

SAAC Singapore
Accountancy And Audit
Convention Series

PAIR Conference 2020

GEARING UP TO REBOOT IN A NEW WORLD

Redefining the Finance Function with Job Redesign

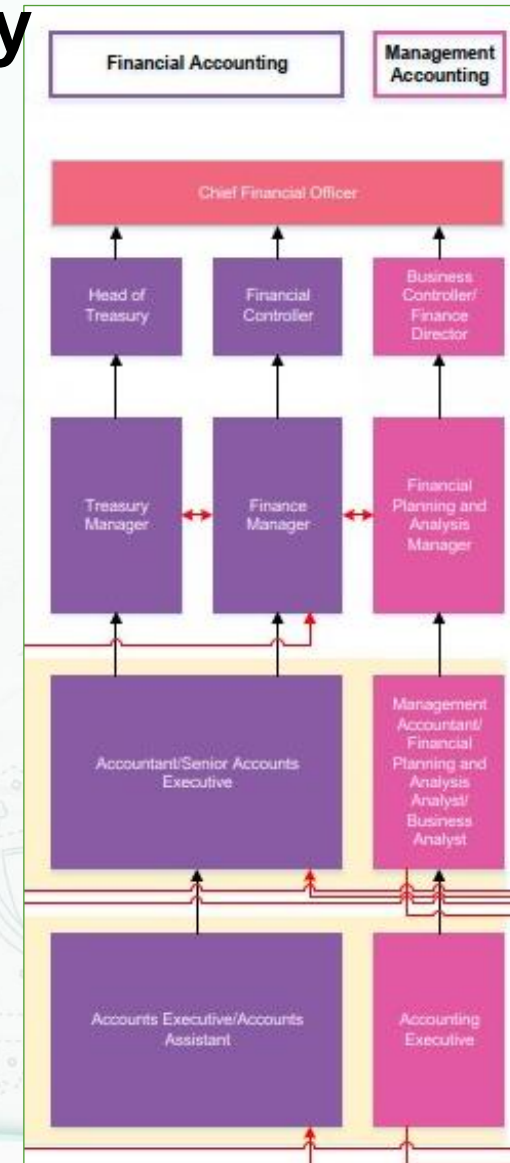
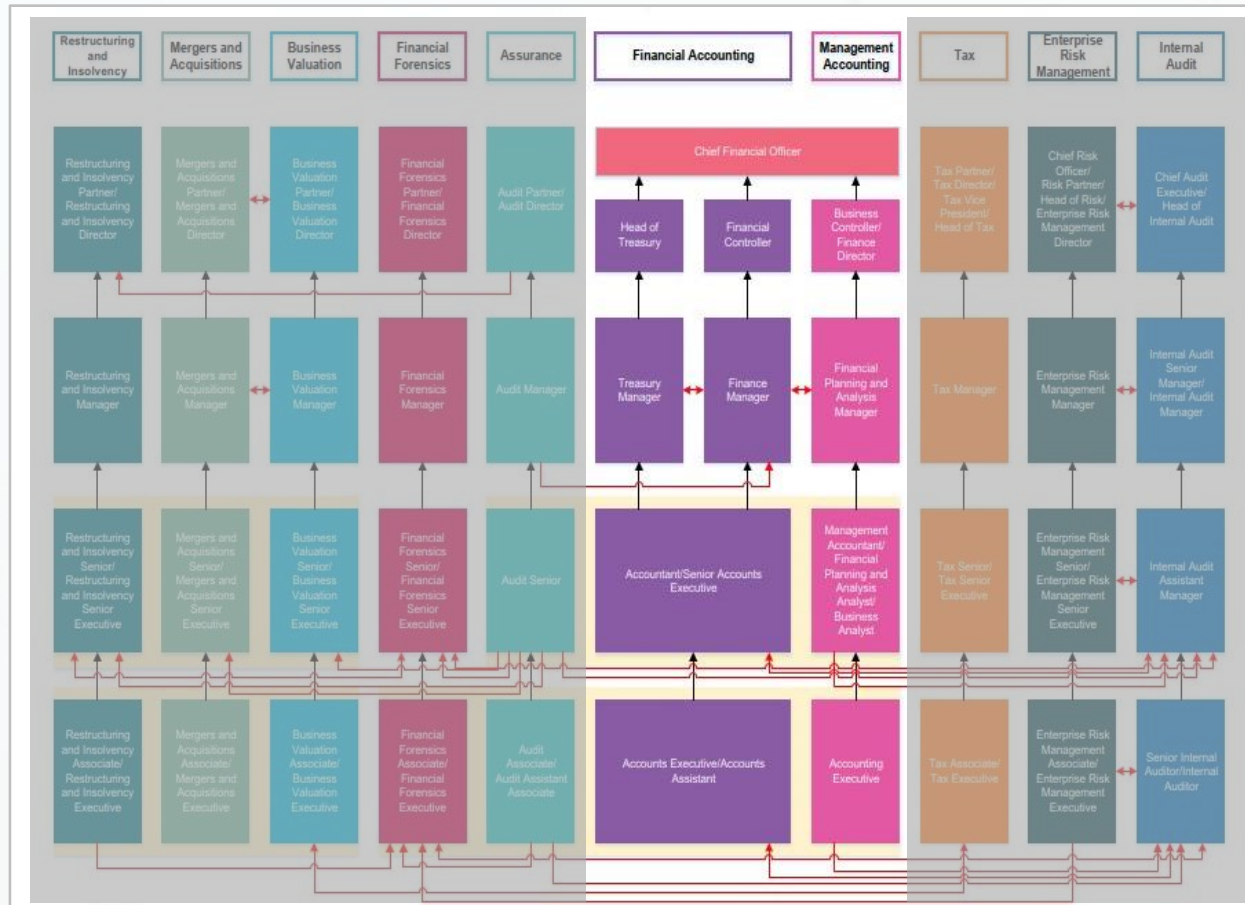
Co-Presenters:

