



A Guide to
**Integrated Management of
Productivity Activities (IMPACT)**

SPRING
singapore

Enabling Enterprise

Published by SPRING Singapore
1 Fusionopolis Walk, #01-02
South Tower, Solaris
Singapore 138628
Tel : +65 6278 6666
Fax : +65 6278 6667
www.spring.gov.sg

© SPRING Singapore 2011

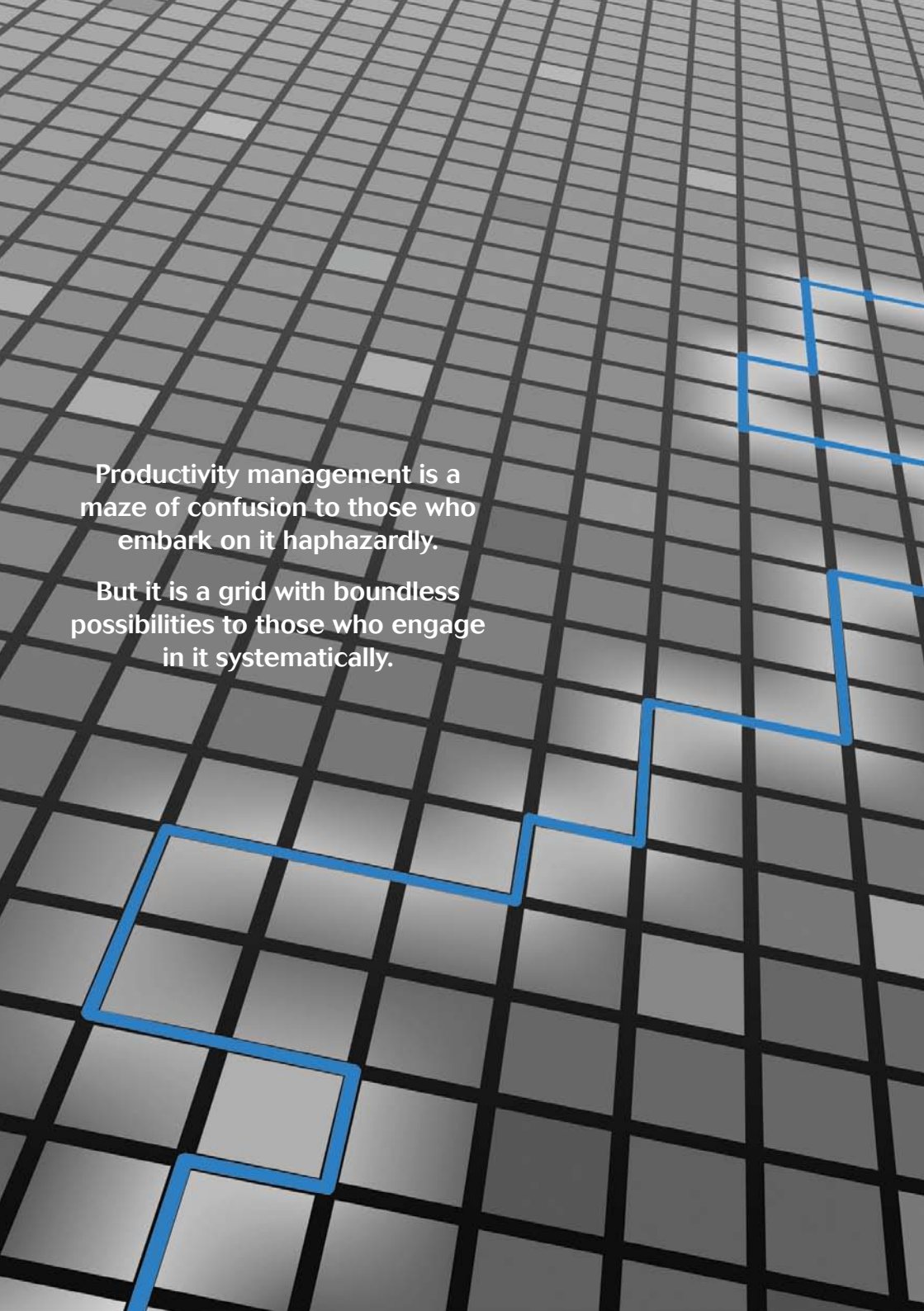
All rights reserved.
No part of this publication should be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying or otherwise, without prior permission of the copyright holders.

Whilst every effort has been made to ensure that the information contained herein is comprehensive and accurate, SPRING Singapore will not accept any liability for omissions or errors.

ISBN 978 981 4150 26 2

CONTENTS

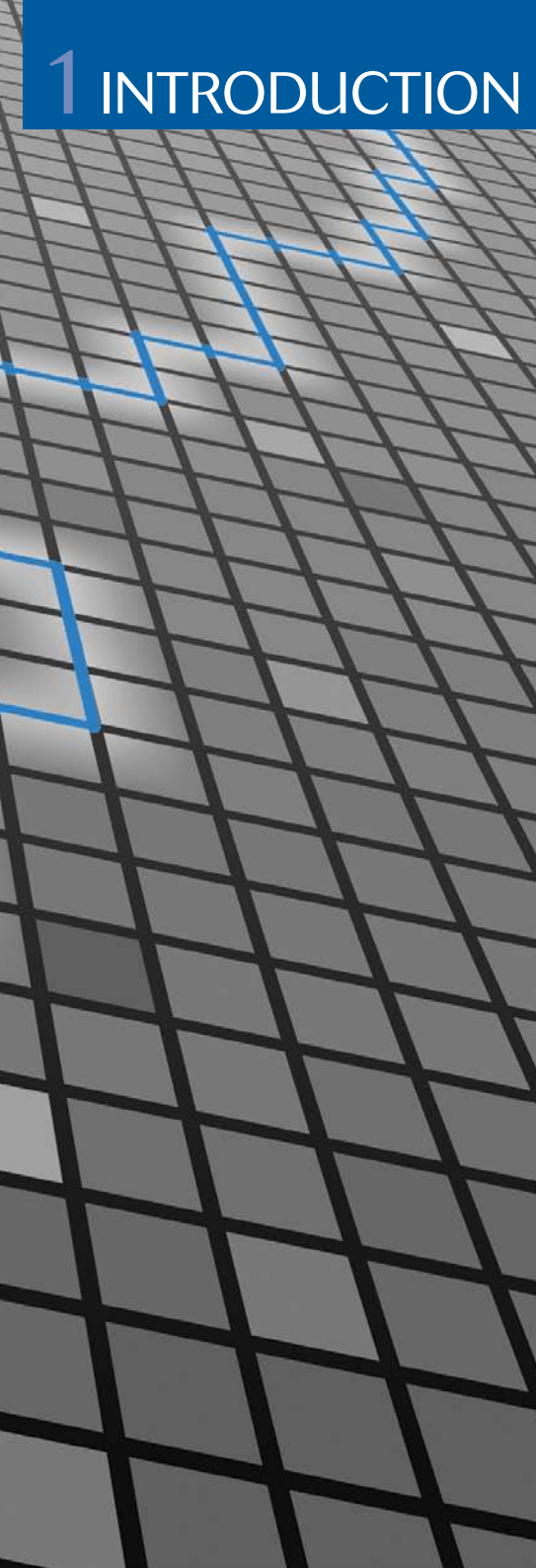
1. INTRODUCTION	3
2. BASIC PRODUCTIVITY CONCEPTS	4
3. THE IMPACT FRAMEWORK	8
4. CONCLUSION	19
ANNEX A Scope of Work of a Productivity Manager	20
ANNEX B Key Productivity Indicators	22
ANNEX C IMPACT Assessment	24

A 3D perspective view of a gray grid with a blue path. The grid is composed of dark gray lines forming a grid of squares, receding into the distance. A thick blue line starts from the bottom left and moves towards the top right, following a jagged, step-like path that zig-zags across the grid. The path consists of several horizontal and vertical segments of varying lengths, creating a staircase-like effect as it ascends.

