Table of Contents

Foreword 04
Message 05
Executive Summary 06
Chapter 1: Introduction 10
Chapter 2: Navigating the Digital Roadmap 14
Chapter 3: Improving Organisational Effectiveness 16
Chapter 4: Enhancing Service User Experience 32
Chapter 5: Developing Sector Connectivity 42
Chapter 6: Get Started Today 44
Acknowledgements 48
Appendix 50
Foreword by Ms Janet Young
Chairperson
Industry Digital Plan for Social Services Advisory Panel

“At the heart of it, the IDPSS aims to build an impactful sector enabled by technology, to deliver user-centric digital services that empowers service users.”

Message by Mr Masagos Zulkifli
Minister for Social and Family Development and Second Minister for Health

While we are dealing with the immediate crisis, we need continue to keep our focus on the longer-term. In 2020, I challenged the sector and every SSA to make the leap towards SSA 3.0. It represents a sector that constantly seeks ways to deliver services more effectively and efficiently – one that invests in building up leadership, ensures good governance with systems and structures that encourage transparency and accountability, and engages its stakeholders to ensure that our services continue to be relevant to meet community needs.

To help us get to SSA 3.0, we need to ride the wave of digitalisation to transform and create social innovation. While we are a high-touch sector, the use of technology need not cause us to lose the personal connection in our interactions with our service users. Instead, proper use of technology can help us improve the way we work and maximise the impact for service users.

To provide a structured framework to guide SSAs in your digitalisation journey, we have launched the Industry Digital Plan for Social Services (IDPSS). This is the first IDP for the social service sector, and we have co-created it in consultation with the sector, industry partners and technology experts. We believe it will help SSAs easily assess your organisation’s level of digital adoption, identify priority areas and find suitable solutions, as well as explore available funding and resources, to accelerate your digitalisation plan. I thank the Advisory Panel, as well as the various professionals and experts consulted, for their valuable input to the development of the IDPSS.

We know that technology is constantly evolving. That is why the IDPSS will be periodically refreshed with updates on relevant technologies for SSAs to adopt. Through IDPSS, you can stay in touch with the latest trends and developments impacting the sector, as you strive to achieve your digital aspirations and serve your clients better.

I strongly encourage every SSA to go through the IDPSS and apply it to your organisation. With everyone working towards the SSA 3.0 vision, we can collectively bring our sector to the next level. Let us build a caring, resilient and inclusive society together.
Executive Summary

The social service sector is helmed by 16,500 social service professionals, over 130,000 volunteers and close to 500 social service agencies (SSAs). It is a multi-faceted sector, which strives to improve the quality of life of children and youth, families, seniors, caregivers, persons with disabilities or persons with mental health conditions, as well as persons with rehabilitation and reintegration needs.

Today, the sector is faced with growing demand and greater complexity in providing social services, increasingly tech-savvy service users, and a lack of access to technology for those in need of most support. As a traditionally high-touch sector, where there is significant interaction between service user and provider, there is a need to evolve the service delivery model to manage the impact of external circumstances and meet changing needs of the population.

To this end, technology can play a key role in automating processes, lessening the effects of disabilities, reducing information-asymmetry between service users, providers and partners, and making services more accessible to end-users. As a result, technology has started to permeate the sector rapidly and will remain a key enabler for our workforce in the medium to long term.

While substantial support has been provided through initiatives such as The Invictus Fund (TIF) and Tech-and-Go! Consultancy, there is a need for a structured plan to drive medium-term digitalisation within the sector. The three-year IDPSS is focused on providing systematic guidance on how SSAs can assess and accelerate their digitalisation to support their transformation journey.

The IDPSS is driven by the following three strategic directions.

01. Building A Digital Foundation
   Build a strong foundation for efficient and resilient operations and service delivery

02. Empowering Service Users and Delivering User-Centric Digital Services
   Increase service users' quality of life through a person-centred approach

03. Strengthening The Social Service Digital Ecosystem
   Achieve systemic impact and change through increased ecosystem collaborations
From the three strategic directions, SSAs are guided to advance their digitalisation journey across the following five focus areas:

- **Secure, Integrated Solutions and Infrastructure**
  
  As the first step to uplift the sector’s digital maturity, SSAs should adopt foundational solutions that help to improve organisational productivity, thereby diverting time savings to tasks that more directly impact client outcomes.

  **Goal:** 80% of SSAs adopt three or more foundational solutions

- **Enhanced Service User Experience**
  
  There needs to be a deliberate effort to leverage technology to enhance service delivery across all touchpoints – be it by increasing access to services via a digital option, or improving engagement via service delivery technology solutions.

  **Goal:** 80% of services are tech-enabled

- **Connected Community and Partnerships**
  
  Resources can be better optimised by tapping into collaborations, thereby enhancing the sustainability of digitalisation efforts. Better solutions could also be co-created from such partnerships.

  **Goal:** 30 digital collaboration projects in people, private and public sectors

- **Data Proficiency**
  
  SSAs should work towards being a data-driven organisation to enhance operations and service planning by having the necessary data strategy and systems in place.

  **Goal:** 30% of SSAs use data to enhance operations and service planning

- **Digital Talent and Leadership**
  
  To optimise the value of technology, adoption of solutions must be accompanied by the needed literacy and competency, as well as an agile and data-driven culture.

  **Goal:** 80% of SSAs have staff capable of using technology

The IDPSS serves as a guide to help SSAs achieve their digitalisation goals through structured step-by-step guidance in the following areas:

- **Navigating the Digital Roadmap**
  
  Provide SSAs with a tailored Digital Roadmap to move forward in their digitalisation journey

- **Improving Organisational Effectiveness**
  
  Strengthen SSAs in 5 focus areas to achieve organisational effectiveness using the Digital Roadmap, Foundational Solutions Guide and Digital Skills Guide

- **Enhancing Service User Experience**
  
  Guide SSAs in adopting technology solutions according to types of services rendered and user needs

- **Developing Sector Connectivity**
  
  Leverage a suite of technology platforms and enablers to support SSAs in connecting and delivering services seamlessly
## Chapter 1: Introduction

### Social Service Trends

The Social Service sector is constantly being challenged to do more in a rapidly evolving landscape impacted by shifts in the economy and public health, and growing demand and complexity of services. An increasing familiarity of service users with digital services is also changing the way they prefer to interact with SSAs. The trends highlighted below reflect changes in society and culture, the major role that digitalisation plays in tackling these shifts to empower the service user, raise operational efficiency of SSAs, and benefit the wider sector, and the consideration required from a governance perspective.

### Key Trends

<table>
<thead>
<tr>
<th>Key Trend</th>
<th>How SSAs Can Respond</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Increasing Demand and Complexity of Social Services</strong></td>
<td>• Digitalisation of Social Services will enable efficient and resilient operations and service delivery for the sector, improving productivity and enhancing user experiences.</td>
</tr>
<tr>
<td><strong>More Tech-savvy Service Users</strong></td>
<td>• Increase use of digital channels and services to meet rising expectations of service users and to enhance accessibility.</td>
</tr>
<tr>
<td><strong>Changing Social Service Workforce</strong></td>
<td>• Upskill less tech-savvy employees to raise the digital capability baseline.</td>
</tr>
<tr>
<td><strong>More Data Aggregation</strong></td>
<td>• Build a digital culture and mindset as part of organisation DNA to increase employees' collaboration on digital initiatives.</td>
</tr>
<tr>
<td><strong>Lack of Access to Technology for Those in Need of Most Support</strong></td>
<td>• Build proficiency in data to enhance service planning and operations.</td>
</tr>
<tr>
<td><strong>More Partnerships between Private Sector and Social Services</strong></td>
<td>• Enable service users to access digital services through developing digital literacy and provision of resources.</td>
</tr>
<tr>
<td><strong>Sources:</strong> Social Service Sector Strategic Thrusts, Deloitte Center for the Long View, Dorothy A. Johnson Center for Philanthropy</td>
<td>• Collaborate with ecosystem partners and other SSAs to improve digital infrastructure and close the digital gap.</td>
</tr>
<tr>
<td></td>
<td>• Proactively partner with the private sector to enhance digital capabilities and leverage ecosystem partners' platforms for greater digital outreach and service delivery.</td>
</tr>
</tbody>
</table>
Social Service Goes Digital

Substantial support and direction have been provided to the social service sector through key initiatives such as the Social Service Sector Strategic Thrusts (4ST), The Invictus Fund (TIF) and the Beyond COVID-19 Taskforce (BCTF). These initiatives address the sector challenges as a whole, with digitalisation strategies and initiatives embedded as a recurring sub-theme. To enable the SSAs to better cope with the changing landscape and societal expectations, NCSS has developed the IDPSS to help SSAs put digitalisation and technology at the core of their work.

In 2017,

NCSS developed a 5-year roadmap guided by a person-centred and holistic approach to improve the quality of life for individuals. A key thrust of the 4ST is to deliver innovative and sustainable solutions with technology. This led to the development of several digital initiatives aimed at improving productivity and user satisfaction.

In 2020,

To support the vision of SSA 3.0 and in response to the COVID-19 pandemic, NCSS launched the second tranche of TIF to provide funding to SSAs for the adoption of technology and transformation of their service delivery and operation.