1. *Mr Samir Bedi, Partner, Ernst & Young Advisory, EY ASEAN Workforce Advisory Leader Singapore*
2. *Mr Poon King Wang, Director, Lee Kuan Yew Centre for Innovative Cities at the Singapore University of Technology and Design*

Background and Objectives

- The potential of technology to transform work processes is immense. With the COVID-19 crisis, this has forced many businesses to accelerate the adoption of technology to digitalise work processes and enhance operations.
- The technological impact to accountancy and finance professionals in finance function will come faster.
- This project identifies **how job roles can be redesigned due to technology**, potential **job mobility**, as well as the **skills gap to be bridged** and **emerging skills** which accountancy and finance professionals need to be equipped with to meet the changing job requirements.

Focus on Financial Accounting (FA) and Management Accounting (MA) from SFw for Accountancy



Our Methodology

1

Data Collection

- Collected ~100 JDs for FA & MA roles
 - Across 5 top sectors contributing to Singapore's 2019 GDP (Manufacturing, retail and wholesale, real estate, finance and insurance, transportation & storage)
 - Across large companies and SMEs
- Condensed to 11 JDs
- Align to tasks laid out in SFw for Accountancy

2

Data Validation

- Identified tasks for automation /augmentation
- Conducted 2 Focus Groups with Head of Finance equivalent/ CFOs to validate findings
- Generated transition pathways utilising further data processing/ algorithm

3

Analysis & Report

- Validated analyses and findings with real life cases
- Report launch at PAIB Conference

Definition Of Digital Enablers, Impact And Expected Job Role Outcomes

DIGITAL ENABLERS OVERVIEW

Robotic Process Automation (RPA)

Usage of software robots that mimic routine tasks. Standardise and automate high volume of tasks to build agility and quality

Blockchain

Decentralised, distributed ledger that allows for a more secure and transparent database

Advanced Analytics/ Big Data

Process and extract forward-looking insights from large amounts of data, track and apply new data

Artificial Intelligence (AI)

Simulate human intelligence and enable to perform tasks in line with human intelligence

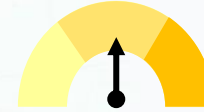
DEGREE OF CHANGE IN JOB TASKS...

HIGH



A **SIGNIFICANT** exposure to **automation**, jobs are at risk of convergence or displacement by automation.

MEDIUM



A **MODERATE** exposure to **data analytics and automation**. It substitutes a small proportion of job tasks, and at the same time amplify human performance.

