



Skills Framework for Food Manufacturing

A Guide to Occupations and Skills

An initiative of

SKILLSfuture

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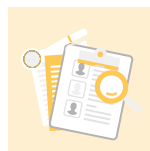
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About the Skills Framework

The Skills Framework is a SkillsFuture initiative developed for the Singapore workforce to promote skills mastery and lifelong learning. Jointly developed by SkillsFuture Singapore, Workforce Singapore, and Enterprise Singapore, together with employers, industry associations, education and training providers and unions, the Skills Framework for Food Manufacturing provides useful information on:



With the Skills Framework, individuals are equipped to make informed decisions about career choices, as well as take responsibility for skills upgrading and career planning.



Assess Career Interests

- Discover employment opportunities
- Understand career pathways
- Recognise personal attributes required



Prepare for Desired Jobs

- Understand skills and competencies required



Find Avenues to Close Skills Gaps

- Identify relevant training programmes to equip oneself with the required skills and competencies
- Participate in on-the-job training opportunities provided by companies



Renew, Upgrade and Deepen Skills

- Plan for career development/transition
- Recognise skills and competencies required for the intended job role
- Identify training programmes to upgrade and deepen skills

Food Manufacturing: Feeding the Future

The food manufacturing sector, comprising 948 establishments and employing about 30,000 workers, contributed about S\$3.8 billion to Singapore's Gross Domestic Product (GDP) in 2016. It has been identified as a key growth sector and remains one of the most resilient industries in Singapore. In the last 10 years (2007-2017), the sector's value-add (VA) grew at a Compound Annual Growth Rate (CAGR) of 11.6%, while the average manufacturing sector grew at only 2.7%¹.

By 2050, global food systems will need to produce 50% more food to feed the growing population of 9 billion people. Urbanisation and rising affluence have also placed greater emphasis on healthier and more functional food choices.

In order to remain self-sufficient and globally competitive, local food operators need to innovate by developing alternative food sources and adopting food technologies to accelerate commercialisation efforts. While at least a third of our food manufacturers are innovating today, there is a need to build deeper capabilities. A stronger talent pool is also required to support the industry transformation.

Under the Food Manufacturing Industry Transformation Map (ITM), 2,000 new jobs for PMETs (professionals, managers, executives and technicians), are projected to be added to the industry by 2020, including emerging job roles such as food technologists and food process engineers. The emphasis on e-commerce, marketing and data analytics, franchising and international marketing are also expected to generate more jobs, due to increasingly diversified retail channels within and across borders.

As the sector undergoes transformational changes, businesses and workers at all levels will need to be equipped with deeper knowledge and skill sets to meet the changing needs of the industry. These transformations will also bring about ample new and exciting job opportunities for both fresh graduates and mid-career professionals considering a career in the sector.



¹Source: Singapore Department of Statistics.

Key Statistics



948 establishments



Employs about **30,000 workers**



Contributed to **1% of Singapore's GDP**



\$10.1 Billion in total output



Contributed **\$3.8 Billion** in value-added



Total export output of
\$6 Billion in 2016

Source:
The Singapore Department of Statistics and Enterprise Singapore

Future Developments

1

Food innovation

Encourage innovation across the entire value chain from use of novel ingredients to processing techniques to packaging innovation to distribution channels.



2

Internationalisation

Expand globally with stronger product appeal and excellent channel development.



Three key ingredients to drive growth

3

Productivity boost with automation

Utilise advanced technologies and automation to increase productivity.



Desired Attributes and Skills in Demand

A career in the food manufacturing sector provides diverse opportunities to individuals seeking rewarding and enriching careers. If you love food, enjoy formulating new products to satisfy customers' changing tastes and preferences, or want to make a positive impact to the health and nutrition of people, the food manufacturing sector offers opportunities to develop your passion and grow your career.

As the sector continues to transform, these are some examples of skills in demand now and to take advantage of emerging trends. Those seeking successful careers in the food manufacturing sector can set themselves apart by developing these attributes and acquiring these skills.

DESIRED ATTRIBUTES



Hygiene Conscious

Recognises the implicit responsibility for ensuring food safety and compliance to quality and hygiene standards in food products



Creative

Able to think of new and innovative ways to develop new products and processes to work more effectively



Analytical

Enjoys analysing things from all angles to solve problems



Team Player

Understands that each person is part of a larger team working together to bring about success at the workplace



Meticulous

Pays attention to details and accuracy

SKILLS IN DEMAND



Food Science and Technology Skills

- Active and Smart Packaging
- Food Product Improvement
- New Product Introduction



International Business Development Skills

- E-Commerce Campaign Management
- International Marketing Programmes Management
- New Export Market Entry Strategy Formulation



Automated Manufacturing Skills

- Advanced Processing Technology
- Green Manufacturing Implementation
- Data Synthesis



Management Skills

- Innovation Management
- Strategy Development

Take Your Career Further

A skilled workforce is essential in sustaining Singapore's global competitiveness as a leading food and nutrition hub. There is a wide range of initiatives and schemes available to both individuals and employers to promote skills acquisition and upgrading.



FOR INDIVIDUALS

Education and Career Guidance

Education and Career Guidance (ECG) is about equipping students, as well as adults, with the necessary knowledge, skills and values to make informed education and career decisions. With the help of trained ECG counsellors, students will be exposed to a wide range of education and career options, and given the opportunities to make informed post-secondary education choices. Singaporeans in the workforce can benefit from career coaching, employability skills workshops, networking sessions through the Workforce Singapore (WSG) Career Centres and the Employment and Employability Institute (e2i).

Enhanced Internships

The Enhanced Internships are designed to provide students with a more meaningful internship experience through more structured learning and support at the workplace. Participating companies will work closely with the Institute of Technical Education (ITE) and polytechnics to deliver a positive and meaningful internship experience for their interns.

SkillsFuture Credit

Credit of \$500 for all Singapore Citizens aged 25 and above to defray costs for a wide range of skills-related courses to encourage skills development and lifelong learning.

SkillsFuture Earn and Learn Programme

A work-learn programme designed to give fresh graduates from the ITE and polytechnics a headstart in careers related to their discipline of study. Suitable candidates will be matched with a job related to their field of study, and undergo structured on-the-job training and mentorship in participating companies. They can also gain industry experience and attain an industry-recognised certification concurrently.

SkillsFuture Fellowships

Monetary award of \$10,000 to recognise Singapore Citizens with deep skills, who are champions of lifelong learning, and committed to contributing to the skills development of others.

SkillsFuture Mid-Career Enhanced Subsidy

Singaporeans aged 40 and above will receive higher subsidies of up to 90% of course fees for over 8,000 SSG-supported courses and at least 90% of programme cost for Ministry of Education-subsidised full-time and part-time courses.

SkillsFuture Study Award

The monetary award of \$5,000 enables adults in their early and mid-career to develop and deepen their skills in the food manufacturing sector.

Take Your Career Further



FOR EMPLOYERS

HR Diagnostic Tool

The HR Diagnostic tool provides a diagnosis of the state of the SME's HR practices and processes, identifies strengths and areas of improvement. It then recommends and prioritises solutions to enhance human capital capabilities for business growth.

SkillsFuture SME Mentors Programme

The SkillsFuture SME Mentors Programme aims to enhance the capabilities of SMEs in the area of learning and development. Qualified SkillsFuture SME Mentors will be deployed to SMEs on a 9-month mentoring programme to help diagnose learning and development gaps, provide guidance on developmental plans and upgrade the training capability of supervisors in SMEs.

Enterprise Development Grant (EDG)

EDG supports SMEs in engaging HR consultants to build their capabilities across key HR areas to attract, develop and retain their talent. EDG supports up to 70% funding for qualifying expenses such as consultancy, training, certification and equipment costs.

EDG combines SPRING Singapore's Capability Development Grant (CDG) and IE Singapore's Global Company Partnership (GCP) Grant.

Take Your Career Further



FOR INDIVIDUALS AND EMPLOYERS

MySkillsFuture

MySkillsFuture is a one-stop online portal that enables Singaporeans to chart their own career and lifelong learning pathways, through access to industry information and tools to search for training programmes to broaden and deepen skills. It incorporates the national Jobs Bank, presenting an integrated platform for users to access resources related to jobs, education and skills training.

P-Max

The Place-and-Train programme matches job-seeking PMETs to suitable positions in SMEs, and assists SMEs to better recruit, train, manage and retain their newly-hired PMETs.

Professional Conversion Programme (PCP)

The Professional Conversion Programme (PCP) is a career conversion programme targeted at Professionals, Managers, Executives and Technicians (PMETs), including mid-career switchers, to undergo skills conversion and move into new occupations or sectors that have good prospects and opportunities for progression.

Career Trial

Jobseekers can gain experience and confidence through a short-term career trial to be assessed for employment paying \$1,500 or more and receive training allowance and retention incentives.

Employers can assess a jobseeker's job fit via a short-term career trial before offering formal employment for jobs paying \$1,500 or more. Companies can receive up to \$5,400 of salary support to hire eligible Singapore Citizens who have been unemployed for 6 months or more.

Career Support Programme (CSP)

Singapore Citizens, Professionals, Managers, Executives and Technicians (PMETs) who are made redundant and/or unemployed and actively looking for jobs for 6 months or more can take on new jobs paying at least \$3,600.

Companies can receive up to \$42,000 in salary support for up to 18 months when they hire eligible PMETs who are retrenched and/or unemployed for six months or more, in jobs that pay gross monthly salary of at least \$3,600 (for SMEs)/ \$4,000 (Non-SMEs).

Take Your Career Further



FOR INDIVIDUALS AND EMPLOYERS

Jobs Bank

The Jobs Bank, administered by WSG, is a free service provided to Singapore-registered companies. It helps to facilitate online job matching between local job seekers and employers.

My Careers Future

MyCareersFuture.sg. is a portal which aims to provide Singaporean jobseekers with a fast and smart search service to match them with relevant jobs, based on the jobseekers' skills and competencies.

The portal enables Singaporeans to be more aware of the skills they possess, and connect them to relevant jobs based on their current skills and competencies. It also highlights jobs which are eligible for Government support through WSG's Adapt and Grow programmes.

SME Talent Programme

The SME Talent Programme helps SMEs attract students from Universities, Polytechnics and the Institute of Technical Education (ITE) by providing funding for student internships and projects. SMEs may receive support for internships which have structured learning objectives aligned to SkillsFuture Enhanced Internship guidelines and include mentoring by supervisors. As a result, students can look forward to meaningful internships and higher monthly stipends.

Initiatives and Schemes by:



SkillsFuture Singapore



Workforce Singapore

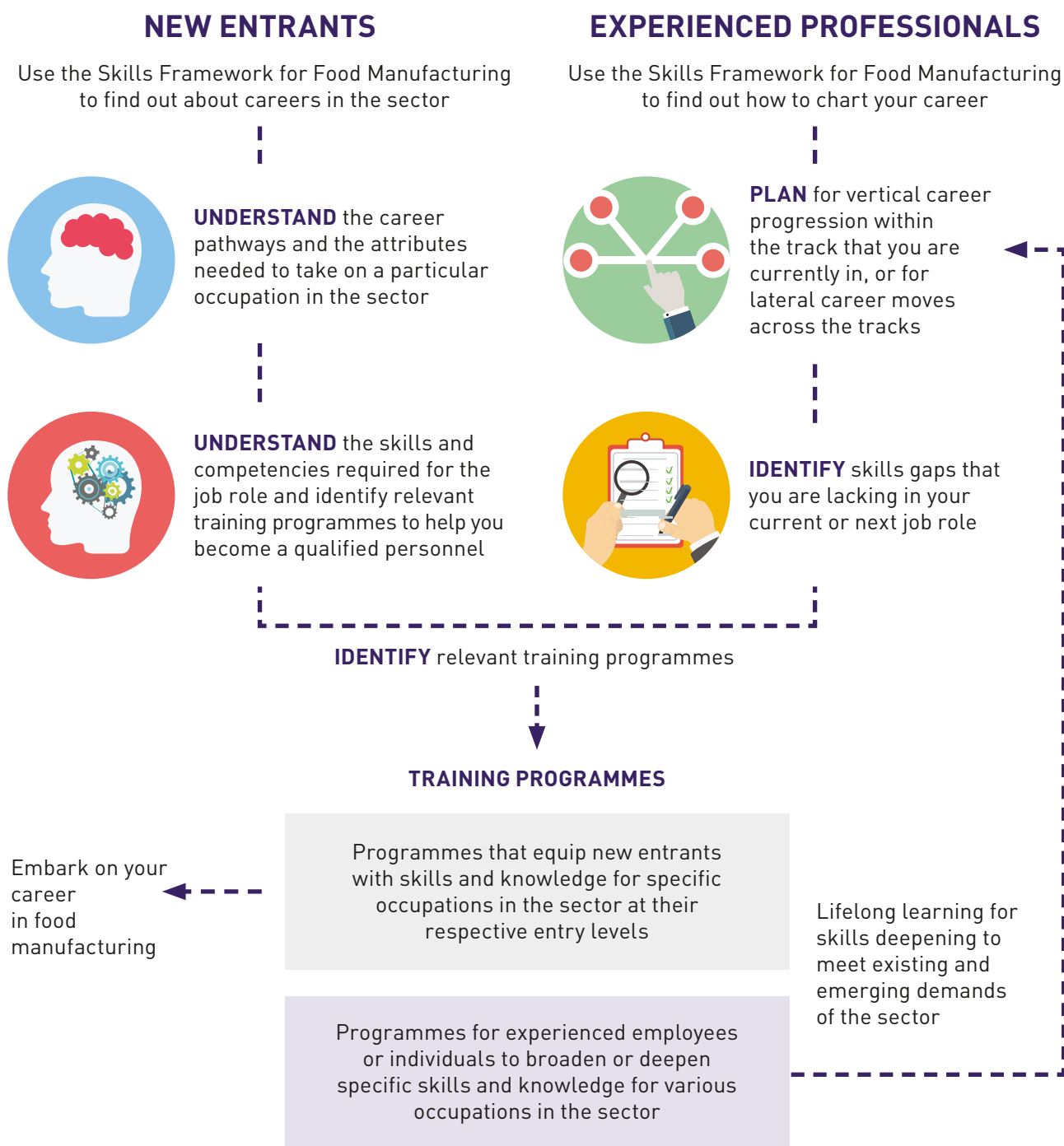


Enterprise Singapore

For more information on the initiatives and schemes, please visit
skillsfuture.sg | wsg.gov.sg | enterprisesg.gov.sg

Realise Your Potential - Take the Next Step Forward

Now that you have some idea of what a career in the food manufacturing industry can offer and the available government initiatives and schemes to support your career goals, you are ready to take the next step!



For a list of training programmes available for the food manufacturing sector, please visit:
skillsfuture.sg/skills-framework/foodmfg

Food Manufacturing Career Tracks

Production



The Production function plays a primary role to create the food products sold to consumers. It combines culinary knowledge of ingredient and food preparation with technology to produce food quickly and efficiently.

Quality Assurance and Quality Control



Quality Assurance and Quality Control (QA&QC) is a critical function supporting food manufacturing and innovation. It ensures consistent quality in the food produced, products are safe to eat, and overall hygiene and cleanliness of the manufacturing plant is constantly maintained.

Research and Development



Research and Development (R&D) combines expertise in engineering and automation with recipe formulation and food science. R&D in the food manufacturing sector entails two key aspects: creating new gastronomic delights and products to meet current market needs (elderly-friendly, texture-modified, low glycaemic index (GI), alternative protein etc.) and designing manufacturing processes to mass produce food products more efficiently.

Business Development



The Business Development functional track builds strategic business-to-business relationships with partners to expand into new, international markets and establishes new customer bases to sell more food products.

Skills Map



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Quality Assurance and Quality Control
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Research and Development
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Business Development
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Senior Operation Manager

Brandon Teo

Seng Hua Hng Foodstuff Pte Ltd

ADVANCING WITH AUTOMATION

Brandon Teo was previously in the engineering field for ten years when he made the switch to the food manufacturing sector. His interest in the latest food processing equipment, coupled with a passion in understanding ground work in detail and engineering knowledge, made it easy to implement up-to-date and innovative technology solutions at the factory effectively.

As a Senior Operation Manager at Seng Hua Hng (Camel Nuts), Brandon's job scope involves developing and implementing manufacturing policies, as well as continually incorporating advanced technologies to maximise production capabilities while maintaining a high standard of food safety and hygiene.

Brandon's efforts in implementing technology to improve production processes did not go unnoticed – he received strong support from his Managing Director and recognition from regulatory bodies. External food safety certification bodies have also acknowledged the upgrading and enhancement efforts at Camel Nuts, with the company receiving an 'A' grade in the British Retail Consortium (BRC) global standard for food safety compared to a previous assessment 5 years prior where they were awarded a 'B'.