In 2021,

In May 2021, the BCTF guide was launched. It provided recommendations on how the social service sector can build resilience and emerge stronger. Digital transformation was identified as the #1 challenge most SSAs faced, with more than 56% of SSAs who want digitalisation to continue beyond COVID-19.

The IDPSS is conceived to provide guidance on how SSAs can go digital.

*To find out more on the digital initiatives, refer to page 52-53
Chapter 2: **Navigating the Digital Roadmap**

**Take Your SSA Digital Roadmap Assessment (DRA)**  
SSAs can take the DRA to assess your agency's accomplishments and opportunities to guide your digitalisation journey and improve organisational effectiveness across 5 Focus Areas:

1. **Secure, Integrated Solutions and Infrastructure**  
   Implement integrated technology solutions to enable more efficient agency operations and robust cybersecurity to protect data

2. **Enhanced Service User Experience**  
   Adopt service delivery technology that enables person-centred and integrated services, and cater to service users' expectations and needs

3. **Connected Community and Partnerships**  
   Engage with the social service community such as volunteers, donors and ecosystem partners to collaborate, co-create, learn from or gather support on digital initiatives

4. **Data Proficiency**  
   Become an insights-driven organisation using data and analytics to make informed decisions on future service delivery and operations planning

5. **Digital Talent and Leadership**  
   Enhance digital skills of the social service workforce and leadership to drive digitalisation efforts

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Take the SSA Digital Roadmap Assessment to determine your progress across the five focus areas!
Chapter 3: **Improving Organisational Effectiveness**

### FOCUS AREA 1

**Secure, Integrated Solutions and Infrastructure**

**What is it?**

Implement integrated technology solutions to enable more efficient agency operations and robust cybersecurity to protect data.

**Benefits**

- Enhanced business resilience
- Improved information security
- Increased productivity in operations

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"The introduction of The Invictus Fund and Tech-and-GO! was timely in supporting AMP’s digital transformation plans through provision of a list of pre-approved vendors. This sped up our selection of a solution provider and identification of our most critical IT needs to plug digital gaps within our operations."

Ms Shiffa Khumaira
Manager (Fund Raising)
Association of Muslim Professionals

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"We applied for Tech-and-GO! in light of the increase in online meetings [as a result of the Covid-19 pandemic] and were able to procure cybersecurity software for all our employees’ computing devices, thus helping to prevent any cybersecurity breach that would compromise our data."

Ms Rei Tian Foo
Corporate Communications
Youth Outreach Guidance Services

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**Take a Step Forward!**

1. **FOUNDATION**
   - Review processes and implement foundational and integration-ready solutions. *(Refer to the next page for more details)*
   - Adhere to cybersecurity and data protection baseline requirements
   - Conduct cybersecurity risk, IT risk and data protection compliance assessments
   - Develop an IT incident response and recovery plan

2. **INTERMEDIATE**
   - Integrate new and existing systems
   - Conduct regular cybersecurity, data protection and IT audits

3. **ADVANCED**
   - Adopt business process monitoring solutions to uncover process improvement opportunities

**Resources for SSAs**

1. Foundational Solutions Guide (Pg 18)
2. Digital Skills Guide (Pg 28)
3. Support and Funding (Pg 48)
   - IT Solutions and Integration
   - Advisory / Consultancy
   - Implementation
   - Assessments and Audits
   - TechUP Friday!
   - Training ( Funded by SkillsFuture Singapore)
Foundational Solutions Guide

Below are foundational and integration-ready solutions to be implemented to help you achieve Foundation Stage (Stage 1) for Focus Area 1: Secure, Integrated Solutions and Infrastructure of the SSA digital roadmap

Office Productivity Systems
Systems and tools that improve corporate productivity and staff efficiency

- Office Productivity Solutions
- Video Conferencing
- Document Management
- Collaboration Tools

Stakeholder Engagement Systems
Systems and tools that facilitate stakeholder engagement and management but are not directly client-facing

- Donor Management
- Volunteer Management
- Client / Case Management
- Website
- Centre Management

Corporate Systems
Systems that support corporate functions, such as finance, human resources, IT and procurement

- Accounting System
- Human Resource Management System

Data and Reporting Tools
Tools that provide data reporting and analysis

- Management and Funder Reporting (Automated)

Cybersecurity
Solutions and tools that protect systems and data from cyberthreats

- Antivirus Solutions
- Encryption Tools
- Virtual Private Networks (VPNs)
- Firewalls
- Identity and Access Management

Refer to Appendix for definition of foundational solutions
The list provided above is not exhaustive
**FOCUS AREA 2**

**Enhanced Service User Experience**

**What is it?**
Adopt service delivery technology that enables person-centred and integrated services, and cater to service users’ expectations and needs.

**Benefits**
- Services are more accessible
- Targeted and tailored services
- Seamless and integrated experience across multiple touchpoints

**Strengthened Service Impact through Tech-Enabled Training Simulation and Rehabilitation**

The APSN Centre for Adults prepares trainees for the workforce through a comprehensive on-the-job training curriculum that equips trainees with skills for open market employment. **Limited by conventional training modalities,** APSN sought to find a solution to **simulate real-life tasks** to deliver contextualised training.

Through the **NCSS Back-to-Basics Project,** APSN found its answer and adopted the BTE PrimusRS functional rehabilitation system. This digital enhancement has **increased training efficiency** and empowered trainees to be **viable employed** in the workforce.

**Take a Step Forward!**

1. **FOUNDATION**
   - Streamline processes and implement foundational service delivery technology (Refer to Chapter 4 for more details)
   - Capture relevant data on service users and service delivery within each agency programme

2. **INTERMEDIATE**
   - Enhance processes and implement advanced service delivery technology (Refer to Chapter 4 for more details)
   - Enable a holistic view of service users within the organisation

3. **ADVANCED**
   - Apply human-centred design methodology to improve service for service users
   - Collaborate with other SSAs and ecosystem partners to deliver integrated services
   - Derive insights through analysis of service user data to enhance the service user journey

**Resources for SSAs**
1. Service Delivery Technology Guide (Pg 32)
2. Digital Skills Guide (Pg 28)
3. Support and Funding (Pg 48)
   - IT Solutions and Integration
   - Advisory / Consultancy
   - Implementation
   - Assessments and Audits
   - TechUP Friday!
   - Training (Funded by SkillsFuture Singapore)
FOCUS AREA 3
Connected Community and Partnerships

What is it?
Engage with the social service community such as volunteers, donors and ecosystem partners to collaborate, co-create, learn from or gather support on digital initiatives

Benefits
- Enhanced digitalisation capabilities and resource augmentation
- Increased organisation effectiveness through co-creation of initiatives and services
- Enhanced sustainability for digitalisation efforts

Corporate Partnerships to Catalyse Digital Transformation

In response to New Hope Community Services (NHCS)'s desire to achieve wider digital transformation, volunteers from JP Morgan and Telstra Singapore came on board to offer their skills and expertise.

The collaboration's success in developing digital solutions to enhance current work processes can be attributed to commitment from all parties – NHCS holding regular and open conversations with its corporate volunteers, JP Morgan providing project management expertise and Telstra Singapore designing the digital solution.

Resources for SSAs
1. NCSS Volunteer Resources (Pg 48)
   - Corporate Volunteerism Guide
   - Partnering Organisations Towards a Lasting Impact on Social Service Users
2. Central Platforms (Pg 42)
   - Social Service Navigator
   - Social Service Net (SSNet)
   - SG Cares Digital Kampong
3. Networking & Engagement
   - TechUP Friday!
   - Capabilities Circle
   - GatherHere
   - Community of Practice (CoP)
   - Sector Transformation Mentoring Programme
4. Support & Funding (Pg 48)
   - Pioneer Group Project
   - Innovation Pilot Grant
   - Resource Matching

Shout Out to Ecosystem Partners
- Offer existing platforms to meet social service needs (e.g. eCommerce platforms for service delivery, social listening analytics to detect user needs)
- Join networking and engagement events and explore collaboration opportunities on bite-sized and longer-term partnerships with SSAs
- Develop and / or run sector-specific digital training programmes for and with SSAs

JP Morgan volunteers were preparing donated PCs at New Hope for distribution during the Covid-19 pandemic

Refer to Appendix for more detailed resources to progress in the digital roadmap
FOCUS AREA 4
Data Proficiency

What is it?
Become an insights-driven organisation using data and analytics to make informed decisions on future service delivery and operations planning.

Benefits
- Better informed decision-making process
- Better situation awareness through data sharing
- Improved service planning, reduced information-asymmetry

Safeguarded Personal Data through Holistic Data Protection
To protect service users’ personal data and instil trust in their stakeholders, New Life Community Services (NLCS) decided to take up the Start Digital Programme.

Through this programme, NLCS was able to refine and implement robust personal data protection policies and practices, and improve their SOPs to comply with the Personal Data Protection Act obligations.

This has helped NLCS to improve the efficiency and safety of their services and day-to-day operations, increase its competitive advantage and build trust with donors and stakeholders.

Take a Step Forward!