LOW



The **job tasks will change INCREMENTALLY** to use more technology to increase efficiency of work and supplement the performance of humans

EXPECTED JOB ROLE OUTCOMES

THE JOB ROLE WILL UNDERGO DISPLACEMENT

Job role will **converge** with another job role and/or **be replaced** by new job roles. As such, there will be need to reskill job holders with **new skills** to maintain their employability.

THE JOB ROLE WILL REQUIRE REDESIGN

Job role will **transform to take on additional duties** over and beyond what is traditionally expected. This will require job holders to **upgrade existing skills** and/or acquire new skills to remain competitive.

THE JOB ROLE WILL CHANGE INCREMENTALLY

Job role will continue to deliver traditional outcomes with **increased efficiency** owing to technology. Current skills or **modest upskilling** will be sufficient for the job holders to remain up-to-date contributors.

Overview of Job Roles and Level of Impact

THE JOB ROLE WILL UNDERGO DISPLACEMENT

HIGH





A **SIGNIFICANT** exposure to **automation**, jobs are at risk of convergence or displacement by automation.

Accounts Executive/
Accounts Assistant

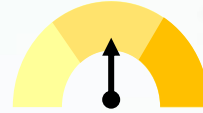
Accounting Executive

Legend:

-  Financial Accounting
-  Management Accounting

THE JOB ROLE WILL REQUIRE REDESIGN

MEDIUM



A **MODERATE** exposure to **data analytics and automation**. It substitutes a small proportion of job tasks, and at the same time amplify human performance.

Treasury Manager

Finance Manager

Accountant/
Senior Accounts Executive

Financial Planning
and Analysis Manager

Management Accountant/
Financial Planning and
Analysis Analyst/
Business Analyst

THE JOB ROLE WILL CHANGE INCREMENTALLY

LOW



The **job tasks will change INCREMENTALLY** to use more technology to increase efficiency of work and supplement the performance of humans

Chief Financial Officer

Head of Treasury

Financial Controller

Business Controller/
Finance Director

Accounts Executive/ Accounts Assistant

Technology solutions impacting this job...

- 1) Advanced Analytics/ Big Data Analytics
- 2) Blockchain
- 3) Robotic Process Automation (RPA)

Impact assessment...



A **SIGNIFICANT** exposure to automation, jobs are at risk of convergence or displacement by automation.

Within **3 to 5 years**, the role will potentially...

UNDERGO DISPLACEMENT

Key Work Functions/ Tasks

Impact at task-level / Future view of job tasks

Perform financial accounting and corporate reporting activities

H

- RPA - manage accounts and **perform transactional accounting operations**, almost **instantaneous reporting** and analysis.
- Blockchain - single source of truth for ledger information **eliminating the need for manual checks**.
- Focus shift to handling more **data and complex exception cases**.

Process business transactions and reports using information technology tools

H

- RPA – **automate data entry** and APIs to automatically pull relevant information into systems. **Less manual data entry and fewer data input errors**.
- Data and analytics - **identify anomalies**.
- **Focus on generating insights** and communicating them to relevant stakeholders.

In the next **3 – 5** years...

Additional new tasks such as analysing complex exception cases, providing insights and recommendations to relevant stakeholders as well as upskilling to acquire new skills related to technology and making sense of available data.

Emerging skills

- Business Innovation and Improvement
- Data Analytics
- Digital Technology Adoption and Innovation
- Digital Technology Environment Scanning

Skills to be enhanced

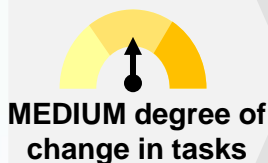
- Communication
- Lifelong Learning
- Problem Solving
- Sense Making

Accountant/ Senior Accounts Executive

Technology solutions impacting this job...

- 1) Advanced Analytics/ Big Data Analytics
- 2) Artificial Intelligence (AI)
- 3) Robotic Process Automation (RPA)

Impact assessment...



A **MODERATE** exposure to data analytics. It substitutes a small proportion of job tasks, and at the same time amplify human performance.

Within **3 to 5 years**, the role will potentially...