Productivity management is a
maze of confusion to those who
embark on it haphazardly.

But it is a grid with boundless
possibilities to those who engage
in it systematically.

1 INTRODUCTION



Productivity plays an important role in the generation of Singapore's wealth by ensuring effective and efficient use of resources. In the light of globalisation, limited resources and increasing competition from emerging economies, it is important that Singapore sustains its economic growth through productivity gains.

The same applies to organisations. Successful productivity management is key to their survival in today's highly competitive environment. An organisation's productivity can be effectively raised only if it is managed in a holistic manner. Productivity management is a journey of continuous improvements involving employees at all levels.

This guide aims to help you manage your organisation's productivity systematically through an **Integrated Management of Productivity Activities (IMPACT)** framework. The IMPACT framework includes the key productivity levers to address when you embark on productivity improvement initiatives. It can be used by everyone involved in the productivity management process – senior management, productivity managers, and line managers in specific functions such as human resource development and quality control.

The IMPACT framework can help to increase your organisation's productivity performance in the long run.

2 BASIC PRODUCTIVITY CONCEPTS

What is Productivity?

Productivity is defined as the relationship between the quantity of output and the quantity of input used to generate that output:

$$\text{PRODUCTIVITY} = \frac{\text{OUTPUT}}{\text{INPUT}}$$

Productivity is not just about doing things more efficiently by “doing things right”, it is also about achieving maximum effectiveness by “doing the right things”.

$$\text{PRODUCTIVITY} = \begin{array}{|c|} \hline \text{EFFICIENCY} \\ \hline \end{array} + \begin{array}{|c|} \hline \text{EFFECTIVENESS} \\ \hline \end{array}$$

$$\text{PRODUCTIVITY} = \begin{array}{|c|} \hline \text{DOING} \\ \text{THINGS RIGHT} \\ \hline \end{array} + \begin{array}{|c|} \hline \text{DOING THE} \\ \text{RIGHT THINGS} \\ \hline \end{array}$$

Thus, higher productivity can be achieved through efficient and effective use of resources such as labour, capital and materials in the production of various goods and services.

Productivity Indicators

Productivity can be measured across various levels (e.g. national, industry, organisation and operational) and different sectors (e.g. manufacturing and services).

Figure 2.1 shows the common productivity indicators used at the various levels.

Figure 2.1 : Common Productivity Indicators



Output

At the operational level, where goods or services are homogeneous, output is measured in physical units (e.g. number of goods produced).

At the industry and organisation levels, output is commonly measured by value added.

At the national level, output is measured by GDP, which is the total value added for the economy.

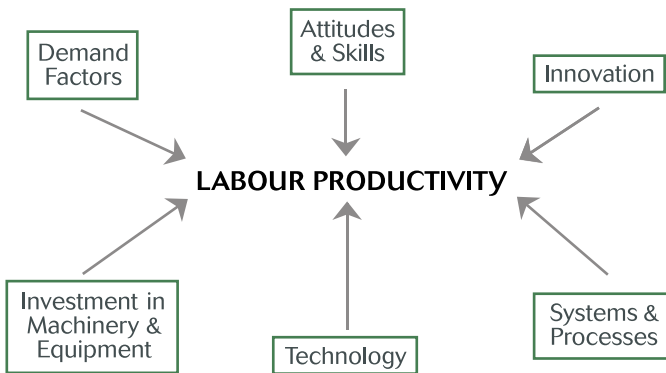
Input

Inputs are the resources used to produce output. The most common inputs are labour and capital.

Labour Productivity

Labour productivity, defined as value added per worker, is the most common measure of productivity. This measure reflects the efficiency and effectiveness of labour in the production and sale of the output. It is determined by the attitudes and skills of workers, and other factors that affect both output and input (see Figure 2.2).

Figure 2.2: Factors Affecting Labour Productivity



Concept of Value Added

Value added is commonly used in measures of an organisation's productivity, as it represents the wealth created through its production process or provision of services. It measures the difference between sales and the cost of materials and services incurred to generate the sales:

Subtraction Method

$$\text{VALUE ADDED} = \text{SALES} - \text{COST OF PURCHASED GOODS \& SERVICES}$$

Since the wealth is generated by the combined efforts of those who work in the organisation (employees) and those who provide the capital (employers and investors), it must therefore be distributed among them.

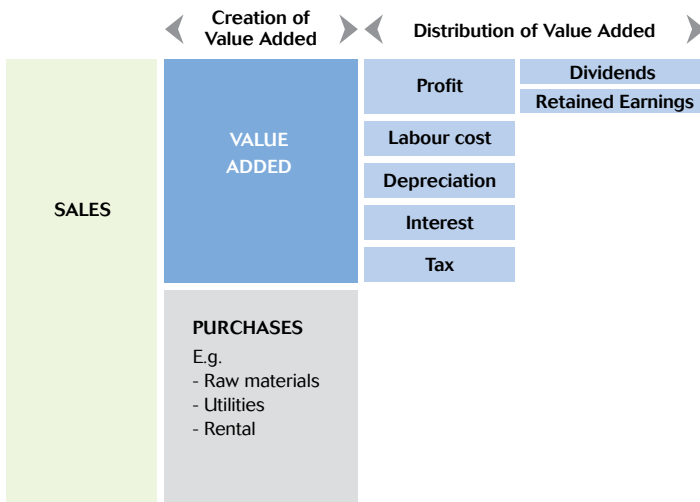
Value added is thus distributed as wages to employees, depreciation for reinvestment in machinery and equipment, interest to lenders of money, dividends to investors, and profits to the organisation:

Addition Method

$$\text{VALUE ADDED} = \text{LABOUR COST} + \text{DEPRECIATION} + \text{INTEREST} + \text{PROFIT} \\ + \text{OTHER DISTRIBUTED COSTS (e.g. TAX)}$$

Figure 2.3 shows that the creation of value added and its distribution are two sides of the same equation. It also emphasises the point that the computation of value added using either the Subtraction Method or the Addition Method will give the same result.

Figure 2.3: Creation and Distribution of Value Added



From the diagram, you will see that value added can be computed easily from your organisation's profit and loss statement. A separate data collection system for the computation of value added is therefore not necessary.

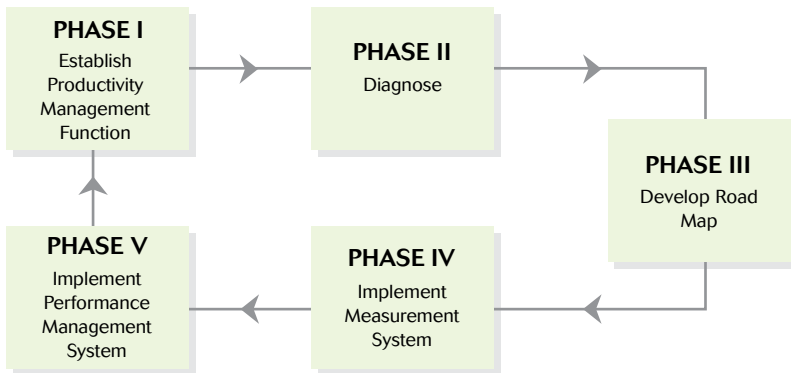
3 THE IMPACT FRAMEWORK

Overview

The Integrated Management of Productivity Activities (IMPACT) framework is designed to help you manage your organisation's productivity in a systematic manner. It includes the key productivity levers to address as you embark on productivity improvement initiatives.

