



NCSS
National Council
of Social Service



Industry Digital Plan for Social Services

2021 – 2024

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Foreword by Ms Janet Young

Chairperson
Industry Digital Plan for Social Services Advisory Panel



Digitalisation has changed the way we interact at work and in our personal lives. The COVID-19 pandemic has also put a spotlight on the way Social Service Agencies (SSAs) deliver their services – moving much of their engagements to virtual mode. In spite of challenges in the adoption of technology, the sector is also presented with opportunities to accelerate its digitalisation journey to improve the service delivery for the social service users, and in tandem with Singapore’s vision as a Smart Nation and the growth of the digital economy.

As most SSAs shift from a traditional high-touch service delivery to a technology-enabled service delivery mode, they are also faced with the difficulty of identifying and implementing these technologies. How do we incorporate high-tech with a human touch to better serve end-users? How do we work collaboratively as a sector and with our partners to determine service gaps and co-create solutions for better service delivery?

To address this, the Industry Digital Plan for Social Services (IDPSS) is developed as a collective effort by National Council of Social Service (NCSS), Ministry of Social and Family Development (MSF), the social service sector and an Advisory Panel to drive medium term digital transformation within the sector. It presents a blueprint for SSAs to assess and accelerate their digitalisation based on needs, digital readiness, and aspirations.

Over the past few months, NCSS led numerous workshops and in-depth interviews – bringing together SSAs of all sizes and from all subsectors – to gather inputs on their digitalisation aspirations and challenges. Their voices, and feedback from users of social service technology, are incorporated into the IDPSS which is designed for SSAs and will be delivered through them. At the heart of it, it aims to build an impactful sector, enabled by technology, to better empower service users through person-centred digital services.

While NCSS and MSF have taken the first steps in putting together a roadmap to guide digital transformation, it would take every agency, volunteer and individual to support the strategies laid out in the IDPSS. I invite all to join this journey as a community, to collectively build upon one another’s experience and success, so that we can continue to learn and refine the IDPSS. For those who have started, explore new areas listed in the plan, deepen your technology expertise, and share your knowledge. For those who have not, this IDPSS serves as a good guide to get started. Everyone can be an enabler to help improve the lives of our service users.

With this, my team and I have the pleasure and honour to present to you, the IDPSS. I thank everyone who contributed to make this a success.

“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



“Proper use of technology can help us improve the way we work and maximise the impact for service users.”

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. In other words, being more high-tech can allow us to be even more high-touch!

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.



From the three strategic directions, SSAs are guided to advance their digitalisation journey across the following five focus areas:

 <p>Secure, Integrated Solutions and Infrastructure</p> <p><i>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.</i></p> <p>Goal: 80% of SSAs adopt three or more foundational solutions</p>	 <p>Enhanced Service User Experience</p> <p><i>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.</i></p> <p>Goal: 80% of services are tech-enabled</p>	 <p>Connected Community and Partnerships</p> <p><i>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.</i></p> <p>Goal: 30 digital collaboration projects in people, private and public sectors</p>
 <p>Data Proficiency</p> <p><i>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.</i></p> <p>Goal: 30% of SSAs use data to enhance operations and service planning</p>		
 <p>Digital Talent and Leadership</p> <p><i>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.</i></p> <p>Goal: 80% of SSAs have staff capable of using technology</p>		