REQUIRE REDESIGN

Key Work Functions/ Tasks

Impact at task-level / Future view of job tasks

Supervise financial accounting and corporate	H	<ul style="list-style-type: none"> • RPA – automate capturing and compiling accurate journal entries and account information. • Advanced Analytics/ Big Data – comprehensive information to generate innovative insights. • Role shift to reviewing the outputs of RPA processes and handling exception cases requiring additional technical and domain specific knowledge.
Support strategic planning initiatives	H	<ul style="list-style-type: none"> • AI – identify patterns which will facilitate forecasting for budgeting and planning • Shift to understand data sets and how they are incorporated into AI tools and standardise data for a more organised data environment.
Support working capital management	M	<ul style="list-style-type: none"> • RPA - reduce the manual effort for basic processes. • Role shift towards strategic and collaborative task such as providing insights on working capital needs and funding strategies.
Support internal and external audit activities	M	<ul style="list-style-type: none"> • AI - automatically screen for anomalies and propose corrective actions. • Focus on more complex issues and advising on policies and procedures that can help to proactively minimise risks.

In the next **3 – 5** years...

Utilise the outputs of RPA and AI systems to focus on generating insights, and play a more strategic role in the organisation. They will also shift to focus on proactively identifying opportunities to reduce risks and providing advise to relevant stakeholders

Emerging skills

- Business Innovation and Improvement
- Data Analytics
- Digital Technology Adoption and Innovation
- Digital Technology Environment Scanning
- Finance Business Partnering
- Stakeholder Management

Skills to be enhanced

- Communication
- Problem Solving
- Sense Making

Accounting Executive

Technology enablers impacting this job...

- 1) Advanced Analytics/ Big Data Analytics
- 2) Blockchain
- 3) Artificial Intelligence (AI)
- 4) Robotic Process Automation (RPA)

Impact assessment...



A **SIGNIFICANT** exposure to automation, jobs are at risk of convergence or displacement by automation.

Within **3 to 5 years**, the role will potentially...

UNDERGO DISPLACEMENT

Key Work Functions/ Tasks

Impact at task-level / Future view of job tasks

Assist in analysis of profit & loss, balance sheet, and reconciliation process	H	<ul style="list-style-type: none"> • Advanced Analytics/ Big Data Analytics - compare key financial metrics across previous years to derive explanations. • Blockchain - reconciliation efforts eliminated as it provides certainty in record transaction history and enables complete and conclusive verification of transactions.
Assist in budgeting and forecasting	H	<ul style="list-style-type: none"> • AI - predict revenue and cost increase/ dip due to internal and external factors. Suggest product lines or lines of business to focus on. • Shift towards interpreting and/or validating the outputs of AI
Analyse and prepare financial ratios	H	<ul style="list-style-type: none"> • RPA - automate the preparation of financial ratios with more efficiency and greater accuracy. • New focus to interpret the financial ratios considering prevalent market environments

In the next **3 – 5** years...

This role can take on new tasks such as interpreting data analysis, providing insights and recommendations to relevant stakeholders.

Emerging skills

- Data Analytics
- Data Governance
- Digital Technology Adoption and Innovation
- Digital Technology Environment Scanning
- Finance Business Partnering
- Macroeconomic Analysis

Skills to be enhanced

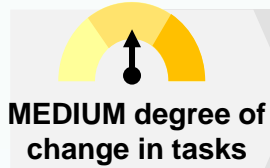
- Sense Making
- Digital Literacy
- Problem Solving

Management Accountant/ Financial Planning and Analysis Analyst/ Business Analyst

Technology enablers impacting this job...

- 1) Advanced Analytics/ Big Data Analytics
- 2) Robotic Process Automation (RPA)
- 3) Artificial Intelligence (AI)

Impact assessment...



A **MODERATE** exposure to data analytics. It substitutes a small proportion of job tasks, and at the same time amplify human performance.

Within **3 to 5 years**, the role will potentially...

