PRODUCTIVITY AND GEARING RATIOS CONSIDERATIONS IN A GLOBAL DELIVERY MODEL
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<th>Title</th>
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<td>Summary</td>
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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 from individual 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**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quicker time to market</td>
<td>58%</td>
</tr>
<tr>
<td>Quality of solution</td>
<td>58%</td>
</tr>
<tr>
<td>Features Adaptable to market changes</td>
<td>39%</td>
</tr>
<tr>
<td>Visibility</td>
<td>30%</td>
</tr>
<tr>
<td>Customer Satisfaction</td>
<td>44%</td>
</tr>
<tr>
<td>Predictability</td>
<td>25%</td>
</tr>
<tr>
<td>Business Value</td>
<td>44%</td>
</tr>
<tr>
<td>Engineering Productivity</td>
<td>29%</td>
</tr>
</tbody>
</table>

- 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.

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

- Some of digital/IT employees report having group level productivity and collective outcome measures.

- Some 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.

- 1. Source: APQC, McKinsey
We analyzed a few of these tools to determine their applicability of meaningful productivity measurements across various Life Cycle (LC) stages.

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

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.
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.

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

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

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

- **Time to market improvement in onboarding new countries**: **4x**
- **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).

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

Sample size 2000+ projects
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.

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.
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:
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 requiring high regulatory compliance
- Minimize time zone 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
03. OPTIMAL WORKLOAD DISTRIBUTION ACROSS GEOGRAPHIES

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

![Graph showing team scalability across geographies]

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

<table>
<thead>
<tr>
<th>Engagement Type</th>
<th>Headquarters / Onshore</th>
<th>Nearshore</th>
<th>Offshore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Transformation / Development</td>
<td>5-10</td>
<td>10-20</td>
<td>70-85</td>
</tr>
<tr>
<td>App Maintenance &amp; Support</td>
<td>5-10</td>
<td>5-10</td>
<td>80-90</td>
</tr>
<tr>
<td>Testing</td>
<td>0-5</td>
<td>0-5</td>
<td>80-90</td>
</tr>
<tr>
<td>Consulting, Business Analysis</td>
<td>25-30</td>
<td>0</td>
<td>70-75</td>
</tr>
<tr>
<td>Center of Excellence / Innovation Labs</td>
<td>5-10</td>
<td>15-25</td>
<td>65-75</td>
</tr>
</tbody>
</table>

The below table depicts a typical team distribution mix (percentage) for various type of engagements that will give maximum value to the customer.
In our experience, we have observed on team productivity:

>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).

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

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

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

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.

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

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.

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.

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.

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

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

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.
Prashant Khadilkar
Global Delivery Partner

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.

Anju Nampoothiri Krishnan
Sr Unit Quality Head

Anju has rich experience in organizational transformations, delivery excellence and risk management. She heads the quality function for Financial, Healthcare, Insurance service sectors and Infosys iCompaz. Over the years, she has assumed many pivotal roles within the organization driving business value and reduction in cost structures for clients. She extensively helps our clients with ready to use, state of the art quality frameworks and end to end assessments for merger and acquisitions. Recently, she has co-authored research papers on Hybrid work in the post-pandemic era and another titled, “Product Technology Services Quality Framework : A value-based ecosystem for Domain product implementation” that are now being widely adopted by various service sectors.

Padma Kumar
Sr. Solution Architect

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