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



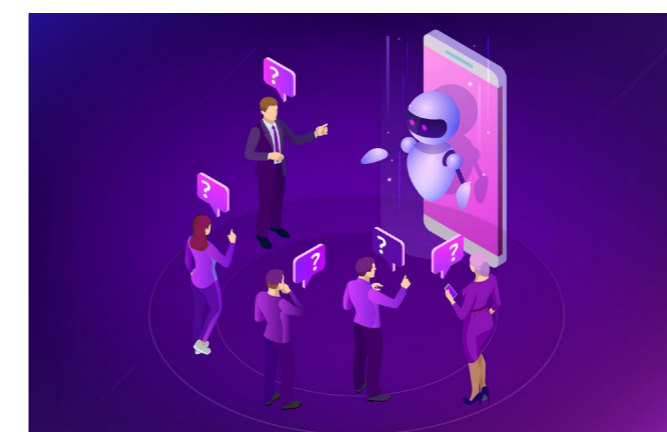
Improving Organisational Effectiveness

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



Increasing Demand and Complexity of Social Services

Service expectations and demands are rising from changing needs associated with Singapore's ageing, more diverse and educated population. Pandemics, such as COVID-19, further increase the complexity of social service delivery.



More Tech-savvy Service Users

More service users are turning towards the use of digital channels. This increases the expectations for more digital services.



Changing Social Service Workforce

Next-gen practitioners with diverse skillsets entering the social service sector workforce are raising digital capabilities, but at the same time creating tension with the existing workforce.



More Data Aggregation

Digitalisation leads to increasing data collection that can enhance service delivery and operations, but also raises concerns over data privacy.



Lack of Access to Technology for Those in Need of Most Support

Service users who need the most support often lack the technology, connectivity and digital literacy to access digital social services, which has become a more significant challenge due to the impacts of COVID-19.



More Partnerships between Private Sector and Social Services

Private sector companies are increasingly interested to collaborate with SSAs through corporate social responsibility engagements.

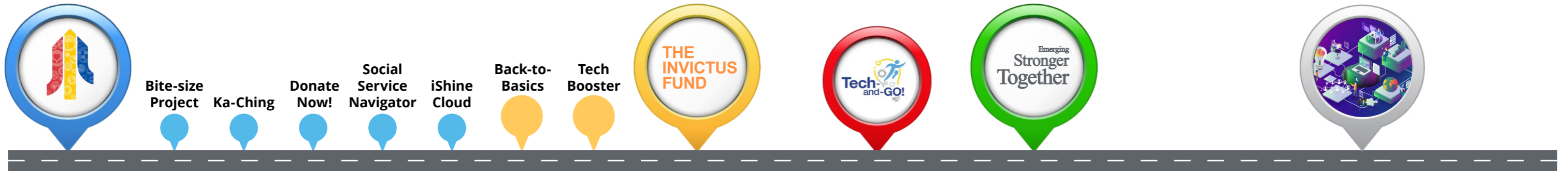
How SSAs Can Respond

- **Digitalisation of Social Services** will enable efficient and resilient operations and service delivery for the sector, improving productivity and enhancing user experiences.
- **Increase use of digital channels and services** to meet rising expectations of service users and to enhance accessibility.
- Upskill less tech-savvy employees to raise the **digital capability baseline**.
- Build a digital culture and mindset as part of **organisation DNA** to increase employees' collaboration on digital initiatives.
- **Build proficiency in data to** enhance service planning and operations.
- **Enhance data governance** to address key areas of **data privacy and protection**.
- **Enable service users** to access digital services through developing **digital literacy** and provision of resources.
- Collaborate with ecosystem partners and other SSAs to improve digital infrastructure and **close the digital gap**.
- **Proactively partner with the private sector** to enhance digital capabilities and leverage ecosystem partners' platforms for greater **digital outreach and service delivery**.

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, NCCS has developed the IDPSS to help SSAs put digitalisation and technology at the core of their work.



In 2017,

NCCS 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, NCCS 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.

Industry Digital Plan for Social Services

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)

As a first step, SSAs can take the DRA to tailor their own Digital Roadmap to guide their digitalisation journey and improve organisational effectiveness across 5 focus areas:



Take the SSA Digital Roadmap Assessment to determine your progress across the five focus areas!

1 | **Secure, Integrated Solutions and Infrastructure**

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

5 | **Digital Talent and Leadership**

Enhance digital skills of the social service workforce and leadership to drive digitalisation efforts

2 | **Enhanced Service User Experience**