A shift in demand for new products and healthier food options has prompted an increased focus on automation, in order to accommodate bulk demand and the ability to switch between multiple product lines efficiently. "The food industry will continue to see

an increase in demand for experienced engineers", he predicts.

Brandon is supportive of automation and its value but feels that it will not fully displace jobs in the food manufacturing sector. "Automation enhances the speed and consistency of manufacturing output, but does not replace workers", he shares. He explains that workers can be retrained to develop the higher-level skills required to facilitate food production processes, and this upskilling process actually future-proofs their roles and extends their employability.

Brandon considers the Skills Framework for Food Manufacturing an excellent way to attract younger talent to the industry as it presents to them a career potential through the career map overview, "It is important to change the stereotypical and mistaken mindset that the food processing sector is one that pays little and offers no growth prospects".

"Automation enhances the manufacturing output, but does not replace workers. Workers can be retrained to develop higher-level skills to facilitate food production processes."

Production Operator

JOB ROLE DESCRIPTION

The Production Operator contributes to food production operations by setting up his/her work stations, and handling the equipment within the plant to prepare ingredients, food products and packaging. He is expected to adhere to food production requirements, food safety parameters and standard operating procedures (SOPs) to ensure that the food products manufactured are free from contaminants and safe for consumption.

He works in a food production environment and may be required to work shifts. He should be comfortable with repetitive work activities, working in accordance to schedules, operating machinery, as well as exposure to physically demanding work conditions such as long standing hours, hot and/or cold temperatures.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Prepare food	<ul style="list-style-type: none"> • Prepare workstations at the start of shift • Check production parameters, ingredient quantities and/or preparation methods for correct settings to meet process requirements • Operate equipment and machinery in food production lines • Monitor food processing equipment for escalation in cases of improper functions
	Manage process workflow	<ul style="list-style-type: none"> • Operate network interface to monitor machines • Check correctness of food quantities, container formats and materials against production instructions given • Fill critical control point (CCP) forms and records to document production processes
	Maintain hygiene, safety and standards	<ul style="list-style-type: none"> • Clean and reinstate work stations, operate cooking equipment and dispose of waste as per defined standard operating procedures (SOPs) • Apply food production standards and SOPs related to safety and hygiene policies and procedures

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Active and Smart Packaging	Level 2	Teamwork	Basic
	Advanced Processing Technology	Level 2	Communication	Basic
	Automated Food Manufacturing System Maintenance	Level 1	Problem Solving	Basic
	Automated Operation Monitoring	Level 1	Service Orientation	Basic
	Continuous Process Improvement	Level 1	Interpersonal Skills	Basic
	Emergency Response Management	Level 2		
	Food Production Management	Level 1		
	Food Safety Management	Level 1		
	Good Manufacturing Practices Implementation	Level 2		
	Hazards and Risk Control, and Policy Management	Level 2		
	Internet of Things Management	Level 2		
	Quality System Management	Level 2		
	WSH Performance Management	Level 2		

Section Head/Team Leader/Line Operator

JOB ROLE DESCRIPTION

The Section Head/Team Leader/Line Operator oversees a team of subordinates and supervises the daily operations of his/her assigned production line. He ensures that production targets for the line are met and food products meet required production standards. He monitors the set-up and cleanliness of work stations, schedules work activities and supervises the team on their preparation of ingredients and food products as well as packaging. He also monitors equipment performance levels and conducts basic equipment troubleshooting.

He operates in a food production environment and may be required to work day or night shifts. He should be comfortable with working in accordance to schedules, operating machinery, as well as exposure to physically demanding work conditions such as long standing hours, hot and/or cold temperatures.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Prepare food	<ul style="list-style-type: none"> Determine appropriate production parameters and methods to meet manufacturing process requirements Check correctness of food quantities, container formats and materials against production plans Supervise line team on preparation of ingredients, production, machinery operation and packaging of the food products Train production staff on the use of cooking equipment and coordinate provision of appropriate training where needed 	In accordance with: <ul style="list-style-type: none"> ISO 22000 Food safety management systems Singapore Standard (SS) 590 SS 444 Food Safety System Certification (FSSC) 22000 Good laboratory practices (GLP) Good manufacturing practices (GMP)
	Manage process workflow	<ul style="list-style-type: none"> Ensure production targets of assigned section are met and food products meet required production standards Monitor equipment performance levels and conduct basic equipment troubleshooting and maintenance Identify need to escalate repairs or preventive maintenance to equipment suppliers and vendors Monitor and adjust production process parameters to maintain optimum operational conditions Assist in the review of standard operating procedures (SOPs), checklists, and work instructions 	
	Maintain hygiene, safety and standards	<ul style="list-style-type: none"> Monitor the set-up of work stations for cleanliness and safety compliance with local regulations and company requirements Correct product or process faults to meet quality standards Conduct checks on line team's attire and personal protective equipment (PPE) Conduct periodic checks on processes and final products for continuous fulfilment of quality standards 	
	Contribute to continuous improvement	<ul style="list-style-type: none"> Seek opportunities for improvement and take corrective actions on his/her own initiative Suggest improvements in equipment setup 	

Section Head/Team Leader/Line Operator

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Active and Smart Packaging	Level 3	Leadership	Basic
	Advanced Processing Technology	Level 3	Problem Solving	Intermediate
	Automated Food Manufacturing System Maintenance	Level 1	Communication	Basic
	Automated Operation Monitoring	Level 2	Teamwork	Intermediate
	Automation Process Control	Level 3	Decision Making	Basic
	Conflict Resolution	Level 4		
	Continuous Process Improvement	Level 2		
	Document Control	Level 2		
	Emergency Response Management	Level 2		
	Equipment Maintenance	Level 2		
	Food Production Management	Level 2		
	Food Safety Management	Level 1		
	Good Manufacturing Practices Implementation	Level 3		
	Hazards and Risk Control, and Policy Management	Level 2		
	Internet of Things Management	Level 2		
	Manufacturing Process Management	Level 2		
	Production Performance Management	Level 3		
	Project Management	Level 3		
	Quality System Management	Level 3		
	Stakeholder Management	Level 3		
	Systems Thinking	Level 2		
	Technical Report Writing	Level 2		
	WSH Performance Management	Level 3		

Process Technician/Maintenance Technician

JOB ROLE DESCRIPTION

The Process Technician/Maintenance Technician supports operations within the food production plant by setting up machinery for each production shift and by performing routine maintenance work on the equipment and/or facilities. He/She follows instructions and schedules closely for conducting regular preventive maintenance work such as changing of lubrication oil, tuning machine speeds and other calibration on the food production equipment.

He may work on shifts in food production environments, which may entail high temperatures for cooking, or cold temperatures for freezing and storage of food products. He has a keen interest in high-speed production machinery, and is able to interact effectively with others on the technical team to ensure that all food production equipment-related issues are resolved appropriately and efficiently, while complying with food safety and Workplace Safety and Health (WSH) requirements.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Set up and maintain food manufacturing equipment	<ul style="list-style-type: none"> Set up equipment and work stations for daily production operations Coordinate with production teams for machine maintenance downtime Troubleshoot, repair and maintain food production equipment Conduct routine equipment cleaning and inspection activities Assist with facility improvements, utilities usage, power distribution and basic repairs of floors, walls, and ceilings Assist with new production equipment installation and execute proper spare part replacement 	In accordance with: <ul style="list-style-type: none"> ISO 22000 Food safety management systems Singapore Standard (SS) 590 SS 444 Food Safety System Certification (FSSC) 22000 Good laboratory practices (GLP) Good manufacturing practices (GMP)
	Manage automated manufacturing operations	<ul style="list-style-type: none"> Operate computerised systems during production operations Conduct in-process system monitoring and system troubleshooting during production operations Perform routine preventive maintenance on production equipment and machines Execute emergency breakdown protocols Assist in resolving downtime issues Record equipment performance in assigned production lines 	
	Maintain hygiene, safety and standards	<ul style="list-style-type: none"> Comply with cleanliness and safety regulations while setting up and maintaining food manufacturing equipment Clean equipment and maintain equipment hygiene requirements for production use, after installation and/or repairs Maintain compliance with cleanliness standards, safety regulations and organisation requirements during production cycles 	
	Contribute to continuous improvement	<ul style="list-style-type: none"> Seek opportunities for improvement and take corrective actions on own initiative Suggest improvements in equipment maintenance processes 	

Process Technician/Maintenance Technician

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Active and Smart Packaging	Level 3	Problem Solving	Intermediate
	Advanced Processing Technology	Level 3	Teamwork	Basic
	Automated Food Manufacturing System Maintenance	Level 2	Communication	Basic
	Automated Operation Monitoring	Level 2	Interpersonal Skills	Basic
	Automation Process Control	Level 3	Service Orientation	Basic
	Continuous Process Improvement	Level 2		
	Document Control	Level 2		
	Emergency Response Management	Level 2		
	Equipment Maintenance	Level 2		
	Food Manufacturing Facility Maintenance	Level 2		
	Food Safety Management	Level 2		
	Good Manufacturing Practices Implementation	Level 2		
	Green Manufacturing Design and Implementation	Level 3		
	Hazards and Risk Control, and Policy Management	Level 2		
	Internet of Things Management	Level 2		
	Manufacturing Process Management	Level 3		
	Process Validation	Level 2		
	Project Management	Level 3		
	Quality System Management	Level 2		
	Stakeholder Management	Level 3		
	Systems Thinking	Level 2		
	Technical Report Writing	Level 2		
	Utilities Management	Level 3		
	WSH Performance Management	Level 2		

Supervisor/Production Planner

JOB ROLE DESCRIPTION

The Supervisor/Production Planner supervises the daily operations of the food production function to ensure that production targets are met and food products meet required production standards. He/She is responsible for smooth production operations within the plant, and ensures adequate inventories of raw materials, manpower and other resources required. He oversees and makes regular reports on production outputs, yields, equipment issues and downtime, and staff overtime, to update the management on production performance issues.

He operates in a food production environment and may be required to work day or night shifts. He should be comfortable with working in accordance to a schedule, operating machinery, as well as exposure to physically demanding work conditions such as long standing hours, hot or cold temperatures.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Manage process workflow	<ul style="list-style-type: none"> Supervise production staff on preparation of ingredients, production, machinery operation and packaging of the food products Coordinate provision of training to production staff Plan production outputs and set daily production schedules and buffer stock levels Coordinate with maintenance teams and assist in troubleshooting equipment downtimes and site restorations Evaluate low yield and quality assurance fail lots to highlight issues that affect output and operations Review and suggest modifications to standard operating procedures (SOPs), checklists, and work instructions Maintain inventory levels of raw materials, ingredients and buffer stock for meeting orders to facilitate smooth production operations Prepare regular production performance reports 	In accordance with: <ul style="list-style-type: none"> ISO 22000 Food safety management systems Singapore Standard (SS) 590 SS 444 Food Safety System Certification (FSSC) 22000 Good laboratory practices (GLP) Good manufacturing practices (GMP)
	Operationalise new and customised product manufacturing	<ul style="list-style-type: none"> Assist in implementing new and/or modified production processes to manufacture new food products Disseminate new operating parameters to production teams for implementation Infer impact on yield and reliability of new and/or modified production processes 	
	Maintain hygiene, safety and standards	<ul style="list-style-type: none"> Ensure quality and hygiene of products and production areas, and workplace safety of employees Work with staff in continuous improvement efforts, troubleshooting and resolution of technical issues with processes and equipment Assist in production documentation establishment and maintenance Coordinate with teams to resolve inter-discipline issues and control overall quality of work Enforce good safety culture and manufacturing practices Ensure adherence to processes and procedures 	
	Contribute to continuous improvement	<ul style="list-style-type: none"> Identify opportunities for continuous improvement projects relating to manufacturing processes Assist in implementation of improvement projects 	

Supervisor/Production Planner

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Active and Smart Packaging	Level 3	Problem Solving	Intermediate
	Advanced Processing Technology	Level 3	Decision Making	Intermediate
	Automated Operation Monitoring	Level 2	Leadership	Intermediate
	Automation Process Control	Level 4	Sense Making	Intermediate
	Budgeting	Level 3	Communication	Intermediate
	Change Management	Level 3		
	Conflict Resolution	Level 4		
	Continuous Process Improvement	Level 3		
	Data Synthesis	Level 3		
	Document Control	Level 3		
	Emergency Response Management	Level 3		
	Equipment Maintenance	Level 2		
	Food Production Management	Level 3		
	Food Safety Management	Level 2		
	Good Manufacturing Practices Implementation	Level 3		
	Green Manufacturing Design and Implementation	Level 3		
	Hazards and Risk Control, and Policy Management	Level 3		
	Innovation Management	Level 3		
	Internet of Things Management	Level 3		
	Manufacturing Process Management	Level 3		
	New Product Introduction for Food	Level 3		
	Production Performance Management	Level 4		
	Project Management	Level 4		
	Quality System Management	Level 3		
	Stakeholder Management	Level 3		
	Strategy Development	Level 4		
	Systems Thinking	Level 3		
	Technical Presentation	Level 4		
	Technical Report Writing	Level 2		
	WSH Performance Management	Level 3		

Assistant Engineer/Assistant Maintenance Manager

JOB ROLE DESCRIPTION

The Assistant Engineer/Assistant Maintenance Manager plays an important role in maintaining smooth running of the food production plant's machinery and equipment, to ensure that key performance indicators (KPIs) for minimising downtime and production costs are met. He/She is a technical expert, who is able to diagnose problems with the plant's equipment and determine whether repairs can be performed by the organisation's own maintenance team, or if respective equipment vendors must be engaged.

He possesses intimate knowledge of the production lines and the equipment used, and coordinates with the maintenance team, as well as various equipment vendors, to ensure timely supply, repair and maintenance of these equipment.

He may work on shifts in food production environments, which may entail high temperatures for cooking, or cold temperatures for freezing and storage of food products. He has a keen interest in high-speed production machinery, strong communication skills, good teamwork and an analytical mind to ensure that all food production equipment-related issues are resolved appropriately and efficiently, while complying with food safety and Workplace Safety and Health (WSH) requirements.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Set up and maintain food manufacturing equipment	<ul style="list-style-type: none"> Schedule repair and maintenance activities to minimise downtime during active production routines Develop work instructions and control plans for manufacturing processes Diagnose abnormalities on food production equipment and appropriate repair activities Assist to resolve facility maintenance issues Assist in developing production processes and in equipment installations Assist in equipment set-up and commissioning for mass production processes 	In accordance with: <ul style="list-style-type: none"> ISO 22000 Food safety management systems Singapore Standard (SS) 590 SS 444 Food Safety System Certification (FSSC) 22000 Good laboratory practices (GLP) Good manufacturing practices (GMP)
	Manage automated manufacturing operations	<ul style="list-style-type: none"> Ensure the robustness of food manufacturing processes with built-in, fool-proof mechanisms Monitor and maintain manufacturing processes and equipment performance Apply corrective actions for automatic and manual shut-downs during critical and emergency situations Troubleshoot process inconsistencies to maintain optimum facility performance 	
	Maintain hygiene, safety and standards	<ul style="list-style-type: none"> Comply with cleanliness and safety standards while setting up equipment and maintenance procedures Control exposure of equipment contact parts, lubricants and other machinery components against ingredients, to ensure food safety Maintain compliance with cleanliness standards, safety regulations and organisation requirements during production cycles 	
	Contribute to continuous improvement	<ul style="list-style-type: none"> Assist in implementation of improvement projects Identify opportunities for continuous improvement projects relating to manufacturing and maintenance processes 	

Assistant Engineer/Assistant Maintenance Manager

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Active and Smart Packaging	Level 4	Problem Solving	Intermediate
	Advanced Processing Technology	Level 4	Decision Making	Intermediate
	Automated Food Manufacturing System Maintenance	Level 3	Leadership	Intermediate
	Automated Operation Monitoring	Level 3	Communication	Intermediate
	Automation Process Control	Level 4	Interpersonal Skills	Intermediate
	Business Negotiation	Level 3		
	Change Management	Level 3		
	Conflict Resolution	Level 4		
	Continuous Process Improvement	Level 3		
	Data Analytics System Design	Level 3		
	Data Synthesis	Level 4		
	Document Control	Level 3		
	Emergency Response Management	Level 3		
	Equipment Maintenance	Level 3		
	Food Manufacturing Facility Maintenance	Level 3		
	Food Manufacturing Process Design	Level 4		
	Food Safety Management	Level 2		
	Good Manufacturing Practices Implementation	Level 3		
	Green Manufacturing Design and Implementation	Level 4		
	Hazards and Risk Control, and Policy Management	Level 3		
	Innovation Management	Level 3		
	Internet of Things Management	Level 3		
	Manufacturing Process Management	Level 3		
	New Product Introduction for Food	Level 3		
	Process Validation	Level 3		
	Project Management	Level 4		
	Quality System Management	Level 3		
	Stakeholder Management	Level 3		
	Strategy Development	Level 4		
	Systems Thinking	Level 3		
	Technical Presentation	Level 4		
	Technical Report Writing	Level 3		
	Utilities Management	Level 4		
	WSH Performance Management	Level 3		

Production Manager

JOB ROLE DESCRIPTION

The Production Manager oversees all operations of the food production plant, with a focus on simplifying work processes, reducing costs and increasing production process efficiency. He/She is responsible for setting key performance indicators (KPI) for the production plant, and formulating new food production standards and standard operating procedures (SOPs).