REQUIRE REDESIGN

Key Work Functions/ Tasks *Impact at task-level / Future view of job tasks*

Perform financial modelling to support strategic planning	H	<ul style="list-style-type: none"> • AI - generate multiple variations of financial simulations within minutes to analyse financial proposals. • Shift towards interpreting and/or validating the outputs of AI
Review completeness of the financial and cost accounting	H	<ul style="list-style-type: none"> • RPA – identify gaps in financial and cost accounting • AI – more accurate forecasting and budgeting based on macro and internal trends affecting the business. • Shift to defining rules for RPA systems and perform training of the machine
Analyse trends, risks and improvements for operational efficiency	M	<ul style="list-style-type: none"> • Advanced Analytics/ Big Data Analytics – track past and predict future trends, identify potential business risks. • Human interpretation of data and patterns required to generate insights and actionable improvement steps to achieve optimal operational efficiency.
Develop the internal control system	M	<ul style="list-style-type: none"> • Human judgement is key in deriving the appropriate internal control systems for the organisation. Some physical sighting/ hands-on investigation is required

In the next **3 – 5** years... Focus on utilising human judgement to interpret results and recommend ways to improve operations and performance measurement, collaborating with cross-functional stakeholders.

Emerging skills

- Data Analytics
- Data Governance
- Digital Technology Adoption and Innovation
- Digital Technology Environment Scanning
- Finance Business Partnering
- Macroeconomic Analysis

Skills to be enhanced

- Sense Making
- Problem Solving

Four Key Themes of Evolution Of Finance Job Roles



Junior FA and MA roles have high likelihood of displacement due to technology.

Tasks will shift towards:

- Providing insights from data analytics
- Providing input to train machines

Degree of technology impact varies across industry and organization size.



Advancement of the workforce and their demand for higher skilled roles.

Role of Accounts Executive/ Accounts Assistant and Accounting Executive has diminished and there is an increasing demand for higher-skilled roles that shifts away from data inputs and routine checking.

Education syllabus and courses prepare graduates to take on roles beyond entry level.



SMEs find it more difficult to implement technologies due to lack of funding.

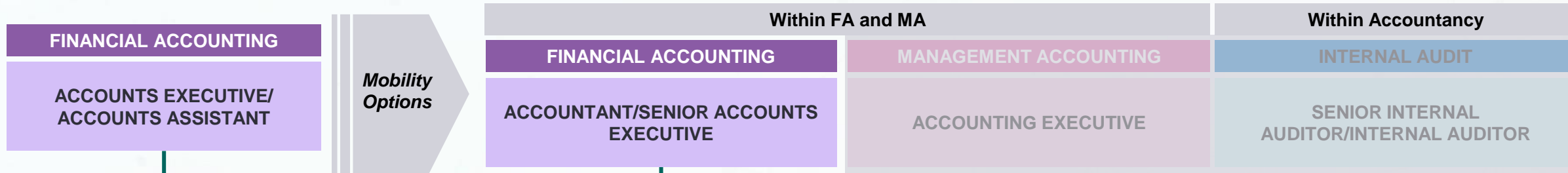
When considering implementing new technologies SMEs need to assess ROI prior to implementation. Often times these technologies have a high price tag. SMEs may explore available assistance programmes/ initiatives to kick-start their technology transformation journey.



Possibility of right-shoring certain Finance roles, while retaining higher value roles locally.

Companies should strive to adopt technologies to perform simple and manual intensive tasks. However, some companies face the dilemma of technology investment vs. right-shoring, where certain tasks are outsourced while retaining business critical functions in the local base. Assessment of return on investment is required.

Job Mobility - Accounts Executive/Accounts Assistant



Technical Skills and Competencies

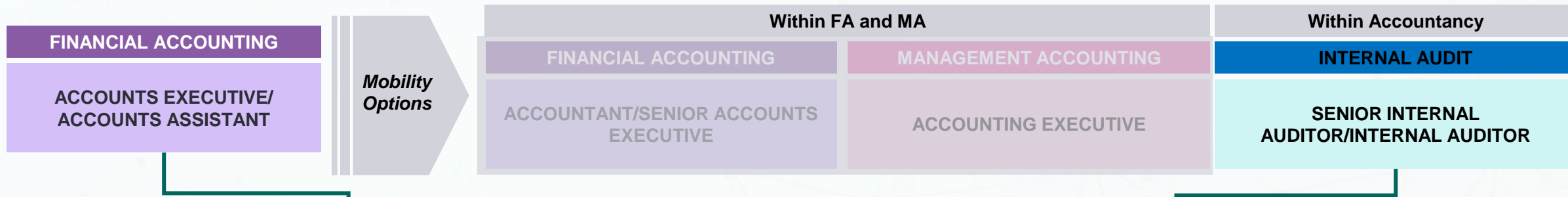
- | | |
|---|---|
| 1) Accounting Standards | 14) Internal controls |
| 2) Accounting and Tax Systems | 15) Professional and Business Ethics |
| 3) Audit Compliance | 16) Professional Scepticism and Judgement |
| 4) Business Innovation and Improvement | 17) Professional Scepticism and Judgement |
| 5) Data Analytics | 18) Professional Standards |
| 6) Digital Technology Adoption and Innovation | 19) Project Management |
| 7) Digital Technology Environment Scanning | 20) Tax Computation |
| 8) Financial Closing | 21) Tax Implications |
| 9) Financial Management | 22) Taxation Laws |
| 10) Financial Reporting | 23) Transactional Accounting |
| 11) Financial Reporting Quality | 24) Transfer Pricing |
| 12) Financial Transactions | |
| 13) Group Accounting and Consolidation | |