1. Digital Skills Guide (Pg 28)
2. Support and Funding (Pg 48)
   - IT Solutions and Integration
   - Advisory / Consultancy
   - Implementation
   - Assessments and Audits
   - TechUP Friday!
   - Training (Funded by SkillsFuture Singapore)

Utilise advanced analytics to enhance service delivery and service planning
Establish agency-wide data management policies and procedures
Develop a data strategy plan
Support service integration and referrals by sharing data with other SSAs and ecosystem partners

Resources for SSAs

Refer to Appendix for more detailed resources to progress in the digital roadmap.
FOCUS AREA 5
Digital Talent and Leadership

What is it?
Enhance digital skills of the social service workforce and leadership to drive digitalisation efforts

Benefits
Positive results through organisational change  
Strengthened governance and increased resiliency  
More engaged workforce

Equipping Leaders to Drive Digital Transformation

While adoption of technology to remain digitally ready has been a priority for the leadership of Organisation Mondiale Pour l’Education Prescolaire (OMEP) Singapore, they were not sure how best to embark on their digitalisation journey.

A course by Singapore Management UniversityxAccenture dispelled the leadership’s apprehension around digital transformation, highlighting its value to the organisation. It has since spurred them to embrace technology to improve systems and processes, and to leverage data analysis to better meet client needs and plan their digital strategy.

Resources for SSAs
1. Digital Skills Guide (Pg 28)
2. Support and Funding (Pg 48)
   - Tech-and-GO! Capability Building
   - Training (Funded by SkillsFuture Singapore)

Take a Step Forward!

A  Appoint digital lead and form IT / digitalisation workgroup and board sub-committee
B  Acquire workforce digital skills according to roles (Refer to the next page for more details)
C  Build digital-first culture throughout the organisation

Develop a digital strategy plan

Participants at the inaugural SMUxAccenture Managing Change in the Digital Age course

Refer to Appendix for more detailed resources to progress in the digital roadmap
### Digital Skills Guide

**Workforce Digital Skills to Accelerate SSA Digital Transformation**

A skilled workforce is key to driving digital transformation. Apart from enabling all staff with the necessary digital skills to carry out daily tasks and stay in pace with organisation transformation, digital champions must be equipped with role-specific skill sets to further digitalisation efforts. Upskill your employees in the necessary digital skills training topics below and where appropriate match the topics to assigned roles based on your needs to support your digitalisation journey.

<table>
<thead>
<tr>
<th>ROLES</th>
<th>*DIGITAL SKILLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>• Business Analytics for Strategic and Organisational Performance</td>
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<tr>
<td></td>
<td>• Digital Marketing Strategy</td>
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<tr>
<td></td>
<td>• Digital Transformation Strategy</td>
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<tr>
<td>General</td>
<td>• Augmented Reality and Virtual Reality</td>
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<td></td>
<td>• Cybersecurity Awareness</td>
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<td></td>
<td>• Data Analytics</td>
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<td>• Data Protection Management</td>
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<td>• Digital Learning for Beginners</td>
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<td>• Digital Payment</td>
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<td>• Digital Transformation Fundamentals</td>
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<td>• Human-Centred Design Fundamentals</td>
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<td></td>
<td>• Smart Sensors and Integration</td>
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<td></td>
<td>• Understanding of Internet of Things</td>
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<td></td>
<td>• User Experience Design Fundamentals</td>
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</tbody>
</table>

*Not exhaustive*

The digital skills listed in this guide are training topics which can be found on the SkillsFuture Website. Go to SkillsFuture website to look up appropriate courses.
SSA Digital Roadmap

Summary of 5 Focus Areas
Based on your SSA Digital Roadmap Assessment, your SSA may have checked off the activities in a non-sequential manner across the 3 stages and 5 Focus Areas. It is important to note that this digital roadmap is a guide for your digitalisation journey, and not an inflexible checklist. You should consider the scale, needs and requirements of your agency in using this roadmap.

<table>
<thead>
<tr>
<th>FOCUS AREAS</th>
<th>1 FOUNDATION</th>
<th>2 INTERMEDIATE</th>
<th>3 ADVANCED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secure, Integrated Solutions and Infrastructure</td>
<td>□ Review processes and implement foundational and integration-ready solutions</td>
<td>□ Integrate new and existing systems</td>
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<td>□ Adhere to cybersecurity and data protection baseline requirements</td>
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<td>□ Conduct cybersecurity risk, IT risk and data protection compliance assessments</td>
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<td></td>
<td>□ Develop an IT incident response and recovery plan</td>
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<td>Enhanced Service User Experience</td>
<td>□ Streamline processes and implement foundational service delivery technology</td>
<td>□ Enhance processes and implement advanced service delivery technology</td>
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</tr>
<tr>
<td></td>
<td>□ Capture relevant data on service users and service delivery within each agency programme</td>
<td>□ Enable a holistic view of service users within the organisation</td>
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<td></td>
<td></td>
<td>□ Derive insights through analysis of service user data to enhance the service user journey</td>
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<tr>
<td>Connected Community and Partnerships</td>
<td>□ Learn from peers and subject matter experts in the social service community</td>
<td>□ Develop mid-to-long term ecosystem partnerships with commitment from partners to devote digitalisation resources to an SSA for a specific period of time</td>
<td>□ Connect with other SSAs with similar use cases and needs to explore and develop new technology solutions</td>
</tr>
<tr>
<td></td>
<td>□ Collaborate with Corporates and Institutes of Higher Learning (IHLs) through CSR-related internships and digitalisation projects</td>
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<tr>
<td></td>
<td>□ Leverage online platforms of ecosystem partners to access digital services, donations, payments etc</td>
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</tr>
<tr>
<td>Data Proficiency</td>
<td>□ Digitise data and centralise data repository</td>
<td>□ Utilise data discovery / visualisation tools to derive insights</td>
<td>□ Utilise advanced analytics to enhance service delivery and service planning</td>
</tr>
<tr>
<td></td>
<td>□ Establish agency-wide data management policies and procedures</td>
<td>□ Develop a data strategy plan</td>
<td>□ Support service integration and referrals by sharing data with other SSAs and ecosystem partners</td>
</tr>
<tr>
<td>Digital Talent and Leadership</td>
<td>□ Appoint digital lead and form IT / digitalisation workgroup and board sub-committee</td>
<td>□ Develop a digital strategy plan</td>
<td>□ Build digital-first culture throughout the organisation</td>
</tr>
<tr>
<td></td>
<td>□ Acquire workforce digital skills according to roles</td>
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Chapter 4: Enhancing Service User Experience

Service Delivery Technology Guide
The following serves as a guide for SSAs to explore service delivery technology to enhance each service user journey.

Service Delivery Functions
Service Delivery Functions are structured based on the objectives and mode of delivery to address the needs of specific user groups.

Access to Service
Solutions to enhance access through support for registration, appointment scheduling, identity authentication and service inquiries.

Delivery of Service
Solutions to enhance direct client interventions and enable efficient and integrated service delivery.

Transition out of Service
Solutions to enable seamless communication of service users’ changing needs, transfer, exit or re-entry of services when necessary.

ENTER  ENGAGE  EMPOWER

Centre-based & Institution-based Services (Healthcare & Non-Healthcare)
Disability Support Services (Children, Youths, Adults & Seniors)
Mobile & Home-based Services (Healthcare & Non-Healthcare)
Rehabilitation, Re-integration and Support Services (Mental Health, Addiction & Reformed Offenders)
Support Services for Community & Family Integration including Caregivers
Identify Your Service Delivery Functions

Service delivery technologies have been grouped under five Service Delivery Functions. Identify the relevant Service Delivery Functions below to explore suitable technologies to enhance your service delivery. Your agency may fall under one or more functions.

- **Centre-based and Institution-based Services (Healthcare and Non-Healthcare)**
  - Healthcare treatment and care support services for in-house clients (including children, youths, adults, & seniors)
  - Personal and psychosocial support services for in-house clients (including children, youths, adults and seniors)
  - Residential care for healthcare and welfare needs

- **Disability Support Services (Children, Youths, Adults and Seniors)**
  - Early intervention and special needs education programme across developmental stage
  - Residential care
  - Social and community living skills training
  - Before and after school care
  - Vocational training
  - Job placement and job support
  - Assistive / Technology
  - Deputyship

- **Mobile and Home-based Services (Healthcare and Non-Healthcare)**
  - Healthcare treatment and care support services for home-based clients (including children, youths, adults, & seniors)
  - Personal and psychosocial support services for home-based clients (including children, youths, adults and seniors)
  - Rations and meal services for home-based clients
  - Home-based behavioural intervention service

"Care Corner is presently exploring an automated and blended triaging system, leveraging on chatbots, live agents and Robotic Process Automation (RPA), to ensure timely help, intervention and follow-up for persons seeking help, including but not limited to, mental health and counselling, and especially outside of working hours. The automated and blended triaging system in our roadmap will feature chatbots like the InsightersBOT, along with others in different channels of communication such as our website and other social media or chat platforms, that we expect people seeking help to use. The final form of these bots may be different from the current version of InsightersBOT as we continue to evolve and refine the way we engage help seekers. This is expected to be a model which can be readily adopted by other SSAs."