The Production Manager monitors quality assurance on an overall level, investigates production and/or quality issues and recommends solutions. He is required to go through training in internal food safety audits and serves on the organisation's food safety internal audit committee.

He operates in a food production environment and may be required to work shifts. He should be comfortable with exposure to physically demanding work conditions (i.e. long standing hours, hot or cold temperatures).

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Manage process workflow	<ul style="list-style-type: none"> Establish food production strategies for sustainability Set food production key performance indicators (KPIs) Lead key production processes for adherence to budget, schedules, quality control, and cross-departmental coordination Manage manpower, equipment, raw materials and ingredient resources to meet production strategy objectives Identify and implement yield opportunities and set preliminary yield targets Develop and implement standard operating procedures (SOPs) and prepare reports and work instructions Investigate low yield and quality assurance fail lots Review regular production performance reports 	In accordance with: <ul style="list-style-type: none"> ISO 22000 Food safety management systems Singapore Standard (SS) 590 SS 444 Food Safety System Certification (FSSC) 22000 Good laboratory practices (GLP) Good manufacturing practices (GMP)
	Operationalise new and customised product manufacturing	<ul style="list-style-type: none"> Improve operation planning through the use of big data and advanced analytics modelling Draft capacity plans to evaluate sustainability of new and/or modified manufacturing processes Implement test programmes to resolve hardware and major set-up issues in mass production Implement new and/or modified production processes for regulatory approval, commissioning and operation 	
	Maintain hygiene, safety and standards	<ul style="list-style-type: none"> Support all facets of product quality and food safety processes to ensure that finished products meet internal specifications and regulatory standards Coordinate plant visits and physical inspections by external auditors Investigate production and/or quality issues and recommend solutions Establish production documentation and maintenance 	
	Contribute to continuous improvement	<ul style="list-style-type: none"> Lead working level communities to explore opportunities for improvement projects Lead continuous improvement projects 	

Production Manager

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Active and Smart Packaging	Level 4	Leadership	Advanced
	Advanced Processing Technology	Level 4	Resource Management	Intermediate
	Budgeting	Level 4	Problem Solving	Advanced
	Business Continuity Management	Level 4	Decision Making	Advanced
	Business Performance Management	Level 4	Interpersonal Skills	Intermediate
	Change Management	Level 4		
	Conflict Resolution	Level 5		
	Continuous Process Improvement	Level 4		
	Data Analytics System Design	Level 3		
	Data Synthesis	Level 4		
	Document Control	Level 4		
	Emergency Response Management	Level 3		
	Food Manufacturing Process Design	Level 4		
	Food Production Management	Level 4		
	Food Safety Management	Level 3		
	Good Manufacturing Practices Implementation	Level 3		
	Green Manufacturing Design and Implementation	Level 4		
	Hazards and Risk Control, and Policy Management	Level 4		
	Innovation Management	Level 4		
	Internet of Things Management	Level 4		
	Manufacturing Process Management	Level 4		
	New Product Introduction for Food	Level 4		
	Production Performance Management	Level 5		
	Project Management	Level 5		
	Quality System Management	Level 4		
	Risk Management	Level 4		
	Stakeholder Management	Level 4		
	Strategy Development	Level 5		
	Systems Thinking	Level 4		
	Technical Presentation	Level 5		
	Technical Report Writing	Level 3		
	WSH Performance Management	Level 4		

Engineer/Engineering Manager/ Maintenance Manager

JOB ROLE DESCRIPTION

The Engineer/Engineering Manager/Maintenance Manager applies engineering principles and techniques to manage the machinery and equipment aspects of food production processes. He/She designs and sets up production lines for new products, and to enhance the food production capability and capacity of the plant. He is responsible for keeping himself abreast of the latest technology developments applicable to food production as well as maintaining a network of equipment vendors to service the organisation's technological needs.

The Engineer/Engineering Manager/Maintenance Manager is also responsible for production process control, and ensuring the sustainability of the plant's equipment by planning production capacity, managing resources for equipment maintenance as well as making strategic decisions relating to equipment decommissioning and new installations.

He has a keen interest in high-speed production machinery, strong communication skills to lead a team to meet organisational objectives, and an analytical mind to ensure that all food production equipment-related issues are resolved appropriately and efficiently, while complying with food safety and Workplace Safety and Health (WSH) requirements.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Set up and maintain food manufacturing equipment	<ul style="list-style-type: none"> Schedule mandatory inspections and coordinate certifications Implement preventive and predictive maintenance programmes on production equipment Manage equipment vendors and maintenance work to meet approved maintenance budget targets, optimise equipment maintenance costs and overall cost effectiveness Maintain appropriate inventory levels for standard replacement parts Oversee proper installation, set-up and commissioning of equipment and facilities 	In accordance with: <ul style="list-style-type: none"> ISO 22000 Food safety management systems Singapore Standard (SS) 590 SS 444 Food Safety System Certification (FSSC) 22000 Good laboratory practices (GLP) Good manufacturing practices (GMP)
	Manage automated manufacturing operations	<ul style="list-style-type: none"> Manage equipment performance to ensure optimal levels of operation, to the right rate and quality of output Manage facilities system monitoring to maintain facility uptime and operation Plan production capacity based on equipment specifications, current and forecasted production levels Source for new technology among vendors and implement technical solutions to improve equipment uptime, asset utilisation and process monitoring Manage production process efficiency improvements through energy conservation, pollution and waste reduction Conduct validation experiments and root cause analyses to troubleshoot engineering issues Assess equipment for necessity for decommissioning 	
	Operationalise new and customised product manufacturing	<ul style="list-style-type: none"> Design production lines for new products and to enhance production capability and capacity Draft capacity plans to evaluate sustainability of new and/or modified manufacturing processes Analyse possible issues before New Product Introduction (NPI) and address process deviations Implement new and/or modified production processes for regulatory approval, commissioning and operation 	
	Maintain hygiene, safety and standards	<ul style="list-style-type: none"> Implement guidelines and standard operation procedures (SOPs) for maintaining equipment cleanliness and hygiene standards during engineering work 	
	Contribute to continuous improvement	<ul style="list-style-type: none"> Apply mechanical and electrical solutions to drive continuous improvement and plant efficiencies Lead working level communities to explore opportunities for improvement projects 	

Engineer/Engineering Manager/ Maintenance Manager

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Active and Smart Packaging	Level 5	Problem Solving	Advanced
	Advanced Processing Technology	Level 5	Decision Making	Advanced
	Automated Food Manufacturing System Maintenance	Level 4	Leadership	Advanced
	Automated Operation Monitoring	Level 4	Sense Making	Advanced
	Automated System Design	Level 4	Communication	Advanced
	Automation Process Control	Level 5		
	Budgeting	Level 4		
	Business Continuity Management	Level 4		
	Business Negotiation	Level 4		
	Business Networking	Level 5		
	Business Performance Management	Level 4		
	Change Management	Level 4		
	Conflict Resolution	Level 4		
	Continuous Process Improvement	Level 4		
	Data Analytics System Design	Level 4		
	Data Synthesis	Level 5		
	Document Control	Level 4		
	Embedded System Integration	Level 4		
	Emergency Response Management	Level 4		
	Equipment Maintenance	Level 4		
	Food Manufacturing Facility Maintenance	Level 4		
	Food Manufacturing Process Design	Level 5		
	Food Safety Management	Level 3		
	Good Manufacturing Practices Implementation	Level 3		
	Green Manufacturing Design and Implementation	Level 5		
	Hazards and Risk Control, and Policy Management	Level 4		
	Innovation Management	Level 4		
	Internet of Things Management	Level 4		
	Manufacturing Process Management	Level 5		
	New Product Introduction for Food	Level 4		
	Process Validation	Level 4		
	Project Management	Level 5		
	Quality System Management	Level 4		
	Risk Management	Level 4		
	Stakeholder Management	Level 4		
	Strategy Development	Level 5		
	Systems Thinking	Level 4		
	Technical Presentation	Level 5		
	Technical Report Writing	Level 4		
	Utilities Management	Level 5		
	WSH Performance Management	Level 4		

Director of Operations/Plant Manager

JOB ROLE DESCRIPTION

The Director of Operations/Plant Manager oversees the food production, processes and automation engineering functions of the organisation and ensures that all food manufacturing objectives are achieved in a timely and cost-effective manner. He/She is responsible for strategic planning on production capacity and capability concerns, as well as managing costs, resources, manpower, and materials to sustain production capacity and capability. Furthermore, he bears the overall responsibility for ensuring food quality and safety across the plant's entire food production process.

He champions the organisational vision and mission and is accountable for overall organisational excellence. As a team leader, he builds a high-performance team that works collaboratively, and has the ability to develop and execute functional strategies, as well as act as a change leader.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Manage process workflow	<ul style="list-style-type: none"> • Manage the overall performance, production output levels and quality of the food production function • Plan production capacity and capability development for business growth • Manage cost factors relating to current and future production capacity planning 	In accordance with: <ul style="list-style-type: none"> • ISO 22000 Food safety management systems • Singapore Standard (SS) 590 • SS 444 • Food Safety System Certification (FSSC) 22000 • Good laboratory practices (GLP) • Good manufacturing practices (GMP)
	Set up and maintain food manufacturing equipment	<ul style="list-style-type: none"> • Manage capital and facility maintenance projects and resources for equipment installation, service and repair • Determine equipment capabilities for new or revised factory layouts • Enhance manufacturing operations and processes to improve productivity and help achieve business initiative 	
	Maintain hygiene, safety and standards	<ul style="list-style-type: none"> • Set food production standards, equipment cleanliness standards and standard operating procedures (SOPs) 	
	Contribute to continuous improvement	<ul style="list-style-type: none"> • Prioritise key process weaknesses for baseline continuous improvement to yield, quality, productivity and cost • Evaluate new methodologies to improve work processes 	
	Operationalise new and customised product manufacturing	<ul style="list-style-type: none"> • Evaluate production plans of new food products • Develop new process capability to meet new food product requirements • Direct research on application of new and unique manufacturing approaches 	

Director of Operations/Plant Manager

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Active and Smart Packaging	Level 6	Leadership	Advanced
	Advanced Processing Technology	Level 6	Problem Solving	Advanced
	Automated Food Manufacturing System Maintenance	Level 5	Transdisciplinary Thinking	Advanced
	Automated System Design	Level 5	Creative Thinking	Advanced
	Automation Process Control	Level 6	Sense Making	Advanced
	Budgeting	Level 5		
	Business Continuity Management	Level 6		
	Business Environment Analysis	Level 4		
	Business Negotiation	Level 5		
	Business Networking	Level 5		
	Business Performance Management	Level 5		
	Business Relationship Building	Level 6		
	Change Management	Level 6		
	Conflict Resolution	Level 5		
	Continuous Process Improvement	Level 5		
	Data Analytics System Design	Level 5		
	Data Synthesis	Level 6		
	Document Control	Level 4		
	Embedded System Integration	Level 5		
	Emergency Response Management	Level 5		
	Equipment Maintenance	Level 5		
	Food Manufacturing Facility Maintenance	Level 5		
	Food Manufacturing Process Design	Level 6		
	Food Production Management	Level 5		
	Food Safety Management	Level 4		
	Good Manufacturing Practices Implementation	Level 5		
	Green Manufacturing Design and Implementation	Level 6		
	Hazards and Risk Control, and Policy Management	Level 2		
	Innovation Management	Level 6		
	International Trade Legislation for Business	Level 3		
	Internet of Things Management	Level 5		
	Manufacturing Process Management	Level 5		
	New Product Introduction for Food	Level 5		
	Project Management	Level 6		
	Quality System Management	Level 6		
	Risk Management	Level 5		
	Stakeholder Management	Level 5		
	Strategy Development	Level 5		
	Systems Thinking	Level 5		
	Technical Presentation	Level 6		
	WSH Performance Management	Level 5		

Notes

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Quality Assurance and Quality Control

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Quality Assurance and Business Development Manager

Grace Tan

People Bee Hoon Factory Pte Ltd

MAINTAINING QUALITY WHILE DIVERSIFYING

When Grace joined People Bee Hoon Factory four years ago, she was the first graduate the company had hired. Despite being unsure of what was initially in store for her, Grace chose the role of Quality Assurance to start off her career as it was relevant to what she majored in – Food Science and Technology.

Now the Quality Assurance and Business Development Manager of the company, Grace derives great job satisfaction seeing projects she has worked on from initial stages come to fruition. When the company shifted its factory to Boon Lay in 2015, she was tasked to coordinate the construction and help design the floor plan from scratch to meet food safety standards.

Working for a Small-to-Medium Enterprise (SME) has so far provided plenty of opportunities for Grace to participate in various projects due to the high cross-departmental interaction, allowing her to pick up new skill sets along the way. However, she points out that in SMEs, job definitions tend to be less rigid since the teams are small. As such, a career map like the Skills Framework for Food Manufacturing can benefit both the employee and the organisation.

“It is helpful that the Skills Framework contains clear role definitions with key tasks for each critical work function within the sector. As the company grows, the career pathways will be a useful reference for the management to plan training for staff in terms of career progression, which would certainly aid in staff hiring and retention”, she shares.

Using her own career progression to illustrate this, Grace’s original Quality Assurance role in ensuring food safety, maintaining product quality and troubleshooting production issues has now grown to include business development, another important track of the food manufacturing sector. “I also actively work on growing the business by opening up new markets and developing new products for special projects, such as healthier products”, she says. “My experience in Quality Assurance definitely helps a lot in my expanded role of business development, as I have a solid foundation in product technical knowledge.”

“The career pathways will be a useful reference for the management to plan training for staff in terms of career progression, which would certainly aid in staff hiring and retention.”

Quality Control Technician/Quality Control Assistant/Laboratory Technician

JOB ROLE DESCRIPTION

The Quality Control Technician/Quality Control Assistant/Laboratory Technician supports process and product quality testing activities by preparing equipment and materials and assisting in the execution of tests to identify processes and products that do not meet specified requirements in food safety and manufacturing. He/She conducts the laboratory tests to identify lapses in the production lines' conformance to food safety and hygiene standards. He assists in the management of the quality control (QC) laboratory by performing routine monitoring and maintenance of laboratory infrastructure and equipment, recording laboratory data and assisting in preparing the laboratory for audits.

His work scope may include laboratory testing, and he should have a systematic mindset to check that materials are at hand and verify protocols to be used before starting testing procedures. He should have quick learning abilities to apply and identify areas of improvement within his own area of work and be able to apply basic analytical skills to identify issues and solve routine problems.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Conduct tests for food quality and packaging	<ul style="list-style-type: none"> • Prepare samples, standards and solutions • Perform tests on intermediate and finished products for compliance with food safety and other requirements • Document and report sampling conditions, testing activities and results 	In accordance with: <ul style="list-style-type: none"> • ISO 22000 Food safety management systems • Singapore Standard (SS) 590 • SS 444 • Food Safety System Certification (FSSC) 22000 • Good laboratory practices (GLP) • Good manufacturing practices (GMP)
	Maintain standards and quality processes in food manufacturing operations	<ul style="list-style-type: none"> • Inspect in-coming and out-going products according to receiving and shipping policies • Review and validate supplier raw material records and results • Conduct daily in-process quality control (QC) inspections at production lines • Maintain integrity, accuracy and completeness of QC data and records 	
	Manage laboratory operations	<ul style="list-style-type: none"> • Assist in monitoring and inspecting laboratory infrastructure, equipment and utilities • Perform routine calibration and maintenance of laboratory equipment • Maintain integrity, accuracy and completeness of QC data and records 	
	Manage quality assurance and quality control framework	<ul style="list-style-type: none"> • Assist with the monitoring of manufacturing processes, according to validation plans and schedules • Assist in identifying out-of-specification (OOS), deviations and quality problems of products, materials, packaging and utilities • Collect information and data required for validation activities in line with standard operating procedures (SOPs) • Record results of internal and external audits and organise information for product and process quality metric management reports 	
	Rectify issues of non-compliance	<ul style="list-style-type: none"> • Support traceability investigations into lapses in quality, hygiene standards and non-compliance to quality standards 	

Quality Control Technician/Quality Control Assistant/ Laboratory Technician

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Chemical Risk Management	Level 2	Teamwork	Basic
	Cleanliness Testing	Level 3	Problem Solving	Basic
	Continuous Process Improvement	Level 3	Communication	Basic
	Document Control	Level 2	Interpersonal Skills	Basic
	Emergency Response Management	Level 2	Sense Making	Basic
	Food Safety Analysis	Level 2		
	Food Safety Management	Level 1		
	Good Manufacturing Practices Implementation	Level 3		
	Hazards and Risk Control, and Policy Management	Level 2		
	Innovation Management	Level 3		
	Laboratory Data Analysis	Level 2		
	Laboratory Management	Level 2		
	Manufacturing Process Management	Level 3		
	Packaging Testing	Level 3		
	Process Validation	Level 2		
	Product Testing	Level 2		
	Project Management	Level 3		
	Quality Assurance Management	Level 3		
	Quality Control Management	Level 3		
	Quality System Management	Level 2		
	Stakeholder Management	Level 3		
	Systems Thinking	Level 3		
	Technical Report Writing	Level 2		
	WSH Performance Management	Level 2		

Quality Assurance and Quality Control Supervisor/ Quality Assurance and Quality Control Executive/ Laboratory Supervisor

JOB ROLE DESCRIPTION

The Quality Assurance and Quality Control (QA&QC) Supervisor/QA&QC Executive/Laboratory Supervisor monitors sampling and product quality testing activities, performs non-standard quality tests, and manages associated documentation of data and test results. He/She implements the operating criteria for laboratory equipment and materials to be used for testing of food products, packaging and manufacturing processes to ensure compliance with organisational standards in food safety and quality. In addition, he implements standard operating procedures (SOPs) and workflow improvements in the laboratory.