Technical Skills and Competencies

- | | |
|--|---|
| 1) Accounting Standards | 16) Financial Reporting Quality |
| 2) Accounting and Tax Systems | 17) Financial Statements Analysis |
| 3) Audit Compliance | 18) Group Accounting and Consolidation |
| 4) Audit Frameworks* | 19) Internal Controls |
| 5) Business Innovation and Improvement | 20) Professional and Business Ethics |
| 6) Business Planning* | 21) Professional Scepticism and Judgement |
| 7) Capital Expenditure and Investment Evaluation* | 22) Professional Standards |
| 8) Conflict Management* | 23) Project Management |
| 9) Data Analytics | 24) Regulatory Compliance* |
| 10) Digital Technology Adoption and Innovation | 25) Stakeholder Management* |
| 11) Digital Technology Environment Scanning | 26) Tax Computation |
| 12) Finance Business Partnering* | 27) Tax Implications |
| 13) Financial Closing | 28) Taxation Laws |
| 14) Financial Management | 29) Transactional Accounting |
| 15) Financial Reporting | 30) Transfer Pricing |

* Note: Skill Gap

Job Mobility - Accounts Executive/Accounts Assistant



Technical Skills and Competencies

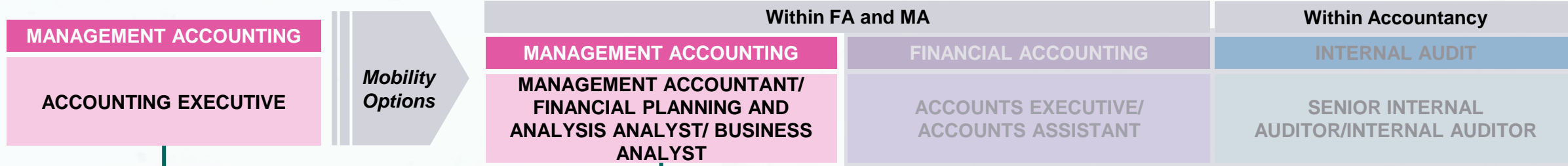
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- 19) Project Management
- 20) Tax Computation
- 21) Tax Implications
- 22) Taxation Laws
- 23) Transactional Accounting
- 24) Transfer Pricing

Technical Skills and Competencies

- 1) Auditor Independence*
- 2) Business Acumen*
- 3) Business Innovation and Improvement
- 4) Business Process Analysis*
- 5) Cyber Security*
- 6) Data Analytics
- 7) Due Professional Care*
- 8) Enterprise Risk Management*
- 9) Financial Statements Analysis*
- 10) Fraud Risk Management*
- 11) Governance*
- 12) Infocomm Security and Data Privacy*
- 13) Information Gathering and Analysis*
- 14) Internal Audit Engagement Execution*
- 15) Internal Audit Engagement Planning*
- 16) Internal Controls
- 17) Professional and Business Ethics*
- 18) Professional Standards
- 19) Project Execution and Control*
- 20) Risk Management*

* Note: Skill Gap

Job Mobility - Accounting Executive



- Technical Skills and Competencies**
- 1) Accounting and Tax Systems
 - 2) Audit Compliance
 - 3) Benchmarking
 - 4) Conflict Management
 - 5) Corporate and Business Law
 - 6) Cost Management
 - 7) Data Analytics
 - 8) Data Governance
 - 9) Digital Technology Adoption and Innovation
 - 10) Digital Technology Environment Scanning
 - 11) Finance Business Partnering
 - 12) Financial Analysis
 - 13) Internal Controls
 - 14) Macroeconomic Analysis
 - 15) Management Decision Making
 - 16) Performance Management
 - 17) Professional and Business Ethics
 - 18) Risk Management
 - 19) Tax Implications
 - 20) Taxation Laws