Figure 3.1 shows an overview of the IMPACT framework and the critical actions within the framework. Some of the actions could take place simultaneously.

Figure 3.1: IMPACT Framework



Phase I – Establish Productivity Management Function

Step 1 Establish A Productivity Management Structure

Good management of productivity requires commitment and focus from top management. A dedicated organisational structure must be set up to facilitate the productivity improvement effort. Depending on your organisation's needs, size and characteristics, this structure may take the form of:

- a productivity management unit, headed by a Productivity Manager who reports directly to senior management; or
- a cross-functional team comprising productivity coordinators appointed from the various operational units.

The typical scope of work of a Productivity Manager is described in Annex A. This scope may be modified depending on the structure and complexity of the productivity management function within your organisation.

Step 2 Set Overall Productivity Goals

The next step is to set productivity goals that are in line with and integrated into your organisation's long-term strategic plans.

To ensure that these goals are met, key performance indicators and targets need to be identified and developed. The organisation's productivity performance can be monitored against these targets.

Step 3 Garner Participation and Commitment

A harmonious and open corporate culture is essential to continuous productivity improvement. This can be achieved through the following:

Commitment from Top Management

Top management set the direction of an organisation. For any productivity plan to succeed, senior leadership must be fully committed to the cause.

This commitment can be expressed through direct communication with employees on your productivity goals and strategies, as well as allocation of resources for productivity improvement. A senior employee could also be put in charge of the organisation's productivity efforts.

Communication and Creation of Awareness

Employees must have a clear understanding of productivity concepts, the organisation's productivity goals and how these goals will benefit them as well as the organisation. They then need to be armed with the right tools to improve their productivity and know how they can play a part in the productivity journey.

It is, therefore, important to set up open communication channels between departments, staff and management to facilitate exchange of ideas and information, create trust and engage employees.

Mobilisation of Employees

Employees should be involved in each stage of the productivity effort – from the setting of targets and development of initiatives, to the measurement and management of productivity performance. Their involvement helps to foster commitment and provides them with a sense of ownership.

Phase II – Diagnose

For any productivity intervention to be effective, you should have a thorough understanding of your organisation's current situation. This can be done through a productivity diagnosis to assess your organisation's "state of health", pinpoint its strengths and weaknesses, and recommend areas for improvement.

A productivity diagnosis covers:

- A qualitative assessment of your organisation's performance in relation to the productivity levers.
- A quantitative assessment of your organisation's performance based on certain key indicators that are linked to the various productivity levers.

These assessments are undertaken specifically to:

- Measure the gap between the current situation and the productivity goals set by your organisation.
- Identify your organisation's strengths and weaknesses.
- Determine the underlying causes of the gaps (for the weak areas).
- Determine areas for improvement.

Qualitative Assessment of Performance

Figure 3.2 shows the key levers that affect productivity. These levers are areas or actions that your organisation can focus on to improve productivity significantly.

Productivity levers do not operate in silos. Improvements made to one lever require complementary actions on some other levers, for it to be effective. For example, the adoption of new technology inevitably requires the complementary actions of training of employees and redesign of work processes. Similarly, weakness in one lever is likely to have an adverse effect on other levers.

Quantitative Assessment of Performance

There are 10 common indicators used to gauge an organisation's productivity performance:

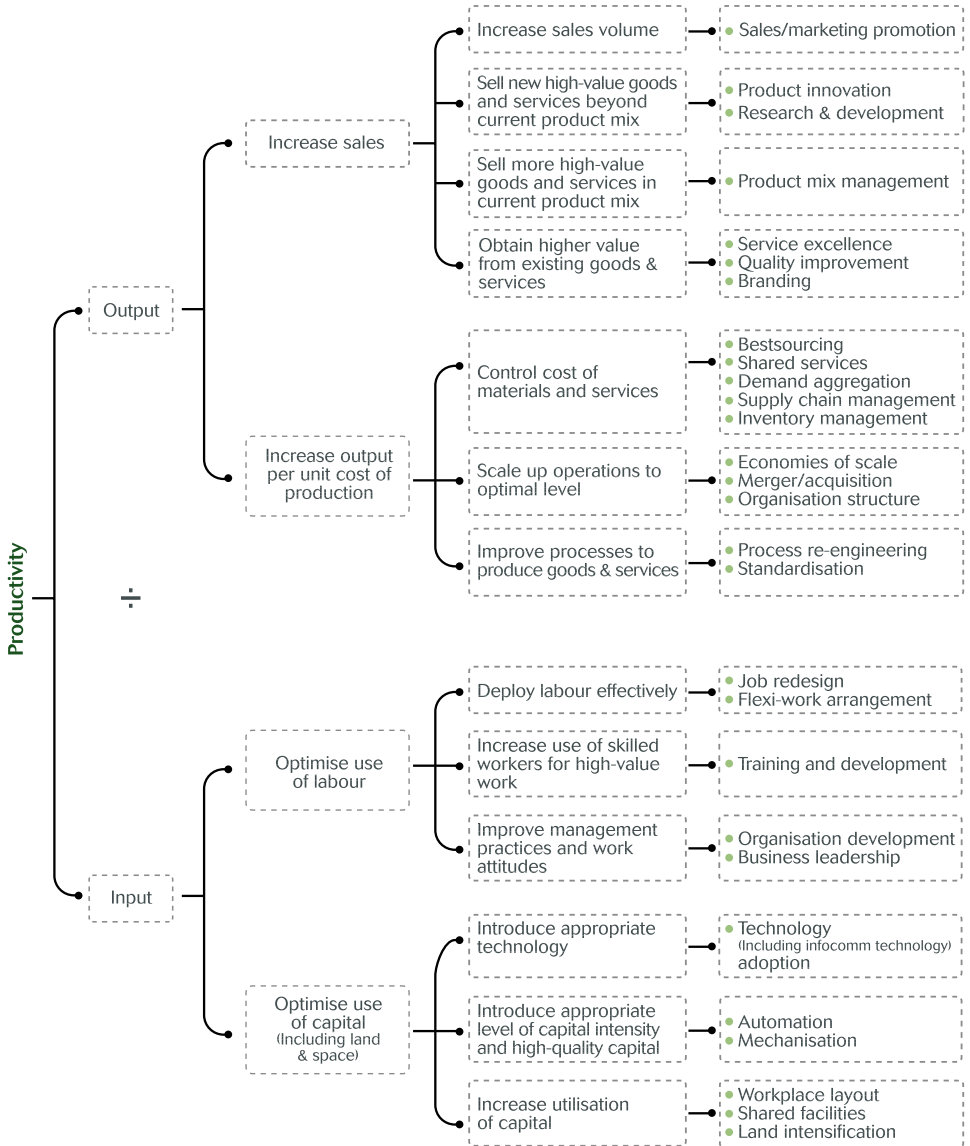
- Labour productivity
- Sales per employee
- Value added-to-sales ratio
- Capital productivity
- Sales per dollar of capital
- Capital intensity
- Labour cost competitiveness
- Labour cost per employee
- Profit-to-value added ratio
- Profit margin

Annex B provides details of these indicators and their relationships with one another. While these indicators may provide a good analysis of your organisation's overall performance, you should also measure the performance of the operational units and functions. Such measurements are further discussed in Phase IV.