Mr Thomas Tan
Head (IT and Digitalisation)
Care Corner
Centre-based and Institution-based Services (Healthcare and Non-Healthcare)

**ENTER**
- Access to Service
  - Payment Solutions
    - E-payment, Online payment, Mobile payment
  - Tele-Consultation
    - Tele-medicine and Tele-health

**ENGAGE**
- Delivery of Service
  - User Feedback Solutions
    - Online survey tools, Community feedback tools
  - Chatbots
    - Appointment booking, E-resources, Service enquiry, Text therapy

**EMPOWER**
- Transition out of Service
  - Digital Identity-Enabled Solutions
    - Self check-in and check-out, Enrolment for programmes, Face recognition dispensary

Disability Support Services (Children, Youths, Adults and Seniors)

**ENTER**
- Access to Service
  - Payment Solutions
    - E-payment, Online payment, Mobile payment
  - Tele-Consultation
    - Case management, Client engagement and training

**ENGAGE**
- Delivery of Service
  - User Feedback Solutions
    - Online survey tools, Community feedback tools
  - Chatbots
    - Appointment booking, E-resources, Service enquiry, Text therapy

**EMPOWER**
- Transition out of Service
  - Digital Identity-Enabled Solutions
    - Self check-in and check-out, Enrolment for programmes, Face recognition dispensary

Technologies are non-exhaustive and not illustrated in sequence of adoption. Prioritise adoption of technologies based on organisational needs. Refer to Appendix for definition of technologies.
Mobile and Home-based services (Healthcare and Non-Healthcare)

ENTER
Access to Service

Payment Solutions
- E-payments, Online payment, Mobile payment

Tele-Consultation
- Tele-medicine and Tele-health

Engage
Delivery of Service

User Feedback Solutions
- Online survey tools, Community feedback tools

Adaptive Technology
- Augmentative and alternative communication devices
- Computing alternatives

Artificial Intelligence Technology and Applications
- Digital mental health apps (e.g., for caregivers and support groups)

Chatbots
- Appointment booking, E-resources, Service enquiry, Text therapy

Digital Identity-Enabled Solutions
- Self-registration, Self-scheduling, Sensor technology, Voice-recognition technology

Digital Identity-Enabled Solutions
- Self-service resource allocation (e.g., vending machine for food ration)

Social Listening Tool & Sentiment Analytics

EMPOWER
Transition out of Service

Rehabilitation, Reintegration and Support Services (Mental Health, Addiction and Reformed Offenders)

ENTER
Access to Service

Payment Solutions
- Online, cashless payment options

Tele-Consultation
- E-counselling, Tele-medicine, Tele-therapy

Engage
Delivery of Service

User Feedback Solutions
- Online survey tools, Community feedback tools

Artificial Intelligence Technology and Applications
- Digital mental health apps (e.g., for caregivers and support groups)
- Apps for mood tracking

Chatbots
- Digital CBT Programmes, Text Therapy

Digital Identity-Enabled Solutions
- Self-registration, Self-scheduling, Sensor technology, Voice-recognition technology

Internet of Things (IoT)-Enabled Health and Wellness Monitoring
- Activities and vital signs trackers

Learning Management & Gamification
- Digital learning platforms, Counselling gamification

Service User-Volunteer Matching Solutions

EMPOWER
Transition out of Service

Social Listening Tool & Sentiment Analytics

Technologies are non-exhaustive and not illustrated in sequence of adoption. Prioritise adoption of technologies based on organisational needs. Refer to Appendix for definition of technologies.
Support Services for Community and Family Integration including Caregivers

- **ENTER**
  - Access to Service
  - Payment Solutions
    - E-payment, Online payment, Mobile payment
  - User Feedback Solutions
    - Online survey tools, Community feedback tools
  - Chatbots
    - Text-therapy, e-Resources
  - Digital Identity-Enabled Solutions
    - Self check-in and check-out, Enrolment for programmes, Face recognition dispensary

- **ENGAGE**
  - Delivery of Service
  - Tele-Consultation
    - Tele-medicine and Tele-health
  - Artificial Intelligence Technology and Applications
    - Digital mental health apps (e.g. for caregiver and support groups)
  - Internet of Things (IoT)-Enabled Health and Wellness Monitoring
    - Activities and vital signs trackers
  - Learning Management & Gamification
    - Digital learning platforms, Immersive learning tools, wellness programmes, social and recreational activities
  - Service User-Volunteer Matching Solutions

- **EMPOWER**
  - Transition out of Service
  - Social Listening Tool & Sentiment Analytics

Technologies are non-exhaustive and not illustrated in sequence of adoption. Prioritise adoption of technologies based on organisational needs. Refer to Appendix for definition of technologies.
Chapter 5: Developing Sector Connectivity

Social Service Connectivity

The aspiration of a connected sector is one where information flows to where it is needed, can be accessed legitimately and safely, and provides insights into new opportunities. It will enable targeting of services to meet needs, enhancement of resource allocation and planning, and generation of insights to improve as the environment evolves and needs change.

Benefits of Sector Connectivity

1. Convenience of One Stop Service Access
2. Holistic View of Service Users
3. Resource Optimisation and Service Planning
4. Insights-Driven Delivery
5. Integrated Services

The effort to create common platforms and exchange data is ongoing. SSAs can already tap on some of them, while other initiatives will be rolled out in a phased manner. Aside from systems and data, it is important for SSAs and ecosystem partners to come together to share good ideas and best practices, explore collaborations, and pilot person-centred services.
Chapter 6: Get Started Today

Get Started Today in 3 Simple Steps!

1 | Are you ready?
Assess your agency’s accomplishments and opportunities to guide your digitalisation journey by completing the SSA Digital Roadmap Assessment.

2 | What can you do?
Follow your own Digital Roadmap to transform in 5 Focus Areas to improve organisation effectiveness, supported by the Foundational Solutions Guide and Digital Skills Guide.

3 | Where can you get help?
Access the NCSS Tech-and-GO! Hub for information on digital solutions and funding programmes.
Refer to the subsequent Resource Pages for more details on existing tools and resources to help you in digitalising your organisation.

Scan the QR code now!
SSA Resources

For SSAs

Tech-and-GO! Hub (NCSS)
- SSA Digital Roadmap Assessment
- Start Digital for pre-scoped solutions
- Go Digital for large scale customised solutions
- Technical Advisory and Project Consultancy
- Cybersecurity and Data Protection Consultancy
- Data Management Guide for Social Services

Cybersecurity and Data Protection Guidelines
- Be Safe Online Handbook (CSA)
- Cybersecurity Essentials for Social Services
- Data Protection Advisory Guidelines for the Social Service Sector (PDPC)

Manpower Support Scheme (NCSS)
- Sun Ray Programme

Training and Capability Building
- Leadership Development Programme (NCSS)
- MySkillsFuture (SSG)
- Social Service Institute (SSI)
- Social Innovation Starter Kit (NCSS)

Volunteer Resources (NCSS)
- Corporate Volunteerism Guide
- Partnering Organisations Towards a Lasting Impact on Social Service Users
- Volunteer Management System - Selection and Implementation Roadmap (VMS-SIR)

Food Connect (MSF)
- Directory - Submit details
- Database – Indicate interest

For Service Users

Access to Hardware and Connectivity (IMDA)
- Enable IT Programme
- Home Access Programme
- Neu PC Plus And Inspire Fund
- INSPIRE Fund
- Mobile Access for Seniors

Access to Social Services
- Social Service Navigator (NCSS)
- Food Connect Directory (MSF)

Digital Literacy Upskilling Programmes (IMDA)
- Digital for Life Programme
- Enable IT Programme
- Intergen IT Bootcamp
- Seniors Go Digital
  - Silver Infocomm Juncions

Digital Skills Programmes
- Seniors Go Digital (IMDA)
  - Silver Digital Creators
- People’s Association Senior Academy’s
  - Seniors for Smart Nation Programme
- SkillsFuture for Digital Workplace

Tech Assistance (IMDA)
- Tech Connect
Acknowledgements

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iGlobe Partners
Vice President, NCSS

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President & Chief Executive Officer
Singapore Institute of Management
Chairman, National Volunteer and Philanthropy Centre

NCSS would like to thank the following partners for their invaluable contribution to the Industry Digital Plan for Social Services

SSA Partners
Action For AIDS (Singapore)
ALIFE ltd
Alive Community Network
AMFSC Community Services Ltd
Asian Venture Philanthropy Network Limited
Association For Persons With Special Needs
Association Of Muslim Professionals
Babes Pregnancy Crisis Support Ltd
Barbey Community Care Services
Bethesda CARE Centre
Bless Community Services
Blossom Seeds Limited
Bone Marrow Donor Programme, The Boys’ Town
Brain Tumour Society (Singapore) Limited
Care Corner Singapore Ltd
Caring Fleet Services Limited
Catholic Family Life Limited
Centre For Elders
Cerebral Palsy Alliance Singapore
Christian Outreach to the Handicapped
Clarity Singapore Limited
Club HEAL
Counselling and Care Centre
Credit Counselling Singapore
Daughters of Tomorrow Limited
Down Syndrome Association (Singapore)
Eurasian Association, The
Federation of Youth Clubs, Singapore
Fei Yue Community Services
Fees, Weekly Employment Association (Singapore)
Gerontological Society
HCSA Community Services
Heartware Network
Home Nursing Foundation
HOPE Worldwide (Singapore)
I Love Children
Industrial and Services Co-operative Society Limited
Ja Ying Community Services Society
Kheng Chiu Loke Tin Kee Home
Lakeside Family Services
Law Society Pro Bono Services
Ling Kwang Home for Senior Citizens
Lions Befrienders Service Association (Singapore)
Lions Community Service Foundation (Singapore)
Loving Heart Multi Service Centre (Jurong)
Metropolitan Young Men’s Christian Association Of Singapore
Movement for the Intellegently Disabled of Singapore (MINDS)
Mountfort Care
Morning Star Community Services Ltd
Muhammadiyah Welfare Home
New Hope Community Services
New Life Community Services
Organisation Mondiale Pour l’Education Prescolaire Singapore
O’Joy Limited
PAVE
Persatuan Pembantu Ibu Singapore (PPIS)
Ramakrishna Mission, The
Realm of Tranquility
RSVP Singapore The Organisation of Senior Volunteers
Sathya Sai Social Service (Singapore)
Sree Narayana Mission (Singapore)
St Luke’s ElderCare Ltd
St. John’s Home For Elderly Persons
SUN-DAC
The Community Justice Centre Limited
The Food Bank Singapore Ltd
The Ray of Hope Initiative Limited
The Straits Times School Pocket Money Fund
Thye Hua Kwan Moral Charities Limited
Thye Hua Kwan Nursing Home Ltd
TOUCH Community Services Limited
Trybe Limited
United Indian Muslim Association
WE CARE Community Services Limited
Wicare Support Group
XiSer CareServe
Youth Guidance Outreach Services
Young Men’s Christian Association Of Singapore