- Technical Skills and Competencies**
- 1) Accounting and Tax Systems
 - 2) Audit Compliance
 - 3) Benchmarking
 - 4) **Business Planning***
 - 5) Conflict Management
 - 6) Corporate and Business Law
 - 7) Cost Management
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 - 10) Digital Technology Adoption and Innovation
 - 11) Digital Technology Environment Scanning
 - 12) Finance Business Partnering
 - 13) Financial Analysis
 - 14) **Financial Planning***
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 - 16) Macroeconomic Analysis
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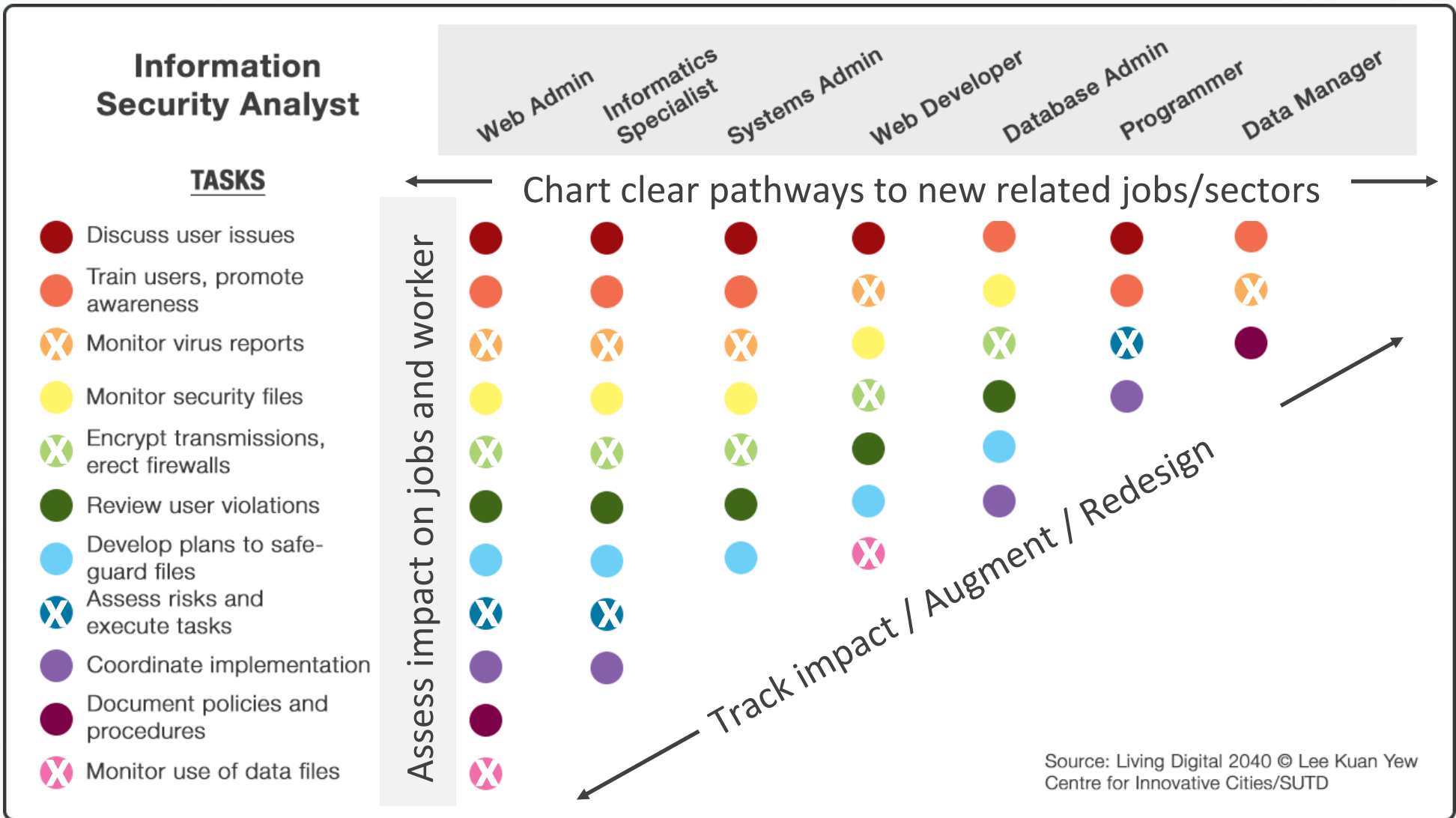
* Note: Skill Gap