Productivity Diagnostic Tool

Annex C provides an example of a simple diagnostic tool that allows you to conduct qualitative and quantitative assessments for your organisation. The findings from both assessments should be taken in totality before you decide on the course of action to pursue.

Figure 3.2: Productivity Levers



Phase III – Develop Road Map

After the diagnosis is completed, you will develop a productivity road map or action plan based on the findings obtained. The road map helps to direct specific activities towards your productivity goals in a coordinated and systematic manner.

Components of Productivity Road Map

A productivity road map addresses the following:

What affects productivity?

- Identify the specific actions that need to be taken in relation to the findings from the diagnosis.
- Spell out the key performance indicators, targets and deliverables for the actions to be taken.

Who affects productivity?

- Identify the units or individuals who will carry out the actions.
- Assign responsibilities and accountabilities to the parties identified.

When are the activities to be undertaken?

- Set milestones and timelines for the actions to be taken.

The actions should then be taken and monitored according to the road map.

Template for Productivity Road Map

You can use various templates to draw up your productivity road map. An example is shown in Figure 3.3.

Figure 3.3: Example of a Template for a Productivity Road Map

Productivity Lever	Improve processes to produce goods and services
Goal	Reduce time taken to serve a customer
Departments-in-charge	Lead: Operations Department Supported by: <ul style="list-style-type: none"> • Kitchen Department • Human Resources Department • IT Department

Key Performance Indicator	Current Performance	Target / Deliverable	Strategy & Programme	Timeline	
				Milestone	Deadline
<ul style="list-style-type: none"> • Average daily seat turnover (number of times a seat is used by different individuals in a day) • Preparation time per meal 	<ul style="list-style-type: none"> • 6 • 15minutes 	<ul style="list-style-type: none"> • 8 • 8minutes 	<ol style="list-style-type: none"> 1. Explore electronic ordering systems 2. Implement 5S to reduce waste and standardise procedures 	<ul style="list-style-type: none"> • Review ordering process • Explore different electronic ordering systems • Submit recommendations 	<ul style="list-style-type: none"> • November 2010 • November 2010 • December 2010
				<ul style="list-style-type: none"> • Review food preparation processes • Identify areas for improvement • Propose changes 	<ul style="list-style-type: none"> • November 2010 • November 2010 • December 2010
<ul style="list-style-type: none"> • Waiting time (time taken before an order is filled) per meal served 	<ul style="list-style-type: none"> • 20minutes 	<ul style="list-style-type: none"> • 10minutes 	<ol style="list-style-type: none"> 3. Implement customer service improvement programme 	<ul style="list-style-type: none"> • Conduct customer satisfaction survey • Conduct mystery audit 	<ul style="list-style-type: none"> • December 2010 • January 2011

Phase IV – Implement Measurement System

Importance of Productivity Measures

Productivity improvement initiatives must be complemented by a sound measurement system, which forms an integral part of an organisation's management information system. Productivity measures can be used to:

- Evaluate the effectiveness of action plans
- Monitor performance
- Set targets and formulate strategies
- Account to various stakeholders – customers, investors, employees, suppliers and funding agencies
- Link effort and reward for employees

Productivity Measurement

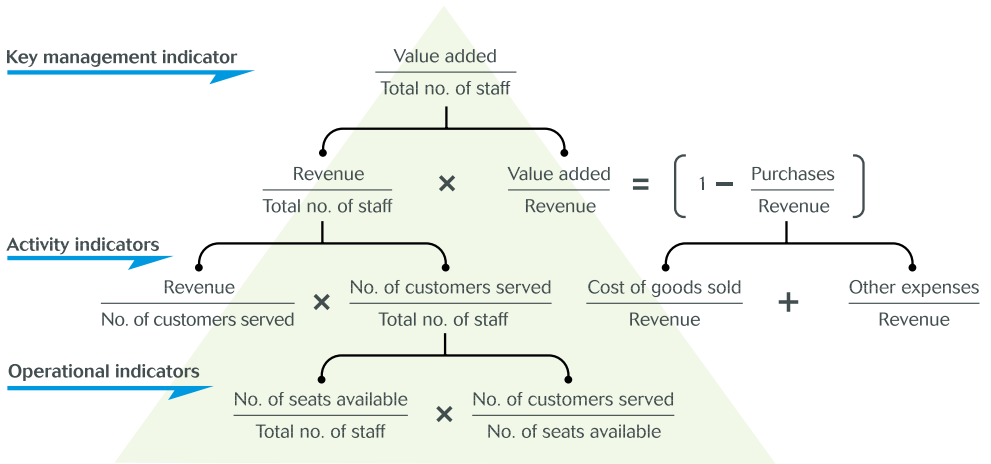
Since productivity is the relationship between output and the input used to produce that output, there are various ratios you can use to measure the performance of different operational units within your organisation. By adopting an integrated approach to productivity measurement, you can learn how each of your departments affects your organisation's overall performance.

Figure 3.4 shows an example of a family of interlinked measures used by a restaurant. Key management indicators at the top are broad indicators that provide management with information related to productivity and profitability. They are then broken down into activity indicators and operational indicators.

Activity indicators provide a snapshot of costs, activity levels and resource utilisation rates, which are particularly useful for middle and higher management.

Operational indicators are usually physical ratios that address the operational aspects that need to be monitored and controlled.

Figure 3.4: Example of an Integrated Approach to Productivity Measurement



You should consider the following points in selecting productivity ratios:

Ratios should measure something significant.

Only elements that have an important impact on the business performance should be measured.

Ratios should be meaningful and action-oriented.

Ratios used must be relevant to the objectives and operations of your organisation. They should explain the pattern of performance and preferably signal a course of action.

Component parts of the ratios should be reasonably related.

The numerator and the denominator should correspond with each other. For example, it would not be appropriate to relate sales with the number of employees in the human resources department as they are not directly responsible for sales.

Phase V – Implement Performance Management System

Productivity measurement tells an organisation how it is performing and why, and what it should do in view of its performance. The next step is to use these measures to manage productivity performance.

Performance management covers two main areas: (a) activities to monitor performance; and (b) activities to reinforce performance and motivate employees.

Activities to Monitor Performance

Productivity Level and Growth

An organisation's productivity performance can be monitored in terms of the productivity level measured by the various productivity ratios, or the change in productivity level over time.

Productivity level represents the efficiency and effectiveness of resource utilisation achieved at a given point in time. Comparison of productivity levels must be made between similar entities. For example, the management of a restaurant chain may compare the labour productivity of outlet A against that of outlet B.

The change in productivity level over time is expressed as a percentage. It indicates dynamism and the potential for achieving higher productivity levels. An organisation with a consistently high productivity growth rate may overtake another with a negative growth rate, even if its current productivity level is lower.

Comparison of Performance

To know how well your organisation fares in your productivity efforts, a comparison of your organisation's performance against some standard has to be made. This can be done across time and space, with external entities (e.g. benchmarks and organisations within the same industry) and within the organisation (e.g. between departments). Such comparisons provide valuable information on your organisation's relative standing vis-à-vis your competitors and the best-in-class performers.