He needs to exercise critical and analytical thinking to review data and identify discrepancies against set criteria. He requires strong communication and teamwork to collaborate effectively with others to fulfil work objectives.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Conduct tests for food quality and packaging	<ul style="list-style-type: none"> Plan and monitor daily and monthly testing schedules and ensure samples are analysed within targeted plans Guide sample collection activities according to specified procedures and take actions for abnormal occurrences affecting sampling conditions Guide testing activities to ensure correct testing volumes, conditions and processes are employed Perform routine and non-standard tests of materials and products independently Verify documented sampling and test data and conduct follow-up tests on samples that require attention Generate reports and supporting documentation 	In accordance with: <ul style="list-style-type: none"> ISO 22000 Food safety management systems Singapore Standard (SS) 590 SS 444 Food Safety System Certification (FSSC) 22000 Good laboratory practices (GLP) Good manufacturing practices (GMP)
	Maintain standards and quality processes in food manufacturing operations	<ul style="list-style-type: none"> Inspect outgoing shipments for picking errors, and perform root cause analyses to prevent future errors Monitor critical control points in quality control (QC) processes Analyse testing results and the frequency and severity of product defects and quality lapses Verify and sign off on daily QC records, test results and procedures Prepare test reports for submission to regulatory authorities such as Agri-Food & Veterinary Authority of Singapore (AVA) 	
	Manage laboratory operations	<ul style="list-style-type: none"> Implement the organisation's operational excellence model for laboratory work Perform inspections and tests on laboratory infrastructure, equipment and utilities Verify that instrument performance and calibration for laboratory equipment are met Verify data integrity and records and perform data analyses 	
	Manage quality assurance and quality control framework	<ul style="list-style-type: none"> Verify that manufacturing processes are performed in line with established standards and organisational policies Develop and implement all food safety-related prerequisite programs and quality operational excellence models for investigations Implement validation processes for production lines and review processes for products and packaging quality Compile data and prepare quality metric reports Perform internal audits, root cause analyses on findings and develop corrective actions Prepare regular audit reports for submission to regulatory authorities 	
	Rectify issues of non-compliance	<ul style="list-style-type: none"> Support traceability investigations into lapses in quality and non-compliance to quality standards Undertake and report on corrective actions for non-compliant cases that can be resolved within defined procedures 	

Quality Assurance and Quality Control Supervisor/ Quality Assurance and Quality Control Executive/ Laboratory Supervisor

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Change Management	Level 3	Problem Solving	Intermediate
	Chemical Risk Management	Level 3	Communication	Intermediate
	Cleanliness Testing	Level 4	Interpersonal Skills	Intermediate
	Conflict Resolution	Level 4	Teamwork	Intermediate
	Continuous Process Improvement	Level 4	Sense Making	Intermediate
	Document Control	Level 3		
	Emergency Response Management	Level 2		
	Food Safety Analysis	Level 3		
	Food Safety Management	Level 2		
	Good Manufacturing Practices Implementation	Level 4		
	Hazards and Risk Control, and Policy Management	Level 3		
	Innovation Management	Level 4		
	Laboratory Data Analysis	Level 3		
	Laboratory Management	Level 3		
	Manufacturing Process Management	Level 4		
	Packaging Testing	Level 4		
	Process Validation	Level 3		
	Product Testing	Level 3		
	Project Management	Level 4		
	Quality Assurance Management	Level 3		
	Quality Control Management	Level 3		
	Quality System Management	Level 3		
	Stakeholder Management	Level 3		
	Systems Thinking	Level 4		
	Technical Presentation	Level 4		
	Technical Report Writing	Level 3		
	WSH Performance Management	Level 3		

Quality Assurance and Quality Control Specialist/ Food Safety Specialist/Laboratory Manager

JOB ROLE DESCRIPTION

The Quality Assurance and Quality Control (QA&QC) Specialist/Food Safety Specialist/Laboratory Manager develops sampling plans and procedures for testing product quality. He/She maintains standards and quality processes in food manufacturing operations by verifying test results and audits for compliance with food safety regulations and requirements set by regulatory authorities. He determines the optimal operating conditions for the laboratory's infrastructure and equipment and investigates underlying causes, technical faults or practices that impact laboratory operations. He develops standard operating procedures (SOPs) in line with good laboratory practices (GLPs), good manufacturing practices (GMPs), regulatory requirements and guidelines in food safety management and control, such as ISO standards and Hazards and Critical Control Points (HACCP) system.

He possesses excellent analytical skills and sound judgement for establishing critical guidelines, parameters and procedures within the laboratory and with other functional departments in the organisation. Often working in a team and having to supervise and guide others, he should work well in a team and possess strong communication skills to interact effectively with others to achieve organisational objectives.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Conduct tests for food quality and packaging	<ul style="list-style-type: none"> • Develop sampling plans for quality control purposes • Establish standard operating procedures (SOPs) and conditions for handling, storage and preservation of samples • Develop inspection and testing protocols for materials, products and packaging • Verify alignment of sampling documentation, testing activities and procedures with established protocols to identify anomalies and issues 	In accordance with: <ul style="list-style-type: none"> • ISO 22000 Food safety management systems • Singapore Standard (SS) 590 • SS 444 • Food Safety System Certification (FSSC) 22000 • Good laboratory practices (GLP) • Good manufacturing practices (GMP) • Specifications within the <i>Codex Alimentarius</i>
	Maintain standards and quality processes in food manufacturing operations	<ul style="list-style-type: none"> • Develop methods and indicators of success for the testing quality of materials, products and packaging • Inspect facilities, equipment, products and/or production lines to ensure food is prepared according to safety modulations of food planning and situational health sections • Conduct root cause analyses for product defects and quality lapses • Verify quality control (QC) records, test results and reports for submission to regulatory authorities 	
	Manage laboratory operations	<ul style="list-style-type: none"> • Develop SOPs and infrastructure requirements for laboratories and optimal calibration standards for laboratory equipment operation, in line with good laboratory practice (GLP) requirements • Specify the protocols and laboratory infrastructure, equipment and utilities to be inspected and tested • Investigate underlying causes, technical faults and practices that impact laboratory equipment operations and infrastructure functionality • Review reports and develop guidelines and standard practices for data documentation and analysis 	
	Manage quality assurance and quality control framework	<ul style="list-style-type: none"> • Develop SOPs that align with regulatory requirements, industry guidelines and organisation's policies • Implement plans and strategies to facilitate provision of safe food products • Participate in quality management system reviews and promote quality and food safety policies to all personnel • Develop product and process quality metric reports • Lead internal and external quality, and food safety related audits 	
	Rectify issues of non-compliance	<ul style="list-style-type: none"> • Lead traceability investigations on the source of quality lapses and other product issues • Lead root cause analyses and investigations into process deviations and for product defects and quality lapses • Oversee corrective and preventative actions (CAPA) implementation and documentation in collaboration with other departments 	

Quality Assurance and Quality Control Specialist/ Food Safety Specialist/Laboratory Manager

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Budgeting	Level 3	Problem Solving	Intermediate
	Business Continuity Management	Level 4	Communication	Intermediate
	Business Performance Management	Level 4	Sense Making	Intermediate
	Change Management	Level 4	Interpersonal Skills	Intermediate
	Chemical Risk Management	Level 4	Decision Making	Intermediate
	Cleanliness Testing	Level 4		
	Conflict Resolution	Level 4		
	Continuous Process Improvement	Level 4		
	Document Control	Level 4		
	Emergency Response Management	Level 2		
	Food Safety Analysis	Level 4		
	Food Safety Management	Level 3		
	Good Manufacturing Practices Implementation	Level 4		
	Hazards and Risk Control, and Policy Management	Level 4		
	Innovation Management	Level 4		
	Laboratory Data Analysis	Level 4		
	Laboratory Management	Level 4		
	Manufacturing Process Management	Level 4		
	Packaging Testing	Level 4		
	Process Validation	Level 4		
	Product Testing	Level 4		
	Project Management	Level 4		
	Quality Assurance Management	Level 4		
	Quality Control Management	Level 4		
	Quality System Management	Level 4		
	Risk Management	Level 4		
	Stakeholder Management	Level 3		
	Strategy Development	Level 4		
	Systems Thinking	Level 4		
	Technical Presentation	Level 4		
	Technical Report Writing	Level 4		
	WSH Performance Management	Level 3		

Quality Assurance and Quality Control Manager

JOB ROLE DESCRIPTION

The Quality Assurance and Quality Control (QA&QC) Manager has the overall responsibility for the manufacturing facility's QA&QC strategies, objectives, policies and processes while maintaining oversight of the department's operational status. He/She reviews the quality testing policies and procedures, ensuring alignment with regulatory standards in food manufacturing and best practices. He is well-versed in good laboratory practices (GLPs), good manufacturing practices (GMPs), regulatory requirements and guidelines in food safety management and control, such as ISO standards and Hazards and Critical Control Points (HACCP) system. He oversees internal and external audits, and leads investigations into major quality deviations in the organisation's products to determine their root causes and provides input into designing improved processes for ensuring quality standards in the food production plant.

The QA&QC Manager possesses strong leadership skills to provide clear guidance on critical work activities, and to develop skills and capabilities in his department. He requires advanced problem-solving skills and a strong ability to consider issues from multiple perspectives in order to make well-informed and effective decisions for the department.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Conduct tests for food quality and packaging	<ul style="list-style-type: none"> Establish organisational plans for testing of products, associated materials and packaging Review and make recommendations to address anomalies and issues identified from the testing activities 	In accordance with: <ul style="list-style-type: none"> ISO 22000 Food safety management systems Singapore Standard (SS) 590 SS 444 Food Safety System Certification (FSSC) 22000 Good laboratory practices (GLP) Good manufacturing practices (GMP) Specifications within the <i>Codex Alimentarius</i>
	Maintain standards and quality processes in food manufacturing operations	<ul style="list-style-type: none"> Formulate the organisation's quality testing policy in alignment with regulatory standards and requirements Introduce industry best practices and trends in quality inspection and testing methods Maintain oversight of quality control (QC) tasks, ensuring proper documentation of records and review of reports submitted to regulatory authorities 	
	Manage laboratory operations	<ul style="list-style-type: none"> Devise an operational excellence model for laboratory work based on industry and good laboratory practices (GLPs) Establish operational, analytical and documentation standards in line with industry best practices and communicate data trends and results to stakeholders Provide expertise on determining the optimal calibration standards for laboratory equipment operation Communicate potential implications of QC data trends and results to relevant stakeholders 	
	Manage quality assurance and quality control framework	<ul style="list-style-type: none"> Review and endorse standard operating procedures (SOPs) and plans, ensuring alignment with regulatory requirements, industry guidelines and organisation's policies Design quality assurance (QA) policies to prevent issues that could lead to sub-optimal product quality Review product and process quality metric reports Determine extent of the manufacturing plant's control over quality deviations Review audit results and the proposed changes to procedures Translate internal and external audit policies into procedures and checks to be followed 	
	Rectify issues of non-compliance	<ul style="list-style-type: none"> Devise an operational excellence model for investigations Oversee investigations into major process deviations to determine root causes Evaluate the impact of process deviations on the production operations and the need for corrective and preventative actions (CAPAs) 	

Quality Assurance and Quality Control Manager

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Budgeting	Level 4	Problem Solving	Advanced
	Business Continuity Management	Level 5	Decision Making	Advanced
	Business Negotiation	Level 4	Communication	Advanced
	Business Performance Management	Level 5	Interpersonal Skills	Advanced
	Change Management	Level 5	Sense Making	Advanced
	Chemical Risk Management	Level 5		
	Cleanliness Testing	Level 5		
	Conflict Resolution	Level 5		
	Continuous Process Improvement	Level 5		
	Document Control	Level 4		
	Emergency Response Management	Level 2		
	Food Safety Analysis	Level 5		
	Food Safety Management	Level 4		
	Good Manufacturing Practices Implementation	Level 5		
	Hazards and Risk Control, and Policy Management	Level 4		
	Innovation Management	Level 5		
	Laboratory Management	Level 5		
	Packaging Testing	Level 5		
	Process Validation	Level 5		
	Product Testing	Level 5		
	Project Management	Level 5		
	Quality Assurance Management	Level 5		
	Quality Control Management	Level 5		
	Quality System Management	Level 5		
	Risk Management	Level 5		
	Stakeholder Management	Level 4		
	Strategy Development	Level 5		
	Systems Thinking	Level 5		
	Technical Presentation	Level 5		
	Technical Report Writing	Level 4		
	WSH Performance Management	Level 4		

Research and Development

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Technical Manager/ Senior Flavourist

Kelly Awyong
KH Roberts Pte Ltd

A JOB FOR THE SENSES

As a Senior Flavourist, Kelly Awyong gets to create nature-identical tastes and aromas that enhance the flavours of food. She develops flavour formulations for various food applications, and ensures that they comply with local and international food regulations. She also leads the Research and Innovation team at KH Roberts in managing projects, and mentors younger colleagues at the same time.

With 19 years of experience in creating flavours, Kelly emphasises that possessing the right qualifications is only one prerequisite contributing to the skill set of a flavourist. “Flavourists must have an innate ability to distinguish various food characteristics through smell and taste, and have a deep understanding of how it evokes certain emotions or memories in people through food and beverage”, she explains.

Technology has a significant role in the research and development behind flavour creation, and much of it is conceived in the laboratory. In the past, flavourists relied on artistry skills to deconstruct and reconstruct flavour profiles. Today, modern technologies have simplified the process, reducing the time spent on modifying formulae to get the ideal results. As evolved as technology is today, Kelly points out that the human factor is nonetheless significant, as our sense of smell is still the most sensitive, and better in detecting scents than any equipment to date. “This puts us, flavourists, in a perfect position where technological evolution meets with human artistry”, she says.

Kelly anticipates greater growth of the flavourists’ profession in Southeast Asia in the near future. She

elaborates that, because the practice was established in Europe, the vast library of natural extracts available for use are native to our western counterparts, but ingredients from the Asian region are more limited. “There needs to be more efforts so that Asia will also be a forerunner in discovering new ingredients to develop flavours that resonate more with our culture”, she opines.

Although the flavourist is not as well-known as other professions in the food manufacturing sector, Kelly believes that people who are considering to join can understand what the roles entail and their required competencies through the Skills Framework, allowing them to make informed decisions. “The Skills Framework offers a holistic view of the skills and competencies needed for various roles within our industry. It also maps out exciting career paths this industry offers.”

“No matter how advanced science or technology can be, there needs to be the human touch in fulfilling the artistry part of flavour creation, which I believe can never be replaced by robots.”

Assistant Food Technologist

JOB ROLE DESCRIPTION

The Assistant Food Technologist supports product, packaging and process development by preparing equipment and materials, and assisting in consolidating data and results of experiments for defining the specifications of products and/or processes. He/She prepares samples and materials required for tests to characterise ingredients and determine product specifications. He supports the development and improvement of manufacturing processes by assisting in troubleshooting new and/or existing production processes to resolve production, quality and regulatory compliance issues.