LKYCIC: Tasks x Skills

Complementary frameworks







Growing role and use of tasks

Expands "toolbox"









Source: Living Digital 2040 © Lee Kuan Yew Centre for Innovative Cities/SUTD

Job Mobility – Outside of Accountancy Sector (FA- Accounts Executive/Accounts Assistant)

Job Role	FA - Accounts Executive/ Accounts Assistant					
Suggested inter-sector transition	Clinical Data Manager		Business Intelligence Analyst		Customer Service Representative	
Task transition diagram	Similar tasks 	Tasks to train for 	Similar tasks 	Tasks to train for 	Similar tasks 	Tasks to train for 
Type	Emerging role		Emerging role		Adjacent role	
Role Description	The role of the Clinical Data Manager is to apply knowledge of healthcare and database management to analyse clinical data, and to identify and report trends.		The role of the Business Intelligence Analyst is to produce financial and market intelligence by querying data repositories and generating periodic reports. He/she also devises methods for identifying data patterns and trends in available information sources.		The role of the Customer Service Representative is to interact with customers to provide information in response to inquiries about products and services, and also handle and resolve complaints.	

Job Mobility – Outside of Accountancy Sector (MA- Accounting Executive)

Job Role	MA - Accounting Executive					
Suggested inter-sector transition	Quality Control Systems Manager		Logistics Manager		Compliance Manager	
Task transition diagram	Similar tasks 	Tasks to train for 	Similar tasks 	Tasks to train for 	Similar tasks 	Tasks to train for 
Type	Adjacent role		Emerging role		Emerging role	
Role Description	<p>The role of the Quality Control Systems Manager is to plan, direct and/or coordinate quality assurance programmes.</p> <p>He/She has to formulate quality control policies and also control the quality of laboratory and production efforts.</p>		<p>The role of the Logistic Manager is to plan, direct and/or coordinate purchasing, warehousing, distribution, forecasting, customer service, and/or planning services.</p> <p>He/She has to manage logistics personnel and logistics systems, and direct daily operations.</p>		<p>The role of the Compliance Manager is to plan, direct and/or coordinate activities of an organisation to ensure compliance with ethical and/or regulatory standards.</p>	

Emerging Role: Data Protection Officer

Data Protection Officer		
Existing Roles	Similar Tasks (New Role)	Tasks to Train (New Role)
Financial Accountant	<ol style="list-style-type: none"> 1. Liaise with the PDPC on data protection matters, if necessary. 2. Alert management to any risks that might arise with regard to personal data 	<ol style="list-style-type: none"> 1. Ensure compliance of PDPA when developing and implementing policies and processes for handling personal data 2. Foster a data protection culture among employees and communicate personal data protection policies to stakeholders 3. Manage personal data protection related queries and complaints
Management Accountant	<ol style="list-style-type: none"> 1. Ensure compliance of PDPA when developing and implementing policies and processes for handling personal data 	<ol style="list-style-type: none"> 1. Alert management to any risks that might arise with regard to personal data 2. Liaise with the PDPC on data protection matters, if necessary. 3. Foster a data protection culture among employees and communicate personal data protection policies to stakeholders 4. Manage personal data protection related queries and complaints

Challenges: How Tasks Can Help

- 1) Job redesign, job rotation and upskilling require mindset shifts**
 - tasks make it possible to see unexpected transitions
- 2) Greater clarity on training courses is a necessity**
 - tasks make it concrete what is new and what is similar
- 3) Successful job redesign is multi-faceted and requires planning**
 - tasks help identify the hard and soft skills that are more versatile

**Please scan the QR Code below to download the full report
“Redefining the Finance Function with Job Redesign”**



<https://isca.org.sg/jobredesignfinance>

Thank You