Organisations who want to assess themselves against their competitors can use the Inter-firm Comparison (IFC) tool. IFC studies involve comparing productivity ratios of organisations in the same industry. Their identities are kept confidential.

Within the organisation, comparisons can be made against its productivity goals and targets to evaluate the effectiveness of the productivity efforts; and against its past performance for trend analysis. Comparisons can also be made across different operational units and different employees for performance appraisals.

Review and Feedback Mechanism

Information on any organisation's productivity performance is rendered useless if it does not lead to further improvements. It is therefore important to put in place a review and feedback mechanism to gather valuable information for strategic planning and training purposes. The information should be made readily available to all employees to improve the performance of the organisation or the unit that they are in.

Activities to Reinforce Performance and Motivate Employees

To sustain the productivity drive, a clear link between rewards and achievements must be established. The wealth generated by the organisation should be distributed back to those who have contributed to the production process.

Productivity incentive schemes can take different forms:

Recognition Schemes

Awards can be given out to individuals or teams to encourage continuous productivity improvements.

Productivity Gain-Sharing Schemes

The value added created by the organisation is shared with employees, based on a formula agreed upon by both management and employees.

Staff Performance Appraisal Linked to Productivity Improvements

Employees' contributions to productivity efforts are recognised in their performance appraisals. Good performers should be rewarded with higher bonuses or salary increments.

Productivity incentive schemes can shape employees' behaviour and align their objectives with those of the organisation. Employees should have a clear understanding of how they are being appraised and the kind of performance that is recognised by management.

4 CONCLUSION

In 6th Century BC, Sun Tzu, a Chinese military strategist and author of *The Art of War*, wrote: "Know thy self, know thy enemy. A hundred battles, a hundred victories."

This guide helps you to know your organisation better and to know how it stands in relation to others. There is no guarantee that your organisation will have a hundred victories after going through a hundred battles. However, use of the IMPACT framework and regular assessment of performance should stand the organisation in good stead against the competition.

Since this guide is intended as a first-level help to any organisation that wants to embark on the productivity journey, it has introduced the various concepts, frameworks and tools at a generic level. Those who want to delve deeper into the productivity issue will have to consider the relevant industry- and enterprise-specific factors that impinge on their performance.

Nevertheless, the key message about the need for an integrated approach to the management of productivity activities remains unchanged.

ANNEX A

Scope of Work of a Productivity Manager

The duties of a productivity manager include planning, coordinating, controlling and monitoring of productivity programmes within an organisation. The productivity manager is also responsible for getting cooperation from all management levels to achieve the productivity goals and objectives that have been set.

Attributes of a Productivity Manager

Knowledge

- Well-versed in productivity concepts, frameworks and tools
- Prior knowledge or relevant experience in the organisation's sector of work

Abilities & skills

- Good people management and negotiation skills
- Strategic view of the organisation's productivity objectives

Key Responsibilities of a Productivity Manager

- Establish productivity management structure, responsibilities and accountabilities
- Mobilise employees to participate in the productivity drive
- Manage and facilitate actions taken to improve productivity
- Establish productivity measurement system and performance management system

Establish structure, responsibilities and accountabilities

- Review current reporting structure and assess if it is suitable for productivity management accountability
- Assess need for a productivity management committee or unit within the organisation
- Establish productivity accountability at different management levels
- Decide process of setting overall productivity goals

Mobilise employees

- Educate employees on:
 - i. Meaning and scope of productivity, its benefits and how it can be improved and measured
 - ii. Role of every employee and how to adopt a positive mindset towards productivity initiatives

- Communicate to employees on:
 - i. Organisational objectives in productivity
 - ii. Organisation's targets and overall direction and strategy to achieve its productivity objectives
- Involve employees at different levels in the productivity drive by:
 - i. Engaging them throughout the whole productivity journey - planning, development of measures and implementation of initiatives
 - ii. Showing them the impact of their efforts in improving productivity and the consequent benefits

Manage and facilitate productivity improvements

- Diagnose
 - i. Assess performance in relation to the key productivity levers
 - ii. Identify areas for improvement and productivity levers to address
- Develop road map
 - i. Work out action plan to address findings from diagnosis
 - ii. Set targets and assign responsibilities
 - iii. Monitor progress of actions taken

Establish productivity measurement system and performance management system

- Identify and implement measures to track productivity performance against targets and benchmarks
- Identify and implement employee incentive schemes to motivate employees

ANNEX B

Key Productivity Indicators

Some key productivity indicators are commonly used to diagnose an organisation's productivity performance, from the angles of both creation and distribution of value added, and to compare it against other organisations. These indicators are shown in Figure 1.

Figure 1: Key Productivity Indicators

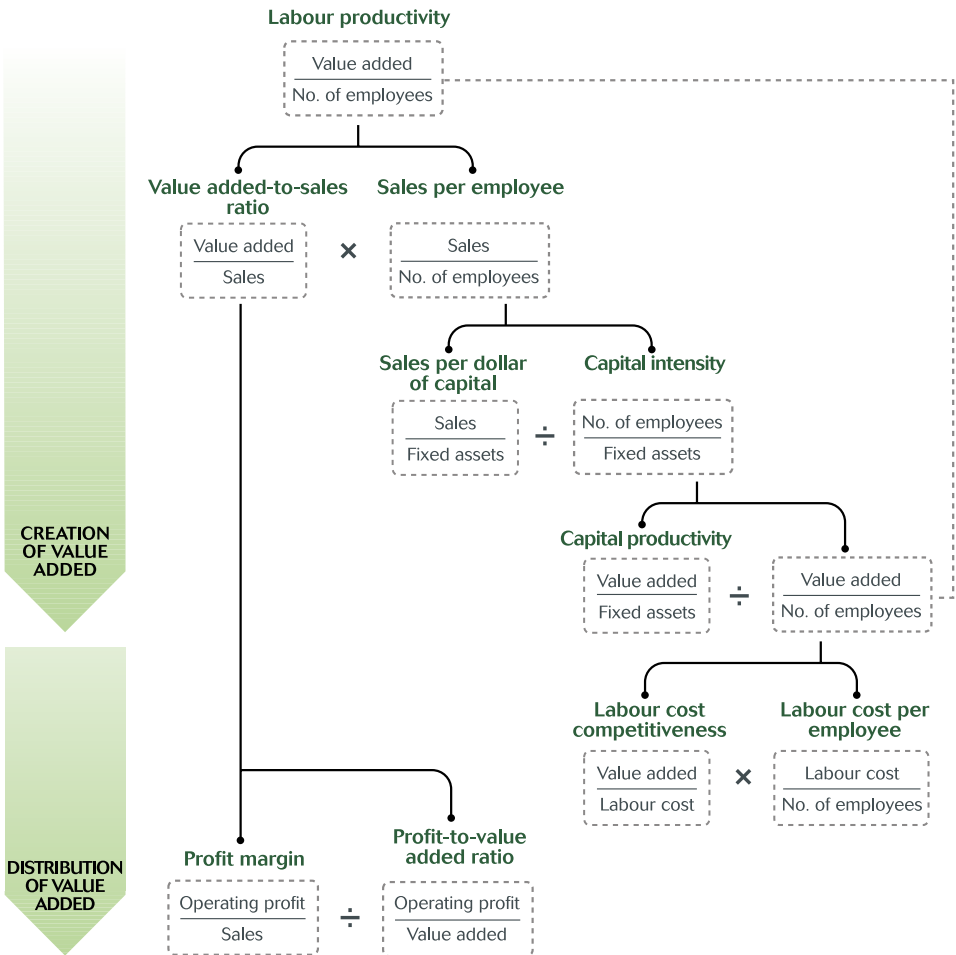
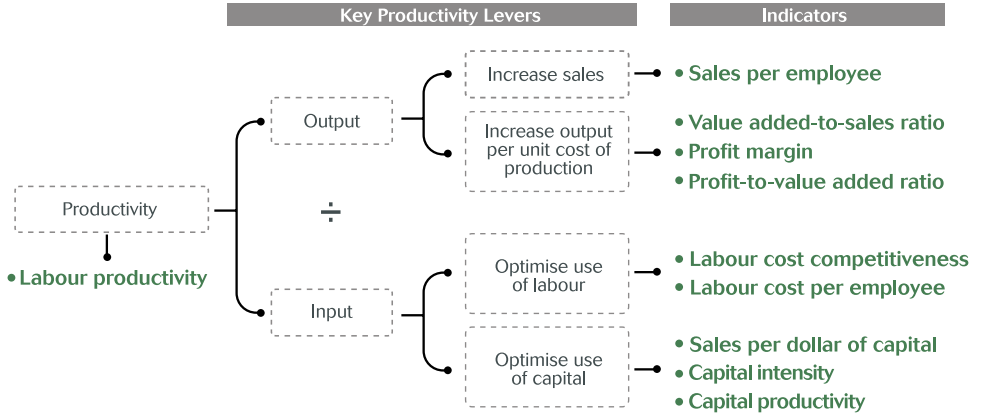