The Assistant Food Technologist may work in a food science laboratory and should be meticulous in checking that materials are at hand and verifying protocols to be used before starting procedures to conduct trials. He should be able to apply basic analysis to identify and derive solutions to issues within his area of work.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Innovate new food products	<ul style="list-style-type: none"> Assist in identifying process control, sampling and monitoring points and related performance parameters to achieve critical material attributes of the final product Assist in creating product prototypes through experimentation and laboratory tests Assist in ingredient development and execution of related laboratory activities Explore new applications of existing products and processes Assist in data consolidation for new product specifications Consolidate sensory testing and consumer data for further product refinements 	In accordance with: <ul style="list-style-type: none"> ISO 22000 Food safety management systems Singapore Standard (SS) 590 SS 444 Food Safety System Certification (FSSC) 22000 Good laboratory practices (GLP) Good manufacturing practices (GMP) Specifications within the <i>Codex Alimentarius</i>
	Conduct tests for food quality	<ul style="list-style-type: none"> Prepare samples, standards and solutions for testing of new products Conduct chemical and microbiological tests Assist in physical testing on new food products from mass production Assist in consolidating experimental data 	
	Operationalise manufacturing of new products	<ul style="list-style-type: none"> Participate in production trials and record test and development data throughout the product development lifecycle Assist in recipe formulation for mass production purposes and compliance to regulatory and other requirements Study methods to improve quality of new food products and compliance with food regulations during mass production Assist in troubleshooting new or modified production processes to resolve production, quality and regulatory compliance issues Assist in identifying modifications to existing processes and equipment 	
	Conceptualise marketing for products	<ul style="list-style-type: none"> Consolidate product formulations and other information to build product profiles for marketing 	

Assistant Food Technologist

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Active and Smart Packaging	Level 3	Communication	Intermediate
	Advanced Processing Technology	Level 3	Teamwork	Basic
	Change Management	Level 3	Interpersonal Skills	Intermediate
	Chemical Risk Management	Level 2	Problem Solving	Basic
	Continuous Process Improvement	Level 3	Creative Thinking	Basic
	Data Synthesis	Level 4		
	Document Control	Level 2		
	Emergency Response Management	Level 2		
	Food Product Marketing	Level 3		
	Food Safety Analysis	Level 3		
	Food Safety Management	Level 2		
	Good Manufacturing Practices Implementation	Level 3		
	Green Manufacturing Design and Implementation	Level 3		
	Hazards and Risk Control, and Policy Management	Level 2		
	Innovation Management	Level 3		
	Laboratory Data Analysis	Level 2		
	Laboratory Management	Level 2		
	New Product Introduction for Food	Level 3		
	Packaging Testing	Level 3		
	Process Validation	Level 2		
	Product Improvement	Level 3		
	Product Testing	Level 2		
	Project Management	Level 3		
	Quality Assurance Management	Level 3		
	Quality System Management	Level 2		
	Recipe Formulation	Level 4		
	Stakeholder Management	Level 3		
	Systems Thinking	Level 3		
	Technical Presentation	Level 4		
	Technical Report Writing	Level 2		
	WSH Performance Management	Level 2		

Food Technologist

JOB ROLE DESCRIPTION

The Food Technologist develops and improves products through experimentation, performs tests on food ingredients and product prototypes, and ensures that correct methodologies are used to generate information for the required food quality and consistency standards. He/She holds a strategic role in the organisation, supporting the production function by providing food science expertise in designing processes to manufacture new food products with the required specifications on a commercial scale, and supporting the business development function in profiling products for marketing purposes and meeting regulatory requirements for sales and export.

The Food Technologist may work in a food science laboratory and/or participate in cooking sessions in new product development. He should have good sensory skills to perform evaluations of flavours and to create new recipes and/or formulations for products. He should be able to work independently and possess analytical and problem-solving skills to improve manufacturing processes.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Innovate new food products	<ul style="list-style-type: none"> Propose process control, sampling and monitoring points and related performance parameters to achieve critical material attributes of final products Create product prototypes through experimentation and laboratory tests Participate in ingredient development and execution of related laboratory activities Explore new applications of existing products and processes Evaluate products' characteristics and shelf life for implications on quality and scalability Establish product specifications and documentation Formulate product refinements based on sensory testing and consumer data 	In accordance with: <ul style="list-style-type: none"> ISO 22000 Food safety management systems Singapore Standard (SS) 590 SS 444 Food Safety System Certification (FSSC) 22000 Good laboratory practices (GLP) Good manufacturing practices (GMP) Specifications within the <i>Codex Alimentarius</i>
	Conduct tests for food quality	<ul style="list-style-type: none"> Guide sample collection activities, ensuring compliance with specified procedures Perform appropriate actions for any abnormal occurrences affecting sampling conditions Guide testing activities to ensure correct test methods, conditions and processes are employed Conduct follow-up tests on samples that require attention Perform physical testing on food products from new mass production lines Document, compile and summarise experimental data for review and interpretation 	
	Operationalise manufacturing of new products	<ul style="list-style-type: none"> Conceptualise mass production processes for food products using current facilities and equipment Refine recipe formulation for mass production purposes and compliance to regulatory and other requirements Review methods to improve quality of new food products and compliance with food regulations during mass production Troubleshoot new or modified production processes to resolve production, quality and regulatory compliance issues Make recommendations in the design of new manufacturing processes or modify existing equipment or processes 	
	Conceptualise marketing for products	<ul style="list-style-type: none"> Verify product formulations and other information for constructing product profiles Conceptualise 'product stories' from food preparation processes for marketing purposes 	

Food Technologist

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Active and Smart Packaging	Level 4	Interpersonal Skills	Intermediate
	Advanced Processing Technology	Level 4	Communication	Intermediate
	Change Management	Level 4	Teamwork	Intermediate
	Chemical Risk Management	Level 3	Creative Thinking	Intermediate
	Conflict Resolution	Level 4	Problem Solving	Intermediate
	Continuous Process Improvement	Level 4		
	Data Synthesis	Level 4		
	Document Control	Level 3		
	Emergency Response Management	Level 2		
	Food Manufacturing Process Design	Level 4		
	Food Product Marketing	Level 3		
	Food Safety Analysis	Level 4		
	Food Safety Management	Level 2		
	Good Manufacturing Practices Implementation	Level 4		
	Green Manufacturing Design and Implementation	Level 4		
	Hazards and Risk Control, and Policy Management	Level 2		
	Innovation Management	Level 4		
	Laboratory Data Analysis	Level 3		
	Laboratory Management	Level 3		
	New Product Introduction for Food	Level 3		
	Packaging Testing	Level 3		
	Process Validation	Level 3		
	Product Improvement	Level 4		
	Product Testing	Level 3		
	Project Management	Level 4		
	Quality Assurance Management	Level 3		
	Quality System Management	Level 3		
	Recipe Formulation	Level 4		
	Stakeholder Management	Level 3		
	Systems Thinking	Level 4		
	Technical Presentation	Level 4		
	Technical Report Writing	Level 3		
	WSH Performance Management	Level 3		

Research and Development Chef

JOB ROLE DESCRIPTION

The Research and Development (R&D) Chef holds an important role in creating new recipes to expand the organisation's food product offerings. He/She formulates new recipes in response to ideas and market signalling for new product demands and further refines his recipes and preparation techniques to fulfil the requirements in mass production and regulatory needs while balancing concerns over the taste profiles. As the creator of recipes, he may also be consulted upon to help conceptualise marketing strategies, based on his approach and ideas in creating new products.

The R&D Chef possesses both strong interest and skills in culinary arts, typically honed in the food and beverage sector. He works in a kitchen and/or laboratory and is expected to possess a measure of food science knowledge to complement his creativity with considerations for nutrition and mass production needs. He should have a deep understanding of cultural and culinary trends and a high level of creativity in product development and presentation.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Innovate new food products	<ul style="list-style-type: none"> • Create new recipes and refine taste profiles through experimentation • Evaluate the abilities of current and alternative ingredients to meet customer needs and requirements • Modify new product recipes and ingredient selection to balance flavour profiles with nutrition, shelf life and regulatory compliance needs • Assist in data consolidation for new product specifications • Establish product specifications and documentation • Formulate product refinements based on sensory testing and consumer data • Plan, manage and run panel sessions and sensory tests on experimental and new food products 	In accordance with: <ul style="list-style-type: none"> • ISO 22000 Food safety management systems • Singapore Standard (SS) 590 • SS 444 • Food Safety System Certification (FSSC) 22000 • Good laboratory practices (GLP) • Good manufacturing practices (GMP)
	Operationalise manufacturing of new products	<ul style="list-style-type: none"> • Propose alternative ingredients and food preparation processes to meet mass production and compliance needs • Suggest modifications to new food production processes • Refine recipe formulation for mass production purposes and compliance to regulatory and other requirements • Review methods to improve quality of new food products and compliance with food regulations during mass production • Troubleshoot new or modified production processes to resolve production, quality and regulatory compliance issues • Make recommendations in the design of new manufacturing processes or modify existing equipment or processes 	
	Conceptualise marketing for new products	<ul style="list-style-type: none"> • Support sales team by preparing samples for local and overseas customers • Verify product formulations and other information for constructing product profiles • Conceptualise 'product stories' from food preparation processes for marketing purposes 	

Research and Development Chef

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Change Management	Level 4	Creative Thinking	Intermediate
	Conflict Resolution	Level 4	Interpersonal Skills	Intermediate
	Continuous Process Improvement	Level 4	Teamwork	Intermediate
	Document Control	Level 3	Communication	Intermediate
	Emergency Response Management	Level 2	Global Mindset	Intermediate
	Food Manufacturing Process Design	Level 4		
	Food Product Marketing	Level 3		
	Food Safety Management	Level 2		
	Good Manufacturing Practices Implementation	Level 3		
	Green Manufacturing Design and Implementation	Level 3		
	Hazards and Risk Control and Policy Management	Level 2		
	Innovation Management	Level 4		
	Process Validation	Level 3		
	Product Improvement	Level 4		
	Project Management	Level 4		
	Quality Assurance Management	Level 4		
	Quality System Management	Level 3		
	Recipe Formulation	Level 5		
	Stakeholder Management	Level 3		
	Technical Presentation	Level 4		
	WSH Performance Management	Level 3		

Product Technologist/Innovation Manager

JOB ROLE DESCRIPTION

The Product Technologist/Innovation Manager leads and initiates the development of food products and processes as driven by business needs of the organisation. He/She oversees new product development throughout its life cycle from conception to manufacturing implementation, including the sensory evaluations of food products and definition of manufacturing formulation and process control parameters. He manages the developmental process to ensure that the final product, packaging and processes meets the required technical, quality and regulatory standards.

The Product Technologist/Innovation Manager may have the opportunity to travel overseas to explore new technologies and innovations in food products or validate the implementation of new manufacturing processes at overseas branches. He has a versatile and creative mind and is able to combine scientific knowledge with his passion for food and cooking to translate ideas into innovative products and solutions. He should have a passion for new knowledge and strong organisational and planning skills to motivate and drive a climate of innovation in his department.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Innovate new food products	<ul style="list-style-type: none"> Define critical material attributes of final products that must be controlled to meet target product quality profiles Oversee development of new and value-added products from conceptualisation to final production Evaluate scientific information to generate concepts for new product innovations Compile formulae, ingredient statements, and nutrition information for new products' conformance to regulations Plan, manage and run panel sessions and sensory tests on experimental and new food products 	In accordance with: <ul style="list-style-type: none"> ISO 22000 Food safety management systems Singapore Standard (SS) 590 SS 444 Food Safety System Certification (FSSC) 22000 Good laboratory practices (GLP) Good manufacturing practices (GMP) Specifications within the <i>Codex Alimentarius</i>
	Conduct tests for food quality	<ul style="list-style-type: none"> Develop sampling plans for new product testing Develop testing protocols for materials, products and packaging for new products Verify alignment of testing activities and procedures with established protocols Verify documented test data for accuracy and possible issues with product safety and quality 	
	Operationalise manufacturing of new products	<ul style="list-style-type: none"> Review technologies for scaling-up manufacturing processes for new products Develop specifications for production, purchasing, and quality assurance in the commercialisation of new products to meet regulatory requirements and labelling standards Work with all departments to coordinate new product production processes 	
	Conceptualise marketing for products	<ul style="list-style-type: none"> Provide product formulations for costing systems and relevant information to create accurate pricing data Conceptualise "product stories" from food preparation processes for marketing purposes 	
	Drive innovation and research	<ul style="list-style-type: none"> Test and scale new and emerging food and business solutions Refine parameters of new technologies application to improve properties of manufactured food products 	

Product Technologist/Innovation Manager

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Active and Smart Packaging	Level 5	Communication	Advanced
	Advanced Processing Technology	Level 5	Creative Thinking	Advanced
	Budgeting	Level 4	Decision Making	Intermediate
	Business Continuity Management	Level 4	Problem Solving	Advanced
	Business Performance Management	Level 5	Interpersonal Skills	Advanced
	Change Management	Level 5		
	Chemical Risk Management	Level 4		
	Conflict Resolution	Level 5		
	Continuous Process Improvement	Level 5		
	Data Analytics System Design	Level 4		
	Data Synthesis	Level 5		
	Document Control	Level 4		
	Emergency Response Management	Level 2		
	Food Manufacturing Process Design	Level 5		
	Food Safety Analysis	Level 4		
	Food Safety Management	Level 3		
	Good Manufacturing Practices Implementation	Level 4		
	Green Manufacturing Design and Implementation	Level 5		
	Hazards and Risk Control, and Policy Management	Level 3		
	Innovation Management	Level 5		
	Laboratory Data Analysis	Level 4		
	Laboratory Management	Level 4		
	New Product Introduction for Food	Level 4		
	Packaging Testing	Level 4		
	Process Validation	Level 4		
	Product Improvement	Level 5		
	Product Testing	Level 4		
	Project Management	Level 5		
	Quality Assurance Management	Level 4		
	Quality System Management	Level 4		
	Risk Management	Level 4		
	Stakeholder Management	Level 4		
	Strategy Development	Level 4		
	Systems Thinking	Level 5		
	Technical Presentation	Level 5		
	Technical Report Writing	Level 4		
	WSH Performance Management	Level 4		

Chief Research and Development Officer

JOB ROLE DESCRIPTION

The Chief Research and Development (R&D) Officer leads research for the adoption of new technology and equipment to enhance the organisation's operational excellence and business competitiveness. He/She advises on advanced methods and techniques to design new food products and/or enhance processes for improved production capacity and capabilities. He approves the specifications of final products, packaging and processes to meet the required technical, quality and regulatory standards.

At the organisational level, he designs the technology and innovation roadmap and drives continuous improvement strategies by leveraging on his strong domain knowledge in food science technology. He should possess a strong interest in new technology and advances in food science to fulfil his responsibility in delivering innovative and competitive solutions and overseeing all R&D projects. He is a strategic and creative thinker, who demonstrates exceptional problem-solving and communication skills, and networks effectively.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS	PERFORMANCE EXPECTATIONS
	Innovate new food products	<ul style="list-style-type: none"> • Drive technical innovations to differentiate products, processes or packaging • Lead innovation in new technologies for product innovation and production processes • Build business cases for implementing new technologies in partnership with other enterprises 	In accordance with: <ul style="list-style-type: none"> • ISO 22000 Food safety management systems • Singapore Standard (SS) 590 • SS 444 • Food Safety System Certification (FSSC) 22000 • Good laboratory practices (GLP) • Good manufacturing practices (GMP) • Specifications within the <i>Codex Alimentarius</i>
	Operationalise manufacturing of new products	<ul style="list-style-type: none"> • Oversee modelling and implementation of manufacturing processes for new products • Establish and integrate organisational quality policies, food safety and regulatory requirements into innovation strategies and manufacturing of new products • Evaluate outcomes of new products and processes to deliver improved business results from the innovation 	
	Conceptualise marketing for products	<ul style="list-style-type: none"> • Set direction for enhancing business competitiveness in the development of new products • Drive improvements in conceptualisation of "product stories" to support organisational initiatives in capturing new markets 	
	Drive innovation and research	<ul style="list-style-type: none"> • Evaluate benefits, trade-offs and impact of new technologies in production • Formulate innovation initiatives aligned to the organisation's vision, mission and values • Develop and execute organisational innovation and research roadmaps • Develop business cases for implementing new technologies in the organisation 	

Product Technologist/Innovation Manager

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Active and Smart Packaging	Level 6	Decision Making	Advanced
	Advanced Processing Technology	Level 6	Global Mindset	Advanced
	Budgeting	Level 5	Leadership	Advanced
	Business Continuity Management	Level 5	Interpersonal Skills	Advanced
	Business Performance Management	Level 6	Communication	Advanced
	Change Management	Level 6		
	Chemical Risk Management	Level 5		
	Conflict Resolution	Level 5		
	Continuous Process Improvement	Level 5		
	Data Analytics System Design	Level 5		
	Data Synthesis	Level 6		
	Document Control	Level 4		
	Emergency Response Management	Level 2		
	Food Manufacturing Process Design	Level 6		
	Food Safety Management	Level 4		
	Good Manufacturing Practices Implementation	Level 5		
	Green Manufacturing Design and Implementation	Level 5		
	Hazards and Risk Control, and Policy Management	Level 3		
	Innovation Management	Level 6		
	International Trade Legislation for Business	Level 2		
	Laboratory Management	Level 5		
	New Product Introduction for Food	Level 5		
	Packaging Testing	Level 5		
	Process Validation	Level 5		
	Product Testing	Level 5		
	Production Performance Management	Level 5		
	Project Management	Level 6		
	Quality Assurance Management	Level 5		
	Quality Control Management	Level 5		
	Quality System Management	Level 5		
	Risk Management	Level 6		
	Stakeholder Management	Level 5		
	Strategy Development	Level 6		
	Systems Thinking	Level 5		
	Technical Presentation	Level 6		
	Technical Report Writing	Level 4		
	WSH Performance Management	Level 2		

Business Development

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Associate Vice President

Shaun Jayaratnam
Vega Foods Corp. Pte Ltd

BETTER FOOD FOR BETTER LIFE

It was during the 1997 financial crisis that Shaun Jayaratnam had the realisation that the food industry was one that could endure in both economic boom and recession, because food is an essential good. The eureka moment prompted him to apply his sales and marketing skills to the food manufacturing sector, which then kick-started a 20-year career.