Ecosystem Partners
Singapore Institute of Manufacturing Technology (SIMTech)
Agency for Science, Technology and Research (A*STAR)
ASCAN Marketing Services Pte Ltd
CrimsonLogic Pte Ltd
DBS Bank
Engineering Good
IBM
Lenovo Singapore
Ngee Ann Polytechnic
Republic Polytechnic
SEA Group
Singtel
ST Engineering
Visa

Singapore Anti-Narcotics Association
Singapore Association for Counselling
Singapore Buddhist Welfare Services
Singapore Cancer Society
Singapore Children’s Society
Singapore Council Of Women’s Organisations
Singapore Indian Development Association (SINDA)
Singapore Planned Families Association
Society for WINGS
Society of Sheng Hong Welfare Services
Society for the Promotion of Attention Deficit Hyperactivity Disorder Research and Knowledge
SPD
Sree Narayana Mission (Singapore)
St Luke’s ElderCare Ltd
St. John’s Home For Elderly Persons
SUN-DAC
The Community Justice Centre Limited
The Food Bank Singapore Ltd
The Ray of Hope Initiative Limited
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Thye Hua Kwan Moral Charities Limited
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TOUCH Community Services Limited
Trybe Limited
United Indian Muslim Association
WE CARE Community Services Limited
Wicare Support Group
XiSer CareServe
Youth Guidance Outreach Services
Young Men’s Christian Association Of Singapore
Appendix: Digital Initiatives

Apart from key initiatives such as the Social Service Sector Strategic Thrusts (4ST), The Invictus Fund (TIF) and the Beyond COVID-19 Taskforce (BCTF), the following digital initiatives have been rolled out over 2017 to 2021 to help SSAs put digitalisation and technology at the core of their work.

<table>
<thead>
<tr>
<th>Initiatives</th>
<th>Background Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bite-size Projects</td>
<td>Bite-size Project aims to identify processes to be re-designed and/or automated, to enhance productivity and improve service delivery with the help of appointed consultants. Six pre-determined categories were made available, namely: Client Empowerment, Community Resources, Device or Technology Enabler, Financial Processes, Process Improvement, and Utilisation of Space. 36 projects with 33 SSAs were carried out through this initiative.</td>
</tr>
<tr>
<td>Ka-Ching</td>
<td>Ka-Ching was developed by NCSS-appointed consultant, Empact, in collaboration with fifteen SSAs of different profiles serving various sub-sectors. It is a donation tracking tool that automates and streamlines back-end donation tracking processes to reduce duplication of work. Through Ka-Ching, agencies can better track and process donations thanks to the smart tool that reduces duplicate data entries and generates more accurate donation reports. Agencies can also offer that special touch to their donors by creating customisable receipts and thank you letters. A total of 61 agencies benefitted from the project with average 49% of productivity gains.</td>
</tr>
<tr>
<td>DonateNow!</td>
<td>A fully-funded initiative by NCSS to help SSAs automate their donation collection process. This allows the agencies to harness the power and convenience of technology to increase productivity through 1-For-1 Matching, fully funded workshops and exclusive discounts from technology vendors. A total of 70 agencies benefitted from the project and achieved average 84% of productivity gains.</td>
</tr>
<tr>
<td>Social Service Navigator</td>
<td>The Social Service Navigator is an ongoing effort to gather data on social services in Singapore. It aims to help social service professionals and the public to identify relevant services to meet needs, potential service gaps and partners for collaboration.</td>
</tr>
<tr>
<td>iShine Cloud</td>
<td>iShine Cloud Limited is a charity set up by Singapore Pools and supported by the National Council of Social Service (NCSS) to provide other charities with an affordable and integrated suite of charity-specific solutions via a secure cloud-based IT platform. Leveraging on the IT infrastructure as well as resources from Singapore Pools, iShine Cloud aims to improve the productivity, governance and efficiency of operations of charities, thus enabling them to focus on serving their beneficiaries better. iShine Cloud services are open to any charities regardless of their sector and size.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initiatives</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Back-to-Basics</td>
<td>Back-to-Basics aims to support professionals currently in the sector to serve clients better and faster, through targeted funding for Speech Therapists, Physiotherapists and Occupational Therapists, Social Workers (SW) and Youth Workers (YW). The multi-year project comprises a fully-funded consultancy, and technology adoption subsidies. It aims to increase existing professionals’ capacity and capability by streamlining processes, redesigning jobs and technology adoption, to free up time for serving more clients instead of handling administrative tasks. The professionals can have higher job satisfaction and perform upgraded functions that better use their professional skills and knowledge.</td>
</tr>
<tr>
<td>Tech Booster</td>
<td>Tech Booster aims to ramp up adoption of ready technologies for manpower-intensive programmes at Adult Disability Homes, Day Activity Centres, Welfare Homes and Voluntary Children's Homes. The initiative enables existing care workers to provide better service to more clients in shorter time, raise staff morale and retention, and increase client centricity. Care worker’s roles can also be upgraded to attract more Singaporeans to take up these jobs. Ready technologies include products and services, such as video analytics solutions that can predict behaviour, intelligent monitoring sensors, robotic technology with human-like cleaning robots, and an AI-enabled assistant with voice recognition technology. These innovative solutions can reduce up to 30% time spent by care workers.</td>
</tr>
<tr>
<td>Tech-and-GO!</td>
<td>Tech-and-GO! is a one-stop tech hub to support SSAs on their digitalisation journey. This initiative includes funding to defray the cost of technology adoption of systems and solutions, as well as support through advisory and consultancy. Agencies can search for suitable IT solutions by tapping on pre-scoped IT solutions that have been assessed to be effective and affordable. The advisory and consultancy offering can also guide SSAs on what digitalisation project or resources are most suitable, relevant technology that are out there in the market, and on how to start a digitalisation project.</td>
</tr>
</tbody>
</table>
## Appendix: Foundational Solutions Definitions

<table>
<thead>
<tr>
<th>Technology Name</th>
<th>Technology Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting System</td>
<td>A system that helps the organisation collect, store and process financial information and produce informational reports for management decisions. It helps organisations automate manual accounting tasks and provide a consolidated overview of the financial activities.</td>
</tr>
<tr>
<td>Antivirus Solutions</td>
<td>A software used to safeguard individual users' machines from malware, cyber threats and suspicious activities.</td>
</tr>
<tr>
<td>Centre Management</td>
<td>A system to automate and simplify centre operations such as temperature taking, attendance taking, client progress tracking, communication with caregivers / families about client's progress, etc. It can also be integrated with Finance and HR system for end-to-end automation.</td>
</tr>
<tr>
<td>Client / Case Management</td>
<td>A system to record, monitor and analyse the processing of clients’ cases. The system provides a complete view of client cases, ensure effective collaboration and enhances visibility and reporting.</td>
</tr>
<tr>
<td>Collaboration Tools</td>
<td>Solutions that can help staff work remotely but still collaborate actively both within the team. Essential documents are organised and stored within the same platform, thus making the search and retrieval of information much more efficient. Staff can also share and work on the same documents together via the platform.</td>
</tr>
<tr>
<td>Document Management</td>
<td>Provides a centralised platform to capture, track, manage, store and retrieve electronic documents (e.g. PDFs, word processing files) in a systematic and secured approach. It facilitates the ease of access and sharing of real-time information within an organisation and collaboration with external parties in a systematic approach.</td>
</tr>
<tr>
<td>Donor Management</td>
<td>A system with a database of donor information, tracks donations, communicates and maximises relationships with donors. The system provides a complete view of donor information, ensure effective collaboration and enhances visibility and reporting.</td>
</tr>
<tr>
<td>Encryption Tools</td>
<td>A tool to secure digital data using one or more mathematical techniques and a password or &quot;key&quot; used to decrypt the information.</td>
</tr>
<tr>
<td>Firewalls</td>
<td>A software that helps protect the backend infrastructure from potential security threats through the consolidation of an organisation’s multiple security and networking functionals.</td>
</tr>
<tr>
<td>Human Resource Management System</td>
<td>A system that integrates various aspects of manpower and resources planning, training, succession planning and staff headcount to streamline processes for a comprehensive overview of the profile, performance, job scope, schedule of all employees in an organisation.</td>
</tr>
<tr>
<td>Identity and Access Management</td>
<td>Technologies such as single sign-on systems, two-factor authentication, multifactor authentication, and user access control to critical information within organisations, securely store identity and profile data, and provide data governance functions.</td>
</tr>
<tr>
<td>Management and Funder Reporting (Automated)</td>
<td>Tools used to generate reports from datasets to make business decisions, and monitor the progress of different business segments.</td>
</tr>
<tr>
<td>Office Productivity Solutions</td>
<td>An enterprise suite of cloud computing, productivity and collaboration tools, software and products.</td>
</tr>
<tr>
<td>Video Conferencing</td>
<td>A software that enables online communication for audio meetings, video meetings, and seminars, with built-in features such as chat, screen sharing, and recording.</td>
</tr>
<tr>
<td>Virtual Private Networks (VPNs)</td>
<td>A service that creates a safe, encrypted online connection by extending a private network across a public network allows users to securely send and receive data across the internet.</td>
</tr>
<tr>
<td>Volunteer Management</td>
<td>A system to store volunteer information, and recruit, schedule, manage and communicate with volunteers. The system provides a complete view of volunteer information, ensure effective collaboration and enhances visibility and reporting.</td>
</tr>
<tr>
<td>Website</td>
<td>A set of related web pages located under a single domain name.</td>
</tr>
</tbody>
</table>
## Appendix: Service Delivery Technology Definitions