Figure 2 shows how the key productivity indicators are linked to the key productivity levels.

Figure 2: Indicators of Organisation's Performance in Relation to the Key Productivity Levels



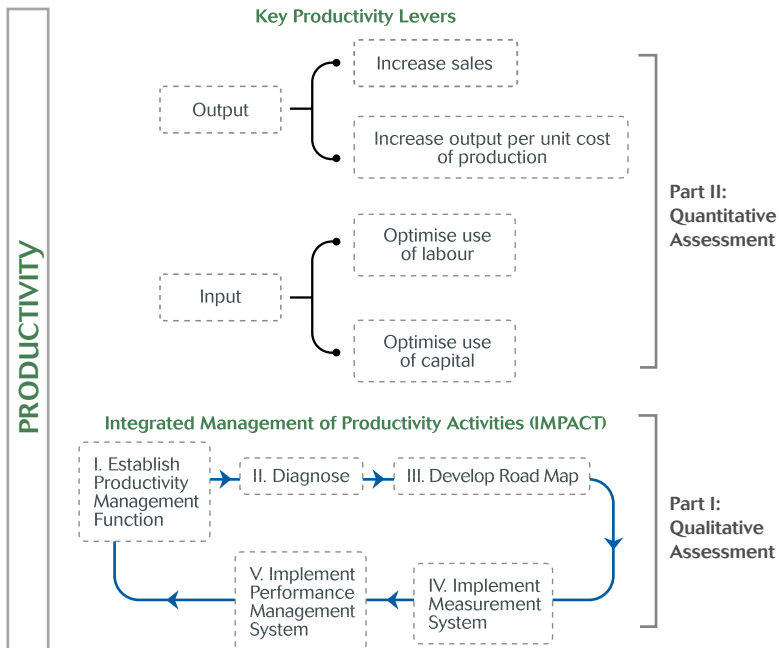
The definitions and significance of the indicators are summarised below.

Indicator	What it measures
A) Productivity	
1. Labour productivity	Efficiency and effectiveness of employees in the generation of value added
B) Increase sales	
2. Sales per employee	Efficiency and effectiveness of marketing strategy
C) Increase output per unit cost of production	
3. Value added-to-sales ratio	Proportion of sales created by the organisation over and above purchased materials and services
4. Profit margin	Proportion of sales left to the organisation after deducting all costs
5. Profit-to-value added ratio	Operating profit allocated to the providers of capital as a proportion of value added
D) Optimise use of labour	
6. Labour cost competitiveness	Efficiency and effectiveness of the organisation in terms of its labour cost
7. Labour cost per employee	Average remuneration per employee
E) Optimise use of capital	
8. Sales per dollar of capital	Efficiency and effectiveness of fixed assets in the generation of sales
9. Capital intensity	Extent to which the organisation is capital-intensive
10. Capital productivity	Efficiency and effectiveness of fixed assets in the generation of value added

ANNEX C

IMPACT Assessment

This IMPACT assessment is used as a first-level diagnosis of an organisation's productivity performance. The diagram below shows that an organisation's productivity performance is dependent on key productivity levers, supported by an integrated management of productivity activities. This assessment helps to gauge the effectiveness of the organisation's productivity management function, identify the key productivity levers to address and recommend areas for improvement.



Parts of Assessment

There are three parts to this assessment:

Part I: Qualitative assessment of the organisation's productivity management function and productivity levers.

Part II: Quantitative assessment of the organisation's productivity performance based on the key productivity indicators.

Part III: Overall assessment and recommendations based on the findings from Parts I and II.

Who Should Conduct the Assessment?

Senior management or productivity managers in the organisation should conduct the assessment.

PART I**Qualitative Assessment of Productivity Management Function and Key Productivity Levers**

Section 1 assesses the effectiveness of your organisation's productivity management function, and Section 2 evaluates its productivity levers.

Section 1 : Productivity Management

On a scale of 0 to 4 (0 = not at all, 4 = to a great extent), rate the statements below to reflect the current state of productivity management in your organisation. Add the score obtained for each area of the productivity management function.

A. Establish Productivity Management Function

Score

1. There is a productivity management function / clear accountability for productivity (e.g. productivity manager)
 2. Productivity improvement goals are set for the organisation
- Total =

B. Diagnose

3. Key factors that affect output (production and sales) and use of resources, as well as their inter-linkages, are identified
 4. A productivity diagnosis is undertaken to identify areas for improvement
- Total =

C. Develop Road Map

5. There is an overall productivity plan, which is integrated into the strategic plan
 6. There are specific action plans implemented to improve productivity
- Total =

D. Implement Productivity Measurement & Performance Management Systems

Score

7. There is a system to measure productivity at various levels	<input type="text"/>
8. Benchmarks/best-in-class performance are identified	<input type="text"/>
9. Targets are set for key productivity measures	<input type="text"/>
10. Productivity performance at various levels is monitored	<input type="text"/>
11. Productivity audits are performed	<input type="text"/>
12. Staff performance appraisals are aligned to productivity achievements	<input type="text"/>
13. There is an employee incentive scheme that is linked to productivity achievements	<input type="text"/>
Total =	<input type="text"/>

Section 2 : Current State in Addressing Key Productivity Levers

On a scale of 0 to 4 (0 = not at all, 4 = to a great extent), rate the statements below to reflect the current state in addressing key productivity levers in your organisation. Indicate NA if the statement does not apply or if you do not know the answer.

Add the score obtained for each productivity lever.

