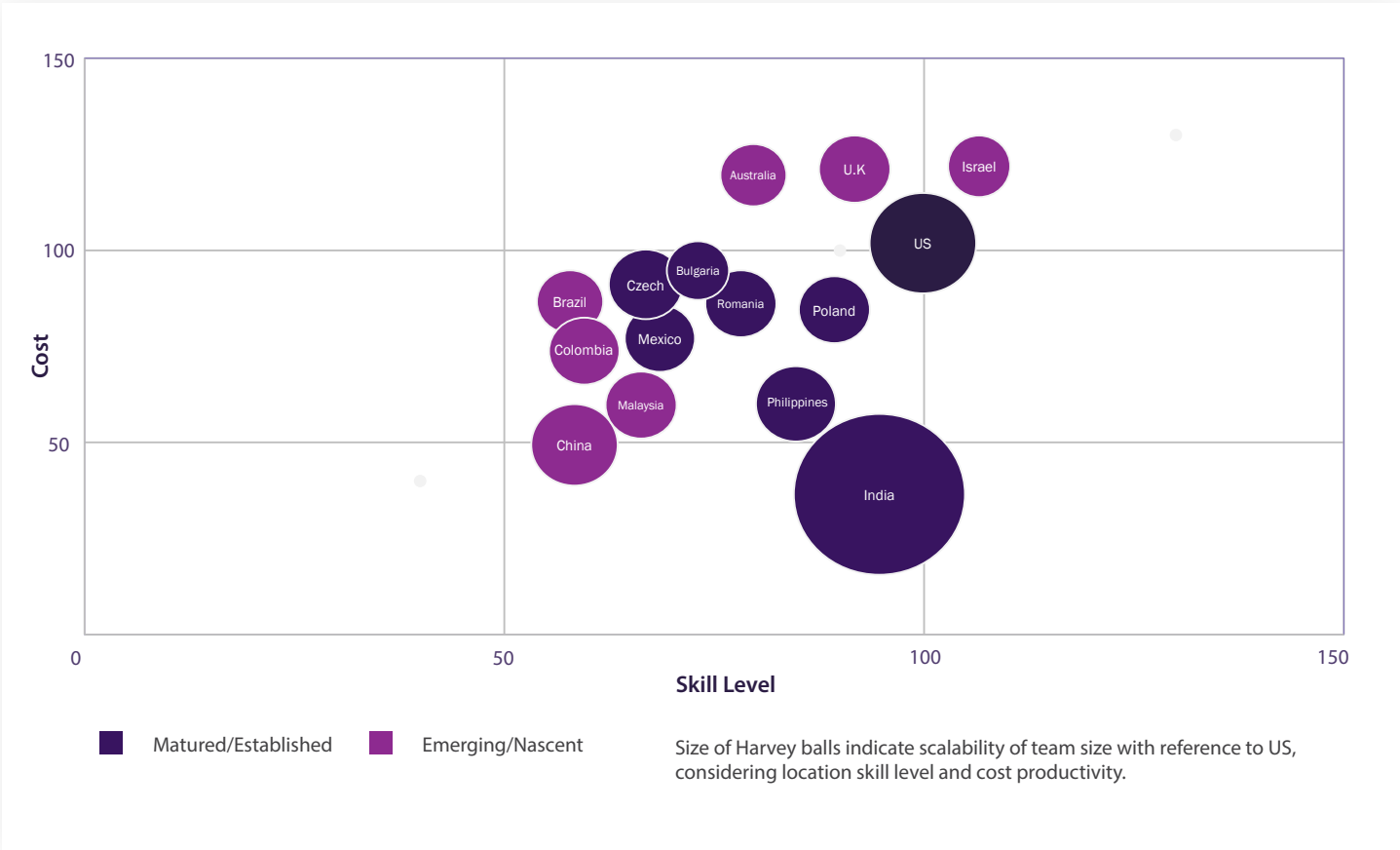- Strategic and Regulatory programs

Near shore

- Local language dependent programs
- Programs requireing high regulatory compliance
- Minimize time zome impacts
- Center of Excellence (CoE), R&D