<table>
<thead>
<tr>
<th>Technology Name</th>
<th>Technology Description</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Activities of Daily Living & Rehabilitation Technology | - Solutions to help service users on personal care (hygiene and grooming), physical functions (feeding, dressing, toileting), functional mobility (access and transferring), community integration, communication and social interaction, home maintenance.                                                                                                                                       | - AR / VR Technology  
- Electronic Mobility Aids  
- Digital tools for Health Management e.g. Mobile Medication Apps, SMART Medication Systems                                                                                                           |
| Artificial Intelligence (AI) Technology and Applications | - Artificial Intelligence (AI) Technology and Applications generate better insights to deliver service in a prompt, accurate and effective manner through optimised processes and integrated systems.                                                                                                                                                                               | - Digital mental health apps  
- Digital health apps  
- Virtual counselling apps  
- Virtual support groups                                                                                                                                                                                                                     |
| Assistive and Adaptive Technology                    | - Assistive and Adaptive technology help people with disabilities improve their functional abilities by compensating for their disabilities or augment their remaining abilities. These technologies are designed with the aim to help them perform their daily activities with as much ease and independence as possible.                                                                 | - Augmentative & alternative communication devices  
- Computing alternatives  
- Home modifications e.g. SMART Home Control, Voice Command Systems  
- Technologies for feeding issues  
- Technologies for visually and hearing impaired  
- Vehicular modifications                                                                                                                        |
| Chatbots                                             | - Chatbots placed on web pages to address basic customer support inquiries at any time of day.  
- Chatbots leverage AI and machine learning to understand the fundamentals behind a company’s product or service.                                                                                                                                                                      | - Appointment scheduling or booking bots  
- Customer support chatbots  
- e-Resources  
- Hybrid models  
- Keyword recognition-based chatbots  
- Machine learning chatbots  
- Menu/button-based chatbots  
- Rule-based chatbots  
- Text-therapy  
- Voice bots                                                                                                                                                                                                 |
Appendix: **Service Delivery Technology Definitions**

<table>
<thead>
<tr>
<th>Technology Name</th>
<th>Technology Description</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Robots for Care, Education, Cleaning                 | • Social robots can launch the educational app, take attendance and temperature, engage users through singing, storytelling and dance to enhance educational settings. Autonomous Cleaning Robots to support new hygiene standards and reduce the risk of disease transmission etc.  
• Automatic Guided Vehicles that use computer technology to navigate through facilities to deliver products and items within the facility from single to multiple floor buildings e.g. meals delivery with residential facility  
• Personal robots that can support care delivery through the delivery of items, monitoring within the facility or telecommunication purpose | • Autonomous Cleaning Robots  
• Automatic Guided Vehicles  
• Robotics for learning and therapy interventions  
• Social and Personal Robots                                                                                                                                                                                                                           |
| Service User-Volunteer Matching Solutions            | • Matching Caregivers / Volunteers to suitable service users based on their skillsets, availability and preferences for prompt and effective support                                                                                                                                                                                                                  | • Facilitates volunteer recruitment from application to onboarding  
• Manage volunteer retention and engagement  
• Volunteer scheduling for rostering and allocation of volunteer tasks                                                                                                                                                                                     |
| Social Listening Tool and Sentiments Analytics       | • Social listening tool refers to analysing the conversations and trends happening around your organisation and the industry as a whole  
• Sentiment Analytics uses natural language processing, text analysis, computational linguistics, and biometrics to systematically identify, extract, quantify, and study affective states and subjective information  | • Brand monitoring  
• Customer support analysis  
• Customer feedback analysis  
• Market research  
• Social Listening Tools  
• Social media monitoring  
• Visual Feedback Tools  
• Voice of the Customer Tools (VoC)                                                                                                                                                                                                               |
| Tele-Consultation                                     | • Remote consultation and / or interactions between a social service worker and service user to provide diagnostic or therapeutic advice through electronic means  
• User Feedback software creates online surveys for data collection, reporting and decision-making | • Tele-medicine  
• Tele-health  
• Tele-rehab  
• Video consultation augmented with wearables  
• Community Feedback tools  
• Digital Focus Groups  
• Online Survey Tools  
• Online Review Tools  
• User Testing Tools                                                                                                                                                                                                                                 |

Appendix: **Resources to Progress in the Digital Roadmap**

**Steps** | **Resources and Tactics**
---|---
**Secure, Integrated Solutions and Infrastructure**

1a. Review processes and implement foundational and integration-ready solutions
   - i. Complete SSA Digital Roadmap Assessment to identify current gaps
   - ii. Undertake human centred design training under the Digital Skills Guide [Chapter 3]
   - iii. Review and streamline current processes based on business needs and priorities
   - iv. Identify and evaluate relevant technology solutions and vendors
   - v. Measure and track user satisfaction for all solutions implemented
   - vi. Contact NCSS Tech-and-GO! Hub [Chapter 6]:  
     - Technical advisory/consultancy
     - Digital solutions
     - Funding support
     - TechUP Friday/ Tech Demo

1b. Adhere to cybersecurity and data protection baseline requirements
   - i. Develop cybersecurity, data protection and IT security policies that comply with established guidelines, by leveraging on sample templates by NCSS
   - ii. Refer to respective guidelines  
     - Cybersecurity Agency of Singapore (CSA) Website
     - Personal Data Protection Commission (PDPC) Website
   - iii. Contact NCSS Tech-and-GO! Hub [Chapter 6]:  
     - Cybersecurity Consultancy
     - Data Protection Consultancy
     - Cybersecurity solutions
     - Funding support

1c. Conduct cybersecurity, data and IT risk assessments
   - i. Ensure cybersecurity, data and IT risks are included in the agency’s Enterprise Risk Management (ERM) framework
   - ii. Conduct regular risk assessments to identify gaps and corresponding mitigating measures
   - iii. Implement mitigating actions
   - iv. Conduct testing to ensure effectiveness and compliance
   - v. Contact NCSS Tech-and-GO! Hub [Chapter 6]:  
     - Technical advisory/consultancy
     - Cybersecurity Consultancy
     - Data Protection Consultancy
     - Cybersecurity solutions
     - Funding support