OUTPUT

A. Increase Sales

Score

<i>a. Increase sales volume</i>	
i. Set stretch and challenging sales growth targets	<input type="text"/>
ii. Implement a marketing strategy to increase sales	<input type="text"/>
<i>b. Sell new high-value goods and services beyond current product mix</i>	
i. Conduct market research on potential new goods/services	<input type="text"/>
ii. Carry out product development plan	<input type="text"/>
<i>c. Sell more high-value goods and services in current product mix</i>	
i. Identify clear market segments for products in current product mix, and the needs of these segments	<input type="text"/>
ii. Explore different product mix	<input type="text"/>
<i>d. Obtain higher value from existing goods and services</i>	
i. Focus on service excellence/product quality improvements	<input type="text"/>
ii. Engage in branding for products	<input type="text"/>
Total =	<input type="text"/>

B. Increase Output Per Unit Cost of Production

a. Control cost of materials and services

- i. Engage in best sourcing practices
- ii. Explore shared services and/or demand aggregation
- iii. Engage in supply chain management and inventory management

Score

b. Scale up operations to optimal level

- i. Identify and implement measures to reach optimal level of operations to achieve economies of scale
- ii. Explore possibilities to achieve an optimal organisation structure

c. Improve processes to produce goods and services

- i. Implement measures to maximise output with given resources
- ii. Implement measures to reduce the amount and cost of resources / inputs used to produce the output
- iii. Streamline business/work processes

Total =

--

INPUT

C. Optimise Use of Labour

a. Deploy labour effectively

- i. Engage in job redesign
- ii. Implement real-time labour redeployment to meet demand fluctuations
- iii. Create flexi-work arrangement

Score

b. Increase use of skilled workers for high-value work

- i. Analyse manpower requirements (i.e. need for skilled or unskilled workers) in business decisions
- ii. Upgrade skills of workforce

c. Improve management practices and work attitudes

- i. Implement best-in-class management practices
- ii. Communicate productivity goals to employees
- iii. Assess work attitudes
- iv. Assess management practices

Total =

--

D. Optimise Use of Capital (including land and space)

a. Introduce appropriate technology

- i. Keep abreast of technology developments
- ii. Review state of technology in the organisation

Score

b. Introduce appropriate level of capital intensity and high-quality capital

- i. Mechanise and automate processes where possible
- ii. Review effectiveness of capital equipment in various processes

c. Increase utilisation of capital

- i. Set stretch/challenging targets for capital utilisation rates and track achievements
- ii. Implement a strategy to effect high level of capital utilisation

d. Optimise use of space

- i. Review space utilisation in relation to business volume and execute an optimisation plan
- ii. Consider shared facilities

Total =

SCORING

Fill in the score obtained for each area of assessment, and compute the percentage of the score obtained out of the maximum score.

Section 1 | Productivity Management

Area of Assessment	Maximum Score	Score	%
	(a)	(b)	$[(b) \div (a)] \times 100\%$
A. Establish Productivity Management Function	8		
B. Diagnose	8		
C. Develop Road Map	8		
D. Implement Productivity Measurement and Performance Management Systems	28		
Total for Section 1	52		

Section 2 | Current State in Addressing Key Productivity Levers

Area of Assessment	Total No. of Statements	No. of Statements with "NA"	Maximum Score	Score	%
	(c)	(d)	$(e) = [(c) - (d)] \times 4$	(f)	$[(f) \div (e)] \times 100\%$
Output					
A. Increase Sales	8				
B. Increase Output per Unit Cost of Production	8				
Input					
C. Optimise Use of Labour	9				
D. Optimise Use of Capital (including land / space)	8				
Total for Section 2					
Total for Section 1 + Section 2					

- > 70% Relatively strong in productivity management and improvement efforts.
- 30% – 70% Equipped with the fundamentals required to manage productivity.
- < 30% Weak in productivity management and improvement efforts.

PART II Quantitative Assessment of Productivity Performance Based On Key Productivity Indicators

Section 1 shows the calculation of value added. Section 2 shows the computation and evaluation of the key productivity indicators based on the figures provided in Section 1.

The following information is required to complete the assessment:

- Financial statements (profit and loss statements, and balance sheets)
- Number of employees

Section 1 : Calculation of Value Added

There are two methods to calculate value added - (a) the subtraction method and (b) the addition method. Either one of them can be used to compute value added using the templates provided in Section 1-A (subtraction method) and Section 1-B (addition method). A summary of the two methods is given below.

Subtraction Method

$$\text{VALUE ADDED} = \text{SALES} - \text{COST OF PURCHASED GOODS AND SERVICES}$$

Addition Method

$$\text{VALUE ADDED} = \text{LABOUR COST} + \text{DEPRECIATION} + \text{INTEREST} + \text{PROFIT} + \text{OTHER DISTRIBUTED COSTS (e.g. TAX)}$$

Fill in the template with financial information over a 3-year period. The types of income or expenditure can vary, depending on your organisation's operations. Compute the value added for each year using the formula stated in the template.

Section 1-A | Calculation of Value Added Using the Subtraction Method

S/No.	Item	Formula	Year 1	Year 2	Year 3 (latest year)
			\$	\$	\$
1	REVENUE				
2	Less: Opening Stocks of Finished Goods		_____	_____	_____
3	Add: Closing Stocks of Finished Goods		_____	_____	_____
4	Gross Output	1-2+3	_____	_____	_____
	PURCHASED MATERIALS AND SERVICES				
	Materials Used				
5	Direct raw material		_____	_____	_____
6	Indirect raw material		_____	_____	_____
7	Stock obsolescence		_____	_____	_____
8	Others		_____	_____	_____
9	Sub-Total (Materials Used)	add 5 to 8	_____	_____	_____
	Production Expenses				
10	Freight and handling		_____	_____	_____
11	Casual labour		_____	_____	_____
12	Insurance (excl insurance for employees)		_____	_____	_____
13	Transport charges		_____	_____	_____
14	Utilities		_____	_____	_____
15	Maintenance of factory building		_____	_____	_____
16	Maintenance of plant and machinery		_____	_____	_____
17	Hire of plant and machinery		_____	_____	_____
18	Others		_____	_____	_____
19	Sub-Total (Production Expenses)	add 10 to 18	_____	_____	_____
	Administrative & General Expenses				
20	Printing, stationery & office supplies		_____	_____	_____
21	Insurance (excl insurance for employees)		_____	_____	_____
22	Rental		_____	_____	_____
23	Transport charges		_____	_____	_____
24	Company vehicle expenses		_____	_____	_____
25	Advertising		_____	_____	_____
26	Entertainment		_____	_____	_____
27	Refreshment		_____	_____	_____
28	Fax and telephone charges		_____	_____	_____
29	Courier and postage charges		_____	_____	_____
30	Maintenance of office equipment		_____	_____	_____
31	Travelling expenses		_____	_____	_____
32	Audit, secretarial & professional fee		_____	_____	_____
33	Newspapers and periodicals		_____	_____	_____
34	Stamp duty, filing & legal charges		_____	_____	_____
35	Bank charges		_____	_____	_____
36	Others		_____	_____	_____
37	Sub-Total (Admin & General Expenses)	add 20 to 36	_____	_____	_____
38	Total Purchased Materials and Services	9+19+37	_____	_____	_____
39	VALUE ADDED	4 - 38	_____	_____	_____