Today, as Associate Vice President of Vega Foods Corporation, Shaun manages the overall business expansion, as well as product development and marketing. He explains that a lot of work goes into manufacturing a product for export, and one key attribute for success, is to adopt a hands-on approach. "Every day there is a different challenge to overcome, from sourcing and procuring of ingredients to warehousing and logistics. It also needs to meet local specifications, and be attractive to consumers. All these challenges provide various opportunities for personal growth and career development, and that makes for a satisfying career", he says.

Shaun shares that commercial expansion in the food manufacturing sector is a challenging business. In his company's key market of Africa, price-sensitivity and local tastes means research and development of new customised products that meet market demands require extensive efforts. "This can take months, and may or may not be successful. Or it may just be shelved, because it is either wrong, or too early for the market", he reveals.

The rapid adoption of technology is one trend that Shaun follows closely. "Before entering the industry,

I used to think that it was labour-intensive, but what I saw was lots of innovation and technology applied to keep up with food trends", he shares. What he observed however, was that the use of cost-effective, energy-efficient advanced technology and artificial intelligence has translated to savings in time and resources. This has led him to believe that it is essential for professionals in his sector to be conversant with the latest technology.

Regardless of whether one is already within the sector or a new entrant, Shaun advises them to turn to the Skills Framework, as it not only shows emerging trends, but offers initiatives that may help them attain new skills in order to remain ahead of the curve. "As an employee, two particular initiatives stand out, namely the SkillsFuture Mid-Career Enhanced Subsidy and the SkillsFuture study award; these subsidies help to defray the course fees, and can help to encourage us to upskill."

"Before entering the industry, I used to think that it was labour intensive but what I saw was lots of innovation and technology applied to keep up with food trends."

Assistant Market Development Manager/ Market Development Executive

JOB ROLE DESCRIPTION

The Assistant Market Development Manager/Market Development Executive supports development of new markets and customer base by implementing marketing programmes and communication plans within allocated budgets, and assessing their effectiveness for further improvement.

He/She manages relationships with the organisation's business partners to facilitate promotion of food products and maintaining of distribution channels. He further supports the organisation's marketing efforts by gathering market data and testing the effectiveness of implemented campaigns.

He possesses strong technical product knowledge and understanding of both cultural and food regulatory matters related to his assigned markets and consumer demographics. He is creative, resourceful, and possesses good communication and negotiation skills.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Manage brand equity	<ul style="list-style-type: none"> Analyse market trends and developments for impact on marketing activities Generate design concepts and ideas for marketing campaigns and communications materials Select platforms or media to support marketing campaigns Assess effectiveness of public relations communication programmes Assist in managing domestic marketing and advertising campaigns
	Drive business-to-business marketing	<ul style="list-style-type: none"> Maintain relationships with key and new domestic business partners Resolve business relationship management conflicts Analyse market needs and opportunities to assess clients' interest level and needs
	Drive business-to-customer marketing	<ul style="list-style-type: none"> Plan and implement sales promotions and/or events Monitor marketing activities effectiveness Manage customer acquisition and retention programmes
	Develop new business channels	<ul style="list-style-type: none"> Conduct research to identify emerging market trends, business opportunities and market segments in global and local landscape Suggest ideas to address market opportunities and threats Analyse trends and past performance to assess consumers' interest level and needs Execute data-mining and analysis activities Prepare insight reports on data-mining outcomes Track and report business outcomes of data-driven insights

Assistant Market Development Manager/ Market Development Executive

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Brand Portfolio Management	Level 3	Service Orientation	Intermediate
	Business Environment Analysis	Level 2	Interpersonal Skills	Intermediate
	Business Negotiation	Level 3	Communication	Basic
	Business Opportunities Development	Level 3	Creative Thinking	Basic
	Business Relationship Building	Level 3	Teamwork	Basic
	Communications Channel Management	Level 3		
	Consumer Intelligence Analysis	Level 2		
	Customer Acquisition Management	Level 2		
	Customer Behaviour Analysis	Level 2		
	Customer Loyalty and Retention Strategy Formulation	Level 4		
	E-commerce Campaign Management	Level 2		
	Emergency Response Management	Level 2		
	Food Product Marketing	Level 2		
	International Marketing Programmes Management	Level 3		
	International Trade Legislation for Business	Level 2		
	Market Research	Level 2		
	Marketing Communications Plan Development	Level 2		
	New Export Market Entry Strategy Formulation	Level 4		
	Product Improvement	Level 2		
	Project Management	Level 3		
	Social Media Marketing	Level 2		
	Stakeholder Management	Level 3		
	Strategy Development	Level 4		
	Systems Thinking	Level 4		
	Technical Presentation	Level 4		
	WSH Performance Management	Level 2		

Market Development Manager

JOB ROLE DESCRIPTION

The Market Development Manager is responsible for building a customer base for the food products within his/her assigned market, which may be as large as an entire country, depending on the organisation's operations. He fulfils this role by working with business partners in the assigned market to promote the products, maintain distribution channels or even to set up overseas production plants.

He expands the customer base within the assigned market by conducting studies to identify potential growth areas and strategising new campaigns.

Strong technical product knowledge and cultural awareness of the customer demographic in his assigned market are critical to the Market Development Manager's ability to perform. He is creative, resourceful, and possesses good communication and negotiation skills.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Manage brand equity	<ul style="list-style-type: none"> • Define marketing performance measurements in alignment to marketing objectives and strategies • Develop strategies for domestic marketing campaigns, brand communication and communications materials • Develop social media and digital strategies to support sales and marketing • Develop and manage domestic sales and marketing operational plans • Assist in managing international sales and marketing operational plans
	Drive business-to-business marketing	<ul style="list-style-type: none"> • Negotiate with domestic partners on new and on-going business collaborations • Evaluate target markets' and client organisations' cultures, food regulations, traditions, and other situational factors that inhibit business dealings • Analyse market needs and opportunities to assess clients' interest level and needs • Manage service agreements with business partners
	Drive business-to-customer marketing	<ul style="list-style-type: none"> • Implement customer attraction and retention strategies to improve customer loyalty • Review marketing effectiveness measures to enhance programme strategies, product offerings and business competitiveness • Develop customer loyalty plans for target markets • Assess product utilisation and developments in target markets
	Develop new business channels	<ul style="list-style-type: none"> • Develop and manage market research plans • Analyse new market trends, business opportunities and market segments in local landscape • Develop vertical business plans to grow existing markets • Profile new target customers and market segments in domestic market • Generate business questions requiring data-mining and analyses • Analyse past performance of collections, categories and campaigns to improve marketing effectiveness and return-on-investment (ROI) • Generate ideas and strategies based upon data-driven insights and recommendations • Manage the application of data-driven insights to solve business problems

Market Development Manager

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Brand Portfolio Management	Level 3	Communication	Intermediate
	Budgeting	Level 3	Interpersonal Skills	Intermediate
	Business Environment Analysis	Level 3	Service Orientation	Intermediate
	Business Negotiation	Level 3	Decision Making	Intermediate
	Business Networking	Level 5	Creative Thinking	Intermediate
	Business Opportunities Development	Level 4		
	Business Performance Management	Level 4		
	Business Relationship Building	Level 4		
	Communications Channel Management	Level 3		
	Conflict Resolution	Level 4		
	Consumer Intelligence Analysis	Level 3		
	Customer Acquisition Management	Level 3		
	Customer Behaviour Analysis	Level 3		
	Customer Loyalty and Retention Strategy Formulation	Level 4		
	E-commerce Campaign Management	Level 3		
	Emergency Response Management	Level 2		
	Food Product Marketing	Level 3		
	International Marketing Programmes Management	Level 3		
	International Trade Legislation for Business	Level 3		
	Market Research	Level 3		
	Marketing Communications Plan Development	Level 3		
	New Export Market Entry Strategy Formulation	Level 4		
	Product Improvement	Level 2		
	Project Management	Level 4		
	Social Media Marketing	Level 3		
	Stakeholder Management	Level 3		
	Strategy Development	Level 4		
	Systems Thinking	Level 4		
	Technical Presentation	Level 4		
	WSH Performance Management	Level 3		

Regional Manager/Export Manager

JOB ROLE DESCRIPTION

The Regional Manager/Export Manager is responsible for managing the organisation's product sales within a geographical area, typically divided into multiple markets. He/She heads a team of subordinates, each managing an assigned market.

He conceives marketing and market development strategies for the team and facilitates their execution by negotiating long-term business partnership arrangements and arranging for relevant certifications, regulatory and other obligations required for product export.

International food regulations and trade-related knowledge is critical to his role. He has strong communication skills to lead a team to meet organisational objectives, and an analytical mind to ensure the effectiveness of business development and marketing efforts across the various markets under his charge.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Manage brand equity	<ul style="list-style-type: none"> • Establish brand equity performance goals and measurements to drive brand equity performance • Develop strategies for international marketing campaigns, brand communication and public relations • Develop brand communication strategies for various international markets • Develop and manage international sales and marketing operational plans and public relations strategies for different international markets
	Drive business-to-business marketing	<ul style="list-style-type: none"> • Negotiate with international partners on new and on-going business collaborations • Advise business partners on cost-efficient shipment alternatives, based on prevalent tariffs, insurance and quotas • Facilitate fulfilment of food-related certifications, regulatory and other requirements for product export
	Drive business-to-customer marketing	<ul style="list-style-type: none"> • Develop customer loyalty plans for international markets • Establish marketing objectives and strategies for customer acquisition and retention programmes • Evaluate effectiveness of customer acquisition and retention programmes in various international markets
	Develop new business channels	<ul style="list-style-type: none"> • Design market research constructs, parameters and procedures • Analyse global industry trends for potential new markets and business opportunities • Develop new market entry business strategies • Profile new target customers and market segments in international markets • Direct the formulation of business questions and development of models used for data-mining and analyses • Lead the formulation of data-driven insights and drive the practical application to the business • Evaluate effectiveness of customer acquisition and retention programmes in various international markets

Regional Manager/Export Manager

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Brand Portfolio Management	Level 4	Communication	Advanced
	Budgeting	Level 4	Decision Making	Intermediate
	Business Continuity Management	Level 4	Problem Solving	Intermediate
	Business Environment Analysis	Level 4	Leadership	Advanced
	Business Negotiation	Level 4	Global Mindset	Intermediate
	Business Networking	Level 5		
	Business Opportunities Development	Level 5		
	Business Performance Management	Level 5		
	Business Relationship Building	Level 5		
	Communications Channel Management	Level 4		
	Conflict Resolution	Level 4		
	Consumer Intelligence Analysis	Level 4		
	Customer Acquisition Management	Level 4		
	Customer Behaviour Analysis	Level 4		
	Customer Loyalty and Retention Strategy Formulation	Level 5		
	E-commerce Campaign Management	Level 4		
	Emergency Response Management	Level 2		
	Food Product Marketing	Level 4		
	International Marketing Programmes Management	Level 4		
	International Trade Legislation for Business	Level 4		
	Market Research	Level 4		
	Marketing Communications Plan Development	Level 4		
	New Export Market Entry Strategy Formulation	Level 5		
	Risk Management	Level 4		
	Product Improvement	Level 2		
	Project Management	Level 4		
	Social Media Marketing	Level 4		
	Stakeholder Management	Level 4		
	Strategy Development	Level 4		
	Systems Thinking	Level 4		
	Technical Presentation	Level 5		
	WSH Performance Management	Level 4		

General Manager

JOB ROLE DESCRIPTION

The General Manager sets the strategic direction and goals for the organisation's international business growth. He/She is responsible for business decisions, such as selecting viable strategies for new market entries, and facilitates these decisions by building a network of international business partners for the organisation.

International food regulations and trade-related knowledge is critical to his role, in addition to having strong technical product knowledge and cultural awareness of various markets and customer demographics.

As a team leader, he builds a high-performance team that works collaboratively, and has the ability to develop and execute functional strategies, as well as act as a change leader.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Build business networks	<ul style="list-style-type: none"> • Develop business and professional networks • Foster an atmosphere of inclusiveness with diverse external stakeholders and the global business community
	Develop new business opportunities	<ul style="list-style-type: none"> • Conduct situational analyses to assess the organisation's internal and external business environment and landscape • Incorporate research findings into business strategy development and planning • Evaluate costs of retaining and acquiring new target customers and market segments • Manage resources, logistics and manpower requirements for business plan implementation • Oversee development, evaluation and enhancement of predictive models for business planning and forecasting • Measure and evaluate business impacts from data analytics
	Drive business-to-business marketing	<ul style="list-style-type: none"> • Strategise organisational responses to market changes • Direct business negotiations with key customer accounts and strategic business dealings • Establish business networks and contacts for partnerships

General Manager

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Brand Portfolio Management	Level 5	Decision Making	Advanced
	Budgeting	Level 5	Global Mindset	Advanced
	Business Continuity Management	Level 5	Interpersonal Skills	Advanced
	Business Environment Analysis	Level 5	Leadership	Advanced
	Business Negotiation	Level 5	Communication	Advanced
	Business Networking	Level 6		
	Business Opportunities Development	Level 6		
	Business Performance Management	Level 6		
	Business Relationship Building	Level 6		
	Communications Channel Management	Level 5		
	Conflict Resolution	Level 5		
	Consumer Intelligence Analysis	Level 5		
	Customer Acquisition Management	Level 5		
	Customer Behaviour Analysis	Level 5		
	Customer Loyalty and Retention Strategy Formulation	Level 6		
	E-commerce Campaign Management	Level 5		
	Emergency Response Management	Level 2		
	Food Product Marketing	Level 5		
	International Marketing Programmes Management	Level 5		
	International Trade Legislation for Business	Level 5		
	Market Research	Level 5		
	Marketing Communications Plan Development	Level 5		
	New Export Market Entry Strategy Formulation	Level 6		
	Project Management	Level 5		
	Risk Management	Level 5		
	Social Media Marketing	Level 5		
	Stakeholder Management	Level 5		
	Strategy Development	Level 5		
	Systems Thinking	Level 4		
	Technical Presentation	Level 6		
	WSH Performance Management	Level 4		

Chief Executive/Managing Director

JOB ROLE DESCRIPTION

The Chief Executive/Managing Director has the responsibility to steer the organisation to achieve excellence and business sustainability in a globalised environment. He/She develops business and professional networks to foster an atmosphere of inclusiveness with diverse external stakeholders and the global business community.

In addition, he directs plant operations and provides leadership to departmental managers to ensure that the organisational objectives are accomplished in a timely and cost effective manner.

He further formulates and recommends ideas and directions to drive changes in an organisation while maintaining a culture of innovativeness. With a nurturing mind set, he also mentors and develops talent as future leaders.