**Foundation** | **Intermediate** | **Advanced**
## Appendix: Resources to Progress in the Digital Roadmap

### Secure, Integrated Solutions and Infrastructure

<table>
<thead>
<tr>
<th>Steps</th>
<th>Resources and Tactics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1d</td>
<td>Develop an IT incident response and recovery plan</td>
</tr>
<tr>
<td></td>
<td>i. Set up an IT incident response and recovery team and define roles and responsibilities</td>
</tr>
<tr>
<td></td>
<td>ii. Define what constitutes a data incident (e.g. Malware, phishing, distributed denial of service, ransomware, data breach and corruption)</td>
</tr>
<tr>
<td></td>
<td>iii. Define IT incident response and assessment procedures to contain breach</td>
</tr>
<tr>
<td></td>
<td>iv. Develop matrix to assess risk and impact of data incident</td>
</tr>
<tr>
<td></td>
<td>v. Define IT incident reporting procedures</td>
</tr>
<tr>
<td></td>
<td>vi. Evaluate response to incident and review actions taken to prevent further data incidents</td>
</tr>
<tr>
<td></td>
<td>vii. Develop a IT inventory map, data flow diagram and risk assessment report for the IT incident response and recovery plan</td>
</tr>
<tr>
<td></td>
<td>viii. Attend cyber and data incident breach management training under the Digital Skills Guide [Chapter 3]</td>
</tr>
<tr>
<td>2a</td>
<td>Integrate new and existing systems</td>
</tr>
<tr>
<td></td>
<td>i. Identify benefits of integration e.g. productivity increase, fewer errors, data consistency</td>
</tr>
<tr>
<td></td>
<td>ii. Prioritise need and implement integration solutions</td>
</tr>
<tr>
<td></td>
<td>iii. Contact NCSS Tech-and-GO! Hub [Chapter 6]:</td>
</tr>
<tr>
<td></td>
<td>- Technical advisory/consultancy</td>
</tr>
<tr>
<td></td>
<td>- Digital solutions</td>
</tr>
<tr>
<td></td>
<td>- Funding support</td>
</tr>
<tr>
<td></td>
<td>- TechUP Friday! Tech Demo</td>
</tr>
<tr>
<td>2b</td>
<td>Conduct regular cybersecurity, data protection and IT audits</td>
</tr>
<tr>
<td></td>
<td>i. Assess current level of cybersecurity and data protection compliance and identify compliance gaps</td>
</tr>
<tr>
<td></td>
<td>ii. Review encryption and cybersecurity management tools on all devices</td>
</tr>
<tr>
<td></td>
<td>iii. Review access management controls and policies to set up-to-date user access privileges</td>
</tr>
<tr>
<td></td>
<td>iv. Assess third-party risk management and compliance efforts</td>
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<tr>
<td></td>
<td>v. Engage vendors to perform regular audits on their IT systems</td>
</tr>
<tr>
<td>3a</td>
<td>Adopt business process monitoring solutions to uncover process improvements opportunities</td>
</tr>
<tr>
<td></td>
<td>i. Identify important business processes that are candidates for continuous improvement efforts</td>
</tr>
<tr>
<td></td>
<td>ii. Define intermediate and outcome metrics that will measure the efficiency of these processes</td>
</tr>
<tr>
<td></td>
<td>iii. Adopt a business process monitoring tool/solution that can easily and consistently monitor the performance of these processes to identify successes and problems</td>
</tr>
<tr>
<td></td>
<td>iv. Contact NCSS Tech-and-GO! Hub [Chapter 6]:</td>
</tr>
<tr>
<td></td>
<td>- Technical advisory/consultancy</td>
</tr>
<tr>
<td></td>
<td>- Digital solutions</td>
</tr>
<tr>
<td></td>
<td>- Funding support</td>
</tr>
<tr>
<td></td>
<td>- TechUP Friday! Tech Demo</td>
</tr>
</tbody>
</table>

### Enhanced Service User Experience

<table>
<thead>
<tr>
<th>Steps</th>
<th>Resources and Tactics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Streamline processes and implement foundational service delivery technology</td>
</tr>
<tr>
<td></td>
<td>i. Develop a clear understanding of what service users value and link it to the goals for streamlining processes</td>
</tr>
<tr>
<td></td>
<td>ii. Identify suitable foundational service user technologies in the Service Delivery Technology Guide [Chapter 4] to streamline or automate processes in line with what service users value throughout the service user journey</td>
</tr>
<tr>
<td></td>
<td>iii. Undergo human-centred design training under the Digital Skills Guide [Chapter 3]</td>
</tr>
<tr>
<td></td>
<td>iv. Upskill the digital literacy of service users and caregivers by referring them to Digital Literacy Upskilling Programmes [Chapter 6] so that they can access digital social services</td>
</tr>
<tr>
<td></td>
<td>v. Measure and track user satisfaction for all solutions implemented</td>
</tr>
<tr>
<td></td>
<td>vi. Contact NCSS Tech-and-GO! Hub [Chapter 6]:</td>
</tr>
<tr>
<td></td>
<td>- Technical advisory/consultancy</td>
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<td>- Funding support</td>
</tr>
<tr>
<td></td>
<td>- TechUP Friday! Tech Demo</td>
</tr>
<tr>
<td>1b</td>
<td>Capture relevant data on service users and service delivery within each agency programme</td>
</tr>
<tr>
<td></td>
<td>i. Capture relevant holistic data of service users</td>
</tr>
<tr>
<td></td>
<td>ii. Capture data pertaining to the delivery of services over time</td>
</tr>
<tr>
<td></td>
<td>iii. Organise a service user’s data into a holistic view so that SSA staff can use it to better plan and deliver services to the service user</td>
</tr>
<tr>
<td>2a</td>
<td>Enhance processes and implement advanced service delivery technology</td>
</tr>
<tr>
<td></td>
<td>i. Identify suitable advanced service user technologies in the Service Delivery Technology Guide [Chapter 4] to streamline or automate processes in line with what service users value throughout the service user journey</td>
</tr>
<tr>
<td></td>
<td>ii. Measure and track user satisfaction for all solutions implemented</td>
</tr>
<tr>
<td></td>
<td>iii. Contact NCSS Tech-and-GO! Hub [Chapter 6]:</td>
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<td>- Funding support</td>
</tr>
<tr>
<td></td>
<td>- TechUP Friday! Tech Demo</td>
</tr>
<tr>
<td>2b</td>
<td>Enable a holistic view of service users within the organisation</td>
</tr>
<tr>
<td></td>
<td>i. Assign dedicated employees to capture, consolidate, analyse and share service user data in a structured manner across the SSA organisation</td>
</tr>
<tr>
<td></td>
<td>ii. Ensure that systems and processes consider the various programme touchpoints with the service users</td>
</tr>
<tr>
<td></td>
<td>iii. Consolidate all programme-related data for each service user within the organisation by leveraging data from various programme touchpoints</td>
</tr>
<tr>
<td>2c</td>
<td>Derive insights through analysis of service user data to enhance the service user journey</td>
</tr>
<tr>
<td></td>
<td>i. Analyse data collected in 1b / 2b to generate insights for better service delivery and planning, e.g. some service delivery methods might yield better outcomes for service users in certain circumstances</td>
</tr>
</tbody>
</table>
### Appendix: Resources to Progress in the Digital Roadmap

#### Enhanced Service User Experience

<table>
<thead>
<tr>
<th>Steps</th>
<th>Resources and Tactics</th>
</tr>
</thead>
<tbody>
<tr>
<td>3a</td>
<td>Apply human-centred design methodology to improve service for service users</td>
</tr>
<tr>
<td></td>
<td>i. Apply techniques such as personas/archetype definition and service journey mapping to understand the needs of the service users</td>
</tr>
<tr>
<td></td>
<td>ii. Apply techniques such as ethnographic research to understand the real problems and gaps</td>
</tr>
<tr>
<td></td>
<td>iii. Apply techniques and tools such as brainstorming, concept development, mock-ups, wireframes to generate ideas for solution</td>
</tr>
<tr>
<td></td>
<td>iv. Apply prototyping and usability testing approaches to iteratively get to the desired solution</td>
</tr>
<tr>
<td>3b</td>
<td>Collaborate with other SSAs and ecosystem partners to deliver integrated services</td>
</tr>
<tr>
<td></td>
<td>i. Network with ecosystem players (e.g., Capabilities Circles, GatherHere, Giving.sg) and exchange ideas on digitalisation opportunities</td>
</tr>
<tr>
<td></td>
<td>ii. Identify SSAs delivering complementary services via Central Social Service Platforms [Chapter 5] (e.g., Social Service Navigator) and develop referral pathways to integrate services</td>
</tr>
</tbody>
</table>

#### Connected Community and Partnerships

<table>
<thead>
<tr>
<th>Steps</th>
<th>Resources and Tactics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Learn from peers and subject matter experts in the social service community</td>
</tr>
<tr>
<td></td>
<td>i. Submit stories and receive inspiration on digitalisation opportunities via user-friendly web-based storytelling platforms, virtual live platforms and Central Social Service Platforms [Chapter 5] e.g., Giving SG, SG Cares Digital Kampong</td>
</tr>
<tr>
<td></td>
<td>ii. Join Capabilities Circles to upskill and journey together in the digitalisation process, with members serving as digital guides or digital companions</td>
</tr>
<tr>
<td></td>
<td>iii. Participate in GatherHere to discuss challenges relating to digitalisation</td>
</tr>
<tr>
<td>1b</td>
<td>Collaborate with Corporates and Institutes of Higher Learning (IHLs) through CSR-related internships and digitalisation projects</td>
</tr>
<tr>
<td></td>
<td>i. Tap on ecosystem partners’ advanced digitalisation knowledge, resources, capabilities, tools and digital platforms to upskill the SSA’s digitalisation journey via IT Skilled Volunteerism</td>
</tr>
<tr>
<td></td>
<td>• Explore requirements with NCSS and receive support to be matched with suitable ecosystem partners</td>
</tr>
<tr>
<td></td>
<td>• Partner with ecosystem partners for 1-on-1 digitalisation support and capability building</td>
</tr>
<tr>
<td>1c</td>
<td>Leverage online platforms of ecosystem partners to access digital services, donations, payments etc.</td>
</tr>
<tr>
<td></td>
<td>i. Leverage on Central Social Service Platforms [Chapter 5] e.g., SG Cares Digital Kampong to enlist volunteers to support digitalisation efforts and capability building</td>
</tr>
<tr>
<td></td>
<td>ii. Leverage on Central Social Service Platforms [Chapter 5] by adopting IT systems that enable data integration features such as registration via SingPass and PayNow transactions.</td>
</tr>
<tr>
<td></td>
<td>iii. If there is interest to integrate SSA’s systems directly to Central Social Service Platforms [Chapter 5], refer to the SingPass Developer page or reach out to the SingPass engagement team for more information</td>
</tr>
<tr>
<td></td>
<td>iv. Register for PayNow Corporate with your chosen bank provider by providing your organisation’s UEN and following the relevant set up instructions</td>
</tr>
<tr>
<td>2a</td>
<td>Develop mid-to-long term ecosystem partnerships with commitment from partners to devote digitalisation resources to an SSA for a specific period of time</td>
</tr>
<tr>
<td></td>
<td>i. Receive support from NCSS to set up mid-to-long term digitalisation partnerships, internships, or work-secondments e.g., via IT Skilled Volunteerism where NCSS will match corporates who are interested to offer their IT expertise to SSAs</td>
</tr>
<tr>
<td></td>
<td>• Explore requirements with NCSS and receive support to be matched with suitable ecosystem partners</td>
</tr>
<tr>
<td></td>
<td>• Partner with ecosystem partners for 1-on-1 digitalisation support, capability building and workforce augmentation</td>
</tr>
<tr>
<td>3a</td>
<td>Connect with other SSAs with similar use cases and needs to explore and develop new technology solutions</td>
</tr>
<tr>
<td></td>
<td>i. Gather fellow SSA companions for your digital journey through a mixture of offline and online conversations in small targeted groups e.g., via Capabilities Circles and GatherHere</td>
</tr>
<tr>
<td></td>
<td>ii. Partner with other SSAs for digitalisation support, capability building, and co-development of SSA digital solutions with technology providers</td>
</tr>
</tbody>
</table>
## Appendix: Resources to Progress in the Digital Roadmap