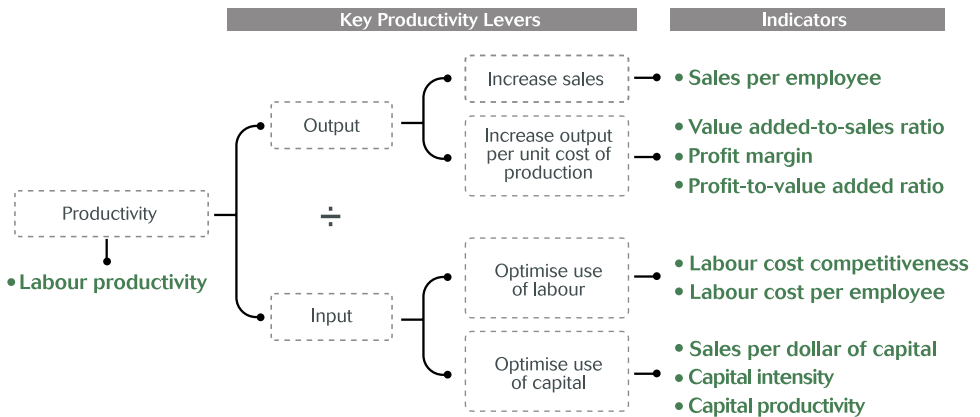
Section 1-B | Calculation of Value Added Using the Addition Method

S/No.	Item	Formula	Year 1	Year 2	Year 3 (latest year)
			\$	\$	\$
OPERATING PROFIT/(LOSS)					
1	Profit/(Loss) Before Income Tax				
	Less: Non-operating income				
2	Profit on Sale of Fixed Assets				
3	Gain on Foreign Exchange				
4	Other Income				
	Add: Non-operating expenses				
5	Bad Debts				
6	Donations				
7	Loss on Foreign Exchange				
8	Loss on Sale of Fixed Assets				
9	Others				
10	Total Operating Profit/(Loss)	1-(2+3+4)+(add 5 to 9)			
LABOUR COST					
11	Salaries				
12	Bonuses				
13	CPF				
14	Staff Welfare				
15	Medical Expenses				
16	Training Expenses				
17	Directors' Fees				
18	Insurance for employees				
19	Others				
20	Total Labour Cost	add 11 to 19			
INTEREST ON BORROWINGS					
21	Bank Interest & Charges				
22	Loan Interest				
23	Hire Purchase Interest				
24	Others				
25	Total Interest on Borrowings	add 21 to 24			
DEPRECIATION					
26	Buildings				
27	Plant, Equipment & Machinery				
28	Others				
29	Total Depreciation	add 26 to 28			
TAXES					
30	Customs & Excise Duties				
31	Property Tax				
32	Foreign Worker Levy				
33	Others (excl income tax & GST)				
34	Total Taxes	add 30 to 33			
35	VALUE ADDED	10+20+25+29+34			

Section 2 : Calculation and Evaluation of Key Productivity Indicators

The indicators shown in Figure 1 are the key productivity indicators commonly used to diagnose an organisation's productivity performance.

Figure 1: Indicators of Organisation's Performance on the Key Productivity Levels



To compute the key productivity indicators, the information shown in Table 1 is required in addition to the value added calculated in Section 1.

Table 1: Additional data required for calculation of key productivity indicators

	Year 1	Year 2	Year 3 (latest year)
Number of employees ¹ (average for period)			
Sales (\$)			
Labour cost (\$)			
Fixed assets at net book value ² (average for period) (\$)			
Operating profit (before interest and tax) (\$)			

¹ Refers to all categories of employees, including working directors/proprietors/partners, unpaid family workers and part-time workers. Part-time workers should be converted to their full-time equivalent.

² Excludes work-in-progress

Calculation of Key Productivity Indicators

Calculate the key productivity indicators using the information provided in Section 1 and Table 1. The formulas for the indicators are shown in Table 2.

Table 2: Calculation of key productivity indicators

Indicator	Formula	Year 1	Year 2	Year 3 (latest year)
1) Labour productivity (\$)	$\frac{\text{Value added}}{\text{Number of employees}}$			
2) Sales per employee (\$)	$\frac{\text{Sales}}{\text{Number of employees}}$			
3) Value added-to-sales ratio (%)	$\frac{\text{Value added}}{\text{Sales}}$			
4) Profit margin (%)	$\frac{\text{Operating profit}}{\text{Sales}}$			
5) Profit-to-value added ratio (%)	$\frac{\text{Operating profit}}{\text{Value added}}$			
6) Labour cost competitiveness (times)	$\frac{\text{Value added}}{\text{Labour cost}}$			
7) Labour cost per employee (\$)	$\frac{\text{Labour cost}}{\text{Number of employees}}$			
8) Sales per dollar of capital (times)	$\frac{\text{Sales}}{\text{Fixed assets}}$			
9) Capital intensity (\$)	$\frac{\text{Fixed assets}}{\text{Number of employees}}$			
10) Capital productivity (times)	$\frac{\text{Value added}}{\text{Fixed assets}}$			

Evaluation of Key Productivity Indicators

To know how well your organisation fares in its productivity efforts, a comparison should be done against the industry average. Figures on the industry average can be obtained from the Singapore Department of Statistics (www.singstat.gov.sg) and other government agencies overseeing the respective industry sectors³.

³ For example, statistics on the manufacturing sector are published by the Singapore Economic Development Board (www.edb.gov.sg) in its annual Report on the Census of Manufacturing Activities.

Fill in a year's results of the key productivity indicators and compare them against the industry average in Table 3. Calculate the variance between your organisation's results and the industry average.

Table 3: Comparison of key productivity indicators against industry average

Indicator	Year		% Variance	Assessment e.g. low, average. (See note to Table 3)
	Organisation	Industry Average		
	(a)	(b)	$\frac{\{(a) - (b)\}}{(b)} \times 100\%$	
1) Labour productivity (\$)				
2) Sales per employee (\$)				
3) Value added-to-sales ratio (%)				
4) Profit margin (%)				
5) Profit-to-value added ratio (%)				
6) Labour cost competitiveness (times)				
7) Labour cost per employee (\$)				
8) Sales per dollar of capital (times)				
9) Capital intensity (\$)				
10) Capital productivity (times)				

Note

How organisation's performance compares against industry average	Assessment
> 30% below industry average	Very low
10 – 30% below industry average	Low
± 10% of industry average	Average
10 – 30% above industry average	High
> 30% above industry average	Very high

A comparison can also be made against your organisation's past performance for trend analysis, or against industry benchmarks and best-in-class performers for further improvement.

PART III Overall Assessment and Recommendations

The findings from the assessments performed in Parts I and II should be taken in totality before you decide the course of action to pursue. Senior management should discuss and agree on the key areas of focus, guided by the following:

- **Productivity management total score of less than 30% (Part I)**

This indicates that the organisation is weak in productivity management and improvement efforts. Particular attention should be given to areas where the score achieved is less than 30% of the maximum score.

- **Productivity indicators which fall below 30% of the industry average (Part II)**

Productivity indicators are interlinked. The organisation should assess the performance of an indicator in relation to other indicators and consider the internal and external factors affecting it.

The organisation should determine the underlying causes for any performance that falls below expectations and industry averages, and take specific actions to improve its productivity.

Productivity management is a journey of continuous improvements. Organisations that score well in the IMPACT assessment should continue to manage productivity in a systematic manner. This will ensure that the productivity achievements are sustainable in the long run.

For more information on productivity and self-help tools, visit the Productivity@Work website at www.enterprisework.gov.sg

SPRING Singapore

1 Fusionopolis Walk, #01-02, South Tower, Solaris, Singapore 138628

Tel: +65 6278 6666 - Fax: +65 6278 6667

www.spring.gov.sg