Offshore - Captive

- Center of Excellence (CoE)
- Regional IT
- High Business impact and Digital programs
- Regulatory restricted support
- Program Management
- Business alignment and analysis

Offshore - Vendor Partner

- IT services - Development, Testing, App and Infra support
- Digital Transformation programs needing scale
- Niche programs/projects
- Center of Excellence (CoE), R&D
- Consulting and business analysis

The graph below shows a study done by Infosys on team scalability across geographies considering skill level availability and cost aspects

Size of Harvey balls indicate scalability of team size with reference to US, considering location skill level and cost productivity.

Optimal team distribution across geography is considers all aspects of execution like productivity, gearing ratio, location analysis, financial modeling and typical work type distribution

The below table depicts a typical team distribution mix (percentage) for various type of engagements that will give maximum value to the customer.

Engagement Type	Headquarters / Onshore	Nearshore	Offshore
Digital Transformation / Development	5-10	10-20	70-85
App Maintenance & Support	5-10	5-10	80-90
Testing	0-5	0-5	80-90
Consulting, Business Analysis	25-30	0	70-75
Center of Excellence / Innovation Labs	5-10	15-25	65-75

In our experience, we have observed on team productivity:

>85-90%

>85-90% of teams spanning across geographies deliver similar outcomes. However, we observed a small % teams deliver lower than the desired productivity, in case of multi-geo scenarios (>3 geographies).

In case of digital transformation programs, a +/-5% productivity variation is observed between EE and India teams. Domain understanding, client context and engagement characteristics are the key influencers.

In case of support work, +/- 1.5% productivity variation is observed between EE and India teams. Time zone, application and processes understanding, better connectivity are key influencers.

Consolidation of teams and effective usage of digital collaboration help improve efficiency to the tune of 20-25%.

Customer-focused organizations prefer teams' group productivity over individual productivity.

Partial life cycle-based measurement metrics (eg: individual productivity considering only coding effort) do not provide a holistic view on efficiency and effectiveness.

Especially for Agile projects, velocity/ productivity comparison between different teams, locations, projects and organizations is not advisable.

A holistic view in terms of time to value, efficiency, quality, reliability in production, predictability and happiness index can be used to measure teams' performance.

Teams' productivity levels can be differentiated and enhanced by adoption level of improvement solutions, accelerators and automations.

Success is achieved when business value is produced and customers are satisfied.

Gearing ratio for a specific location is dependent on various parameters beyond productivity, like portfolio characteristics, engagement maturity with vendor partner and clients' offshoring maturity at the location.

To determine optimal distribution of work type and team across geographies for specific engagement and portfolio, a holistic approach is essential, considering all aspects of execution like productivity, gearing ratio, location analysis and financial modeling.

EXTERNAL REFERENCES

1. APQC, McKinsey - URL Source: APQC (Aug, Sep, Oct 2021), McKinsey (Apr 2020)

AUTHORS

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Prashant is a Techno functional industry leader with extensive delivery and consulting experience in the Financial Services Industry. He has wide experience in successfully building teams and delivering large IT transformation programs across globe. He is collaborating with several financial institutions on their digitalization strategy with scaled agile approach, driving innovative large deals and deriving cost take out benefits. He has also been designing & building solutions, building product alliances and fintech collaboration.

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Padma has experience in delivery, business consulting and client advisory roles in the IT services industry. Core expertise in developing IT and business strategy, global IT systems definition and development. Coached clients in managing their IT portfolios in a multivendor environment by recommending industry best practices in sourcing models. In the recent past he has been advising and developing client strategy to setup their Global Capability Centers (GCC) in India and across the globe. Helped clients develop business case, talent strategy and infrastructure to take care of the unique nuances

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