CRITICAL WORK FUNCTIONS AND KEY TASKS	CRITICAL WORK FUNCTIONS	KEY TASKS
	Build business networks	<ul style="list-style-type: none">• Develop business and professional networks• Foster an atmosphere of inclusiveness with diverse external stakeholders and the global business community
	Drive organisational growth	<ul style="list-style-type: none">• Steer the organisation to achieve excellence in a globalised environment• Drive value-creation and meet the long-term objectives of the organisation• Formulate business ideas and directions to drive change in the organisation
	Contribute to continuous improvement	<ul style="list-style-type: none">• Challenge new ideas while actively balancing risks and opportunities• Innovate and create an environment that encourages innovation• Maintain a culture of innovative thinking and practices
	Influence organisational development	<ul style="list-style-type: none">• Lead organisational succession planning, capability development and employee engagement• Develop and strengthen relations with executive management• Act as a mentor to develop talent

Chief Executive/Managing Director

SKILLS AND COMPETENCIES	TECHNICAL SKILLS AND COMPETENCIES		GENERIC SKILLS AND COMPETENCIES (TOP 5)	
	Budgeting	Level 5	Decision Making	Advanced
	Business Continuity Management	Level 6	Global Mindset	Advanced
	Business Environment Analysis	Level 6	Leadership	Advanced
	Business Negotiation	Level 5	Interpersonal Skills	Advanced
	Business Networking	Level 6	Communication	Advanced
	Business Opportunities Development	Level 6		
	Business Performance Management	Level 6		
	Change Management	Level 6		
	Conflict Resolution	Level 6		
	Emergency Response Management	Level 2		
	Green Manufacturing Design and Implementation	Level 6		
	Innovation Management	Level 6		
	Project Management	Level 6		
	Risk Management	Level 6		
	Stakeholder Management	Level 5		
	Strategy Development	Level 6		
	Systems Thinking	Level 5		
	Technical Presentation	Level 6		
	WSH Performance Management	Level 2		

Notes

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Overview of Technical Skills and Competencies

Technical Skills and Competencies (TSCs)

TSC Category	TSC Title	TSC Description	Proficiency Levels					
			1	2	3	4	5	6
Automation Management	Automated Food Manufacturing System Maintenance	Maintain automation systems to meet operation requirements as well as propose strategies for improvement of automation systems' performance	●	●	●	●	●	
	Automated Operation Monitoring	Ensure smooth automation operations by maintaining and monitoring the automated systems and manufacturing process flows	●	●	●	●		
	Automated System Design	Design and commission automated systems as well as evaluate the system design specification against functional requirements				●	●	
	Automation Process Control	Apply automation process control to monitor performance metrics and quality of manufacturing outputs to determine the optimal settings as well as productivity improvement strategies			●	●	●	●
	Embedded System Integration	Implement control systems to perform pre-defined tasks and also real-time monitoring for the real world				●	●	
	Equipment Maintenance	Maintain tools and equipment to meet operation requirements as well as propose strategies for tools and equipment performance improvement		●	●	●	●	
	Internet of Things Management	Interrelate computing devices, equipment and machines' data in a networked environment to provide specific solutions		●	●	●	●	
Big Data	Data Analytics System Design	Integrate the use of data analytics in the production environment for the identification of bottlenecks and system improvements			●	●	●	
	Data Synthesis	Analyse factory automation and manufacturing data to monitor the manufacturing processes for operations and product or process flow optimisation			●	●	●	●
Business-to-Business Management	Business Negotiation	Manage end to end business negotiations, decide whether and how to engage as well as translate defining processes and procedures in order to support business requirements			●	●	●	
	Business Networking	Establish mutually beneficial relationships with other business stakeholders and potential clients and/or customers					●	●
	Business Relationship Building	Formulate business partnership strategies and establish relevant networks of strategic partners that provide value to the organisation			●	●	●	●

Overview of Technical Skills and Competencies

Technical Skills and Competencies (TSCs)

TSC Category	TSC Title	TSC Description	Proficiency Levels					
			1	2	3	4	5	6
Business-to-Consumer Management	Brand Portfolio Management	Formulate brand portfolio strategies, branding features and differentiators			●	●	●	
	Consumer Intelligence Analysis	Devise frameworks for consumer intelligence analysis to develop an understanding of customer knowledge from various customer touch points, for example, customer relationship management (CRM), point-of-sale (POS) and e-commerce systems		●	●	●	●	
	Customer Acquisition Management	Develop customer acquisition strategies as well as foster customer relationships to attract new customers		●	●	●	●	
	Customer Behaviour Analysis	Devise customer behaviour analysis tools and approaches and perform analysis on information pertaining to customer behaviours		●	●	●	●	
	Customer Loyalty and Retention Strategy Formulation	Formulate and implement customer loyalty and retention strategies based on data from customer relationship management				●	●	●
	Food Product Marketing	Develop strategies for marketing campaigns, including the conceptualising of product 'stories' to create emotional connections with the target audience		●	●	●	●	
	Market Research	Formulate market research frameworks, as well as develop market research study objectives, market research plans and methodologies to analyse market trends and developments to forecast emerging market needs		●	●	●	●	
	Marketing Communications Plan Development	Formulate, develop and implement marketing communications plans and evaluate tools and vehicles appropriate to reflect effective execution of communication strategies		●	●	●	●	
E-commerce Management	E-Commerce Campaign Management	Develop, manage and execute e-commerce strategies and campaigns according to agreed timelines and budgetary requirements		●	●	●	●	
	Social Media Marketing	Formulate, execute and evaluate social media strategic plans to establish positive relationships with industry and social media colleagues and proactively seek and evaluate innovative marketing opportunities		●	●	●	●	

Overview of Technical Skills and Competencies

Technical Skills and Competencies (TSCs)

TSC Category	TSC Title	TSC Description	Proficiency Levels					
			1	2	3	4	5	6
Export Market Development	Business Environment Analysis	Analyse data pertaining to the business landscape and environment, including competitor-analysis		●	●	●	●	●
	Business Opportunities Development	Capitalise on local and international business opportunities to identify and evaluate commercially viable opportunities to continuously create value for customers			●	●	●	●
	Communications Channel Management	Devise frameworks for selection and evaluation of the effectiveness of distribution channels		●	●	●	●	
	International Marketing Programmes Management	Research, implement international marketing programmes and formulate international marketing objectives to determine key performance indicators to meet organisational requirements			●	●	●	
	International Trade Legislation for Business	Identify all aspects of international trade processes and foreign and multilateral trade laws for food product export business		●	●	●	●	
	New Export Market Entry Strategy Formulation	Develop strategic plans to enter new export markets in foreign countries, based on assessed costs, benefits and risks involved				●	●	●
Food Regulatory Compliance	Food Safety Analysis	Apply methods to analyse ingredients and manufactured products for safety and quality management		●	●	●	●	
	Food Safety Management	Implement hygiene and food safety practices in food manufacturing	●	●	●	●		
	Good Manufacturing Practices Implementation	Implement good manufacturing practices in the design, monitoring, and control of food manufacturing processes and facilities to ensure that works are carried out based on industry practices and protocols		●	●	●	●	
General Management	Budgeting	Prepare organisational budgets to support short- and long-term business plans through forecasting, allocation and financial policy setting			●	●	●	
	Business Continuity Management	Execute business impact analysis, risk analysis, testing and exercising to ensure the currency of the organisation's business continuity plans				●	●	●
	Business Performance Management	Implement the organisation's performance systems to meet business plans and objectives by establishing performance indicators, tracking progress and addressing gaps				●	●	●
	Change Management	Implement organisational change smoothly as well as manage reactions to ensure seamless transition during change			●	●	●	●
	Conflict Resolution	Resolve conflicts by evaluating and implementing resolution approaches, analysing mediation outcomes and finding solutions				●	●	●
	Continuous Process Improvement	Apply continuous improvement processes to improve products, services or processes seeking incremental improvement over time or breakthrough improvement all at once	●	●	●	●	●	

Overview of Technical Skills and Competencies

Technical Skills and Competencies (TSCs)

TSC Category	TSC Title	TSC Description	Proficiency Levels					
			1	2	3	4	5	6
General Management	Innovation Management	Respond to external or internal opportunities and apply creativity to introduce new ideas, processes or products			●	●	●	●
	Project Management	Execute projects by managing stakeholder engagement, resources, budgets and resolving problems			●	●	●	●
	Risk Management	Implement risk management strategies to support business operations				●	●	●
	Stakeholder Management	Build and maintain constructive relationships with stakeholders to move the organisation toward its business goals			●	●	●	
	Strategy Development	Develop organisational strategies and policies by analysing the impact of internal and external influencing factors				●	●	●
	Systems Thinking	Integrate understanding of food manufacturing with interactions between components when developing manufacturing processes or overseeing manufacturing activities		●	●	●	●	
	Technical Presentation	Deliver effective and engaging presentations for a variety of audiences				●	●	●
	Technical Report Writing	Produce reports with specific information and evidence presented in a clear and structured format		●	●	●		
Manufacturing and Operations	Food Manufacturing Facility Maintenance	Manage and enhance facility systems to support product manufacturing and business operations		●	●	●	●	
	Food Manufacturing Process Design	Analyse food product designs to establish manufacturing process workflows and identify potential risks and problems to reduce manufacturing costs				●	●	●
	Food Production Management	Manage operations and production levels in food manufacturing	●	●	●	●	●	
	Green Manufacturing Design and Implementation	Design and implement manufacturing processes that reduce waste, conserve energy, and use replacements for hazardous substances			●	●	●	●
	Manufacturing Process Management	Perform process engineering and ensure the stability of the manufacturing process as well as troubleshoot process deviations and propose strategies for process performance improvement		●	●	●	●	
	Production Performance Management	Plan and manage resources to optimise production performance as well as manage production constraint and improve manufacturing efficiency			●	●	●	
	Utilities Management	Develop plans to meet manufacturing utility and energy requirements while conserving and managing the use of energy and utilities by the plant			●	●	●	

Overview of Technical Skills and Competencies

Technical Skills and Competencies (TSCs)

TSC Category	TSC Title	TSC Description	Proficiency Levels					
			1	2	3	4	5	6
Quality Management	Chemical Risk Management	Implement chemical safety and security practices to ensure a safe work environment		●	●	●	●	
	Cleanliness Testing	Perform tests to verify that residue and contaminant levels are at risk-free levels on manufacturing equipment and surfaces			●	●	●	
	Document Control	Implement documentation policies to facilitate referencing of process, systems and equipment information to comply with regulatory requirements		●	●	●		
	Laboratory Data Analysis	Analyse laboratory data		●	●	●		
	Laboratory Management	Implement good laboratory practice (GLP) procedures to ensure that performance, quality and health and safety standards are met		●	●	●	●	
	Packaging Testing	Verify that packaging materials maintain the desired level of compliance			●	●	●	
	Process Validation	Verify that a process is reproducible and consistent in delivering quality products according to specifications and standards		●	●	●	●	
	Product Testing	Test manufactured food products for verification of meeting required quality and regulatory standards		●	●	●	●	
	Quality Assurance Management	Establish and implement quality assurance procedures and conduct audits to ensure compliance with food safety and legislative requirements			●	●	●	
	Quality Control Management	Establish quality control procedures to ensure the desired level of compliance at all stages			●	●	●	
	Quality Systems Management	Coordinate and direct the organisation's activities to meet customer and regulatory requirements as well as identify opportunities for improvement		●	●	●	●	●
Research and Development	Active and Smart Packaging	Application of active/smart packaging methodology and processes to improve shelf-life, quality and safety of food product		●	●	●	●	●
	Advanced Processing Technology	Design and apply advanced processing technology to manufacture food products that are appealing, tasty, nutritious and have a long shelf life		●	●	●	●	●
	New Product Introduction for Food	Develop manufacturing plans and processes for new food products to achieve cost-effective production and meet research and development specifications			●	●	●	
	Product Improvement	Analyse the technical specifications of manufactured food products and identify ways to make improvements		●	●	●	●	
	Recipe Formulation	Innovate new food products through the creation and refinement of new recipes				●	●	
Workplace Safety and Health	Emergency Response Management	Respond to emergencies by executing emergency response plans and procedures to mitigate impact of emergency incidents		●	●	●	●	
	Hazards and Risk Control, and Policy Management	Ensure a systematic and objective approach for hazards identification and risk assessment to effectively manage the hazards that may occur within the workplace		●	●	●		
	WSH Performance Management	Implement workplace safety and health (WSH) practices in accordance with legislative requirements		●	●	●	●	

Overview of Technical Skills and Competencies

General Descriptors for Technical Skills and Competencies (TSCs)

Level	Responsibility (Degree of supervision and accountability)	Autonomy (Degree of decision-making)	Complexity (Degree of difficulty of situations and tasks)	Knowledge and Abilities (Required to support work as described under Responsibility, Autonomy and Complexity)
6	Accountable for significant area of work, strategy or overall direction	Empower to chart direction and practices within and outside of work (including professional field/ community), to achieve/ exceed work results	Complex	<ul style="list-style-type: none"> • Synthesise knowledge issues in a field of work and the interface between different fields, and create new forms of knowledge • Employ advanced skills, to solve critical problems and formulate new structures, and/or to redefine existing knowledge or professional practice • Demonstrate exemplary ability to innovate, and formulate ideas and structures
5	Accountable for achieving assigned objectives, decisions made by self and others	Provide leadership to achieve desired work results; Manage resources, set milestones and drive work	Complex	<ul style="list-style-type: none"> • Evaluate factual and advanced conceptual knowledge within a field of work, involving critical understanding of theories and principles • Select and apply an advanced range of cognitive and technical skills, demonstrating mastery and innovation, to devise solutions to solve complex and unpredictable problems in a specialised field of work • Manage and drive complex work activities
4	Work under broad direction Hold accountability for performance of self and others	Exercise judgment; Adapt and influence to achieve work performance	Less routine	<ul style="list-style-type: none"> • Evaluate and develop factual and conceptual knowledge within a field of work • Select and apply a range of cognitive and technical skills to solve non-routine/ abstract problems • Manage work activities which may be unpredictable • Facilitate the implementation of innovation
3	Work under broad direction May hold some accountability for performance of others, in addition to self	Use discretion in identifying and responding to issues, work with others and contribute to work performance	Less routine	<ul style="list-style-type: none"> • Apply relevant procedural and conceptual knowledge, and skills to perform differentiated work activities and manage changes • Able to collaborate with others to identify value-adding opportunities
2	Work with some supervision Accountable for a broader set of tasks assigned	Use limited discretion in resolving issues or enquiries. Work without frequently looking to others for guidance	Routine	<ul style="list-style-type: none"> • Understand and apply factual and procedural knowledge in a field of work • Apply basic cognitive and technical skills to carry out defined tasks and to solve routine problems using simple procedures and tools • Present ideas and improve work
1	Work under direct supervision Accountable for tasks assigned	Minimal discretion required. Expected to seek guidance	Routine	<ul style="list-style-type: none"> • Recall factual and procedural knowledge • Apply basic skills to carry out defined tasks • Identify opportunities for minor adjustments to work tasks

Overview of Generic Skills and Competencies

Generic Skills and Competencies (GSCs)

GSC	GSC Description	Proficiency Levels		
		Basic	Intermediate	Advanced
Communication	Convey and exchange thoughts, ideas and information effectively through various mediums and approaches.	Communicate information with others to respond to general inquiries and to obtain specific information.	Articulate and discuss ideas and persuade others to achieve common outcomes.	Negotiate with others to address issues and achieve mutual consensus.
Computational Thinking	Develop and use computational models, tools and techniques to interpret and understand data, solve problems and guide decision-making.	Use computational models, tools and techniques to identify patterns in a problem and develop a solution.	Modify existing computational models, tools and techniques to develop different solutions.	Develop and create computational models, tools and techniques to implement new solutions and apply to other problems.
Creative Thinking	Adopt a fresh perspective to combine ideas or information in new ways and make connections between seemingly unrelated fields to create new ideas and applications.	Connect ideas or information from related fields or applications to address an immediate issue.	Connect or combine ideas or information from unrelated fields or applications to generate multiple ideas to bring about a specific outcome.	Create original applications or ideas to reveal new possibilities and reshape goals through high level of innovativeness.
Decision Making	Choose a course of action from various alternatives using a reasoned process to achieve intended goals.	Make decisions of simple or routine nature to achieve intended goals using given information and guidelines.	Make decisions in a complex setting to achieve intended goals using a structured process and multiple sources of available information.	Make decisions in a volatile and ambiguous setting using a structured process and limited sources of available information to achieve intended goals.
Developing People	Help others to learn and develop their capabilities to enhance their performance and achieve personal or professional goals.	Use demonstration and explanation to teach a familiar task to inexperienced co-workers.	Provide coaching to others to develop their skills and knowledge on their jobs to enhance performance.	Provide mentorship to help others in their professional and personal development to improve performance and further their careers.
Digital Literacy	Use ICT tools, equipment and software to create, evaluate and share information digitally with others.	Perform basic functions using software programmes pertaining to computer operating systems and file management, and search online information.	Use available software features to create and edit documents, customise templates and reports and evaluate online information.	Use available software features to enhance documents, analyse and manipulate data, and use ICT to organise, share and communicate information clearly and coherently.
Global Mindset	Awareness of diversity across global cultures and markets. Seek opportunities to adopt successful practices and ideas.	Demonstrate understanding of global challenges and opportunities and how to transfer best practices across cultures. Respect cultural differences and needs of a diverse workforce.	Develop global networks and manage virtual relationships while balancing both local and global perspectives. Adopt a local and global perspective when making decisions.	Build the organisation's capabilities to compete in a global environment. Manage tension between corporate requirements, global and cultural differences.

Overview of Generic Skills and Competencies

Generic Skills and Competencies (GSCs)

GSC	GSC Description	Proficiency Levels		
		Basic	Intermediate	Advanced
Interpersonal Skills	Manage relationships efficiently and communicate with others effectively to achieve mutual consensus and outcomes.	Recognise own internal feelings and emotional states to manage interpersonal relationships in social situations.	Detect and decipher emotions of others to manage interpersonal relationships in social situations.	Influence, guide and handle others' emotions to build instrumental relationships and manage conflicts and disagreements.
Leadership	Lead others to achieve objectives in the most effective way. Provide an inclusive workplace that cultivates workplace relationships and teamwork, and foster the development of others.	Demonstrate professionalism to set a good example at peer level. Support others through own initiative and enthuse others through own positive and energetic approach.	Lead by example at team level. Encourage and guide others to adopt a point of view, make changes or take action. Provide a team environment that facilitates relationships building, teamwork and the development of others.	Lead by example at organisational level. Inspire, motivate and guide others to adopt a point of view, make changes or take action. Cultivate an open, cooperative and collaborative learning culture for the organisation.
Lifelong Learning	Seek out opportunities to enhance one's knowledge and skills. Access and acquire new knowledge and skills actively for continual learning.	Organise and manage own learning by setting learning targets. Identify learning approaches to achieve work or career goals.	Engage in collaborative learning by discussing one's learning with others and soliciting feedback to continually improve oneself.	Conduct self-reflective practices to review one's learning to facilitate continual growth in one's career or profession.
Managing Diversity	Work well with people from different ethnic, social, cultural and educational backgrounds and understand the concerns and interests of diverse work groups.	Demonstrate sensitivity to the cultural characteristics, values, beliefs, and behaviors of another ethnic or cultural group.	Build relationships with different ethnic or cultural groups by engaging in cross-cultural cooperative projects.	Manage conflicts arising from different ethnic or cultural groups and work effectively in cross-cultural settings.
Problem Solving	Generate feasible and efficient solutions to solve problems and capitalise on new opportunities.	Identify easily perceivable problems and follow given guidelines and procedures to solve the problems.	Identify less perceivable problems and use problem solving tools and techniques to solve the problems.	Anticipate potential problems beyond the current scope and apply higher order problem solving tools and techniques to turn problems into opportunities.
Resource Management	Efficient and effective deployment and allocation of resources when and where they are needed. Include planning, allocating and scheduling of resources to tasks, which typically include manpower, machines, money and materials.	Use resources to ensure optimum and efficient use of resources.	Deepen insights into the planning, allocation and deployment of resources to anticipate needs. Plan the allocation and deployment of resources efficiently and effectively.	Establish strategies for the allocation and deployment of resources efficiently and effectively.

Overview of Generic Skills and Competencies

Generic Skills and Competencies (GSCs)

GSC	GSC Description	Proficiency Levels		
		Basic	Intermediate	Advanced
Sense Making	Organise and analyse data and information accurately to identify relationships and detect patterns and trends to gain insights for decision-making.	Identify relationships and linkages within different components of data.	Interpret data to uncover patterns and trends between various sources of data.	Analyse data relationships, patterns and trends to gain important insights and make informed decisions.
Service Orientation	Commit to exceeding both internal and external customers' needs. Proactively identify customer needs and sustain a culture of service excellence within the organisation.	Exceed customer needs and expectations and handle service challenges with a positive mindset. Demonstrate an understanding of the organisation's service vision, mission and values.	Anticipate customer needs and expectations and elicit feedback from customers to improve service. Build relationships with customers to create and sustain customer loyalty.	Model, lead, train and motivate staff with a focus on sustaining a culture that encourages commitment to service excellence and high performance.
Teamwork	Work collaboratively and effectively with others to contribute to group efforts to achieve identified objectives.	Contribute to a positive and cooperative working environment by fulfilling own responsibilities and providing support to co-workers to achieve team goals.	Facilitate work team activities, provide assistance and support needed by team members and promote ownership and commitment among team members to work goals to improve team performance.	Establish teams, design and assess tasks to continually improve team effectiveness and cultivate a sense of organisational ownership and a cooperative working environment.
Transdisciplinary Thinking	Understanding of concepts across multiple disciplines, with the capacity to synthesise the knowledge and insights to guide decisions and foster cooperation.	Research and adapt concepts from outside one's field of expertise to supplement one's core knowledge and proficiency.	Co-relate material from diverse knowledge bases to guide decisions and policy making. Participate in reflective and trans-disciplinary communities within and outside the organisation.	Synthesise knowledge and insights across disciplinary boundaries to aid strategic decisions and foster cooperation within and outside of the organisation.
Virtual Collaboration	Use online collaborative communication tools to work as teams to accomplish tasks or projects.	Participate and contribute in a virtual team. Set up appropriate online collaborative tools and supporting equipment.	Use interactive collaborative tools to foster cohesion and commitment among virtual team members to achieve goals. Keep up-to-date with innovative online collaborative tools and applications to enhance one's proficiency in engaging in virtual collaboration.	Leverage on diverse team talent, latest online collaborative technologies and virtual platforms to produce collaborative behaviour and achieve technological savviness in virtual collaboration.

Supporting Organisations and Acknowledgements

We would like to thank the following organisations and partners for their support and contributions in the development and validation of the Skills Framework for Food Manufacturing:

Aalst Chocolate Pte Ltd

Asia Pacific Breweries Singapore Pte Ltd

Auric Pacific Group Pte Ltd

BreadTalk Group Ltd

CerealTech Pte Ltd

Chop Hup Chong Food Industries Pte Ltd

Chee Seng Oil Factory Pte Ltd

Containers Printers Pte Ltd

Culina Pte Ltd

Fraser & Neave Ltd

Faesol Pte Ltd

Fragrance Foodstuff Pte Ltd

Gan Hup Lee (1999) Pte Ltd

Givaudan Singapore Pte Ltd

Ha Li Fa Pte Ltd

Indoguna Singapore Pte Ltd

Lam Soon Singapore Pte Ltd

Kee Song Food Corporation (S) Pte Ltd

KH Roberts Pte Ltd

NamZ Pte Ltd

Nestlé Singapore Pte Ltd

OJJ Foods Pte Ltd

Phoon Huat Pte Ltd

SATS Ltd

SATS BRF Food Pte Ltd

Theseafoodcompany Pte Ltd

Seo Eng Joo Frozen Food Pte Ltd

Seng Hua Hng Foodstuff Pte Ltd

Shimadzu (Asia Pacific) Pte Ltd

Sin Hwa Dee Foodstuff Industries Pte Ltd

Symrise Asia Pacific Pte Ltd

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Tat Hui Foods Pte Ltd

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Thong Siek Food Industry Pte Ltd

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In addition, we would like to express our gratitude to the following stakeholders and partners for their contribution to the development of the Skills Framework for Food Manufacturing:

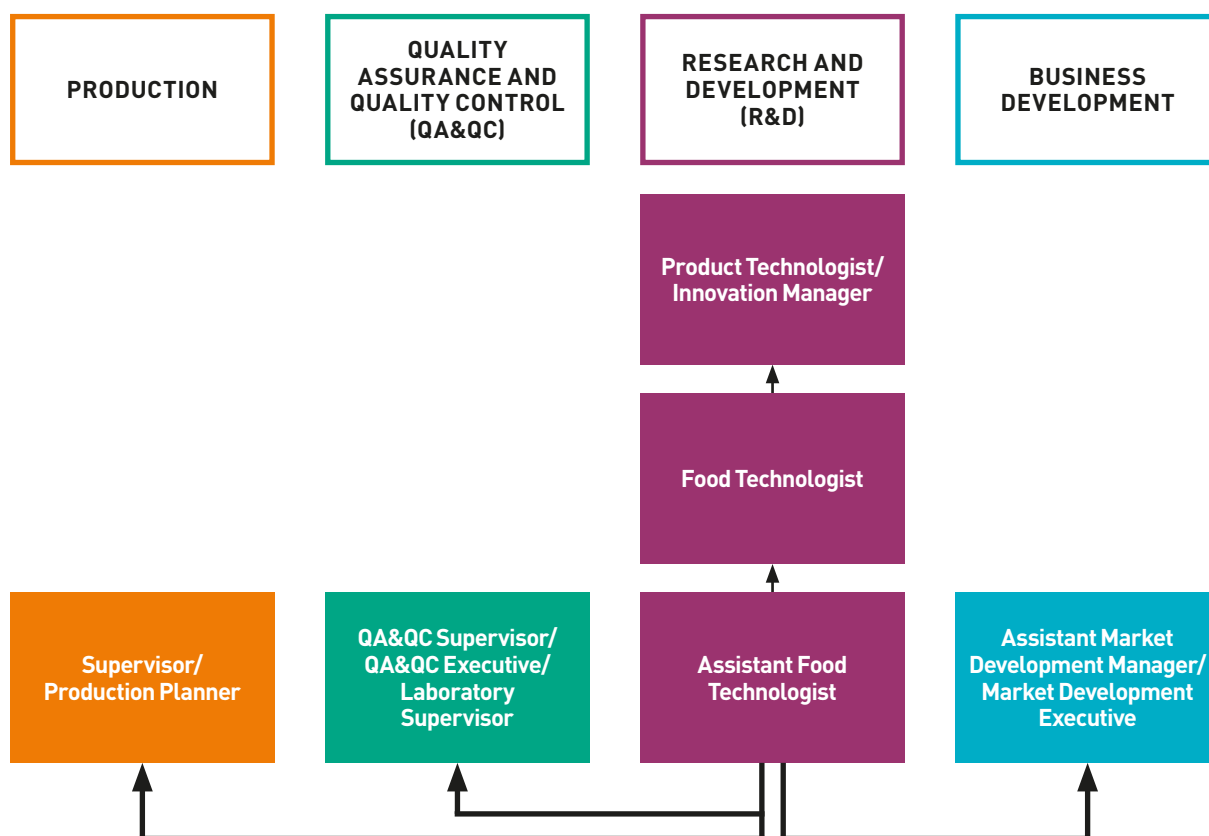
- Individuals who have agreed to share their personal career stories
- The Unions who have provided their views and support on behalf of their members
- The Industry Association and Professional Bodies for sharing their business and members' perspectives
- Various Government and Government-Linked Agencies for their assistance
- Education and Training Providers for the inputs on skills and competencies development
- Organisations for their contributions in the development and validation of the Skills Framework for Food Manufacturing

Notes

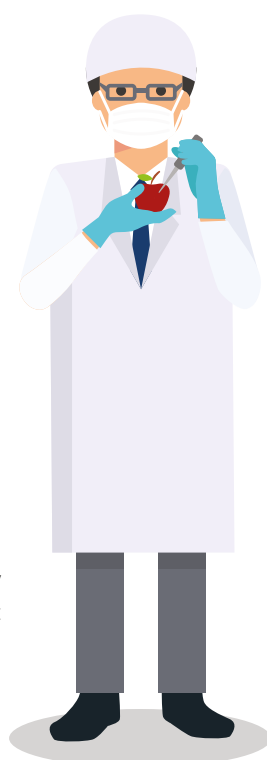
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Illustration of Vertical and Lateral Progression of an Assistant Food Technologist

This illustration depicts the ability of the Assistant Food Technologist to move into any of the roles indicated. Progression in the food manufacturing sector does not only occur vertically, it can occur laterally as well. This opens up a wide range of opportunities for those pursuing a fruitful career in food manufacturing.



Jeremy
Assistant Food Technologist



Note: The career pathway would depend on individual performance, capability (skills and competencies), experience, aspirations and company needs.

Wage Information

MONTHLY GROSS WAGES OF SELECTED OCCUPATIONS IN MANUFACTURING, JUNE 2016

Occupations	Gross Wage	
	25th Percentile (\$)	75th Percentile (\$)
Manufacturing labourer and related worker	1,112	1,808
Supervisor/General foreman (food processing, woodworking, garment, leather and related trades)	2,563	3,652
Stationary plant and machine supervisor/General foreman	2,900	4,265
Manufacturing plant/Production manager	5,477	10,100
Manufacturing engineering technician	2,859	4,320
Assistant manufacturing engineer	3,306	5,351
Industrial and production engineer	4,200	6,350
Quality checker and tester	1,452	2,283
Quality assurance manager	5,850	10,900
Food science technician	2,308	3,778
Food and drink technologist	3,700	8,128
Research and development manager	6,915	11,815
Business development executive	2,990	4,950
Business development manager	5,900	12,106
Technical sales professional	3,500	5,270
Chief operating officer/General manager	8,357	18,810
Managing director/Chief executive officer	5,000	15,000

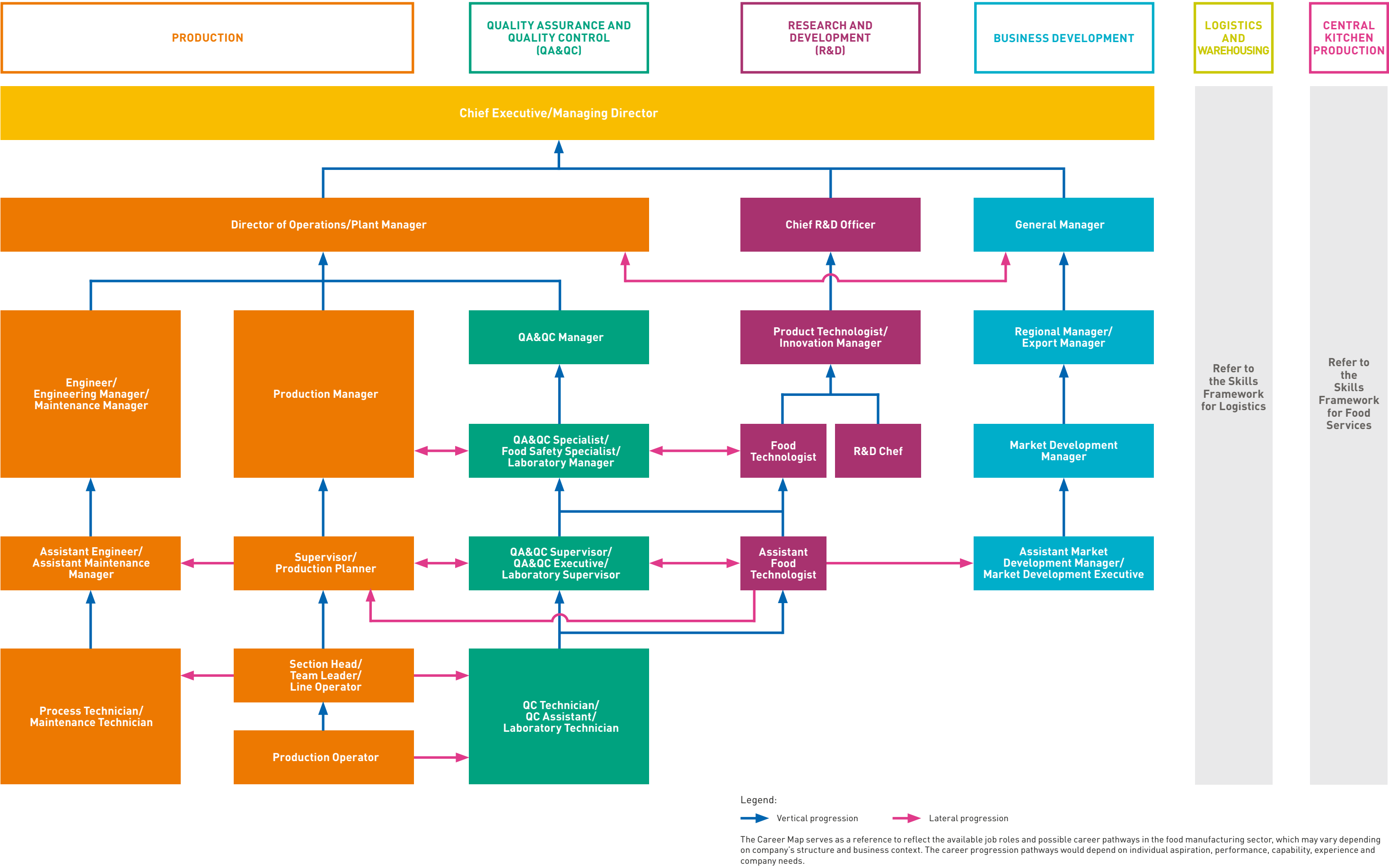
Source: Occupational Wage Survey, Manpower Research & Statistics Department, Ministry of Manpower

Notes:

- 1) Data pertain to full-time resident employees in the private sector establishments each with at least 25 employees.
- 2) Monthly Gross Wage refers to the sum of the basic wage, overtime payments, commissions, allowances, and other regular cash payments. It is before deduction of employee CPF contributions and personal income tax and excludes employer CPF contributions, bonuses, stock options, other lump sum payments and payments-in-kind.
- 3) 25th Percentile Wage refers to the wage level which divides the bottom 25% of wage earners from the rest.
- 4) 75th Percentile Wage refers to the wage level which divides the top 25% of wage earners from the rest.

SKILLS FRAMEWORK FOR FOOD MANUFACTURING

Career Pathways



SKILLS FRAMEWORK FOR FOOD MANUFACTURING Career Pathways



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