### Data Proficiency

<table>
<thead>
<tr>
<th>Steps</th>
<th>Resources and Tactics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>Digitise data and centralise data repository</td>
</tr>
<tr>
<td>i Digitise hardcopy documents using scanning and Optical Character Recognition technology</td>
<td></td>
</tr>
<tr>
<td>ii Centralise and organise data with proper data structures and taxonomy to facilitate subsequent analysis</td>
<td></td>
</tr>
<tr>
<td>1b</td>
<td>Establish agency-wide data management policies and procedures</td>
</tr>
<tr>
<td>i Define data management policies and procedures across enterprise and digital data streams (e.g. social media, sensors, video), in relation to collection, storage, organisation and distribution</td>
<td></td>
</tr>
<tr>
<td>ii Refer to Data Management Guide for Social Services</td>
<td></td>
</tr>
<tr>
<td>2a</td>
<td>Utilise data discovery / visualisation tools to derive insights</td>
</tr>
<tr>
<td>i Clarify goals for use of data to inform data collection, storage and analysis, and accompanying change management</td>
<td></td>
</tr>
<tr>
<td>ii Embed data capabilities within organisation by encouraging staff to attend data upskilling courses under the Digital Skills Guide (Chapter 3) and SSA Resources (Chapter 6)</td>
<td></td>
</tr>
<tr>
<td>iii Provide access to data sets within your organisation, inter-SSA and ecosystem partners, subject to data protection policy. Use techniques such as data masking, tokenisation, aggregation where necessary</td>
<td></td>
</tr>
<tr>
<td>iv Enrich datasets and build visualisations to explore and communicate findings on service delivery</td>
<td></td>
</tr>
<tr>
<td>v Harness data to gain insights into service user outcomes and service operations, increase responsiveness, tailor services and better plan for the future</td>
<td></td>
</tr>
<tr>
<td>vi Contact NCSS Tech-and-GO! Hub (Chapter 6):</td>
<td></td>
</tr>
<tr>
<td>• Technical advisory/consultancy</td>
<td></td>
</tr>
<tr>
<td>2b</td>
<td>Develop a data strategy plan</td>
</tr>
<tr>
<td>i Obtain approvals and implement the data strategy</td>
<td></td>
</tr>
<tr>
<td>• Socialise data strategy plan with agency leadership and staff, and explore value proposition for initiatives</td>
<td></td>
</tr>
<tr>
<td>• Implement initiatives (e.g. build a data management team, assign governance roles)</td>
<td></td>
</tr>
<tr>
<td>ii Define the data strategy roadmap</td>
<td></td>
</tr>
<tr>
<td>• Define how data will help the agency meet its goals</td>
<td></td>
</tr>
<tr>
<td>• Plan for data management across the data lifecycle, including collection, storage, usage, sharing, and archival or disposal</td>
<td></td>
</tr>
<tr>
<td>• Identify datasets to be collected and point of origination</td>
<td></td>
</tr>
<tr>
<td>• Define initiatives for data strategy and establish a roadmap and milestones</td>
<td></td>
</tr>
<tr>
<td>• Define change management plan to support roll-out of data strategy</td>
<td></td>
</tr>
<tr>
<td>ii Contact NCSS Tech-and-GO! Hub (Chapter 6):</td>
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### Data Proficiency

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</tr>
</thead>
<tbody>
<tr>
<td>3a</td>
<td>Utilise advanced analytics to enhance service delivery and service planning</td>
</tr>
<tr>
<td>i Understand the service delivery process, define the timeline and concrete performance indicators</td>
<td></td>
</tr>
<tr>
<td>ii Obtain, explore and clean relevant data for service delivery from relevant data sources (e.g. databases, APIs, open data etc.), and ensure compliance with data privacy regulations</td>
<td></td>
</tr>
<tr>
<td>iii Utilise machine learning algorithms to derive at in-depth insights including impacted past trends and predict future trends in relation to service planning and delivery</td>
<td></td>
</tr>
<tr>
<td>iv Contact NCSS Tech-and-GO! Hub (Chapter 6):</td>
<td></td>
</tr>
<tr>
<td>• Technical Advisory</td>
<td></td>
</tr>
<tr>
<td>• Data Analytics Solutions Funding</td>
<td></td>
</tr>
<tr>
<td>3b</td>
<td>Support service integration and referrals by sharing data with other SSAs and ecosystem partners</td>
</tr>
<tr>
<td>i Connect with other complementary SSAs and ecosystem partners where there are service delivery synergies</td>
<td></td>
</tr>
<tr>
<td>ii Onboard to Central Social Service Platforms (Chapter 5) (e.g., One Client View (OneCV), Social Service Net (SSNet)) to share data on service users and facilitate referrals to relevant services</td>
<td></td>
</tr>
<tr>
<td>iii Ensure compliance with data privacy regulations</td>
<td></td>
</tr>
</tbody>
</table>
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<tr>
<th>Steps</th>
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</thead>
<tbody>
<tr>
<td><strong>Digital Talent and Leadership</strong></td>
<td></td>
</tr>
<tr>
<td>1a</td>
<td>Identify capabilities / competencies of Digital Leaders who can help orchestrate the digital transformation journey and drive fundamental business transformations</td>
</tr>
<tr>
<td></td>
<td>Formally appoint Digital Lead and/or Digitalisation sub-committee with Terms of Reference</td>
</tr>
<tr>
<td>1b</td>
<td>Leadership / management to lead by example in carrying out digital upskilling initiatives, e.g.</td>
</tr>
<tr>
<td></td>
<td>• Allocate time on their schedules to get themselves digitally upskilled</td>
</tr>
<tr>
<td></td>
<td>• Share their experience and digital upskilling stories</td>
</tr>
<tr>
<td></td>
<td>• Ensure managers allocate time for staff to get digitally upskilled</td>
</tr>
<tr>
<td></td>
<td>• Track and measure staff’s digital upskilling progress regularly</td>
</tr>
<tr>
<td></td>
<td>• Facilitate continuous learning and digital upskilling within the organisation</td>
</tr>
<tr>
<td></td>
<td>Undergo suitable Digital Skills training under the Digital Skills Guide [Chapter 3] according to job roles</td>
</tr>
<tr>
<td></td>
<td>Participate in available learning forums (e.g. TechUP Friday! Webinars, Capabilities Circle)</td>
</tr>
<tr>
<td>2a</td>
<td>Define the digital strategy roadmap and change management plan</td>
</tr>
<tr>
<td></td>
<td>• Define digitalisation vision for the agency</td>
</tr>
<tr>
<td></td>
<td>• Define initiatives for digital strategy and establish a roadmap and milestones for digital transformation</td>
</tr>
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<td>• Define change management plan to support roll-out of digital strategy</td>
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<td>Obtain approvals and implement the digital strategy</td>
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<td></td>
<td>• Socialise data strategy plan with agency leadership and staff, and explore financial justification for initiatives</td>
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<td>• Implement initiatives (e.g. build a data management team, assign governance roles)</td>
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</tr>
<tr>
<td>3a</td>
<td>Identify and encourage employees who can be change agents or ‘digital ambassadors’</td>
</tr>
<tr>
<td></td>
<td>Shift the focus from outcomes and traditional KPIs that can create resistance to culture transformation (e.g. reward implementation of digitalisation ideas)</td>
</tr>
<tr>
<td></td>
<td>Translate the broader digital vision into compelling and tangible organisation outcomes that employees can relate to, and feel accountable for</td>
</tr>
<tr>
<td></td>
<td>Leverage social networks to connect the bottom and top of the organisation</td>
</tr>
<tr>
<td></td>
<td>Commit to employees to help them reskill and reskill, and organise training for staff on digital transformation</td>
</tr>
<tr>
<td></td>
<td>Pilot digital projects, and provide incentives for digital and innovative projects</td>
</tr>
</tbody>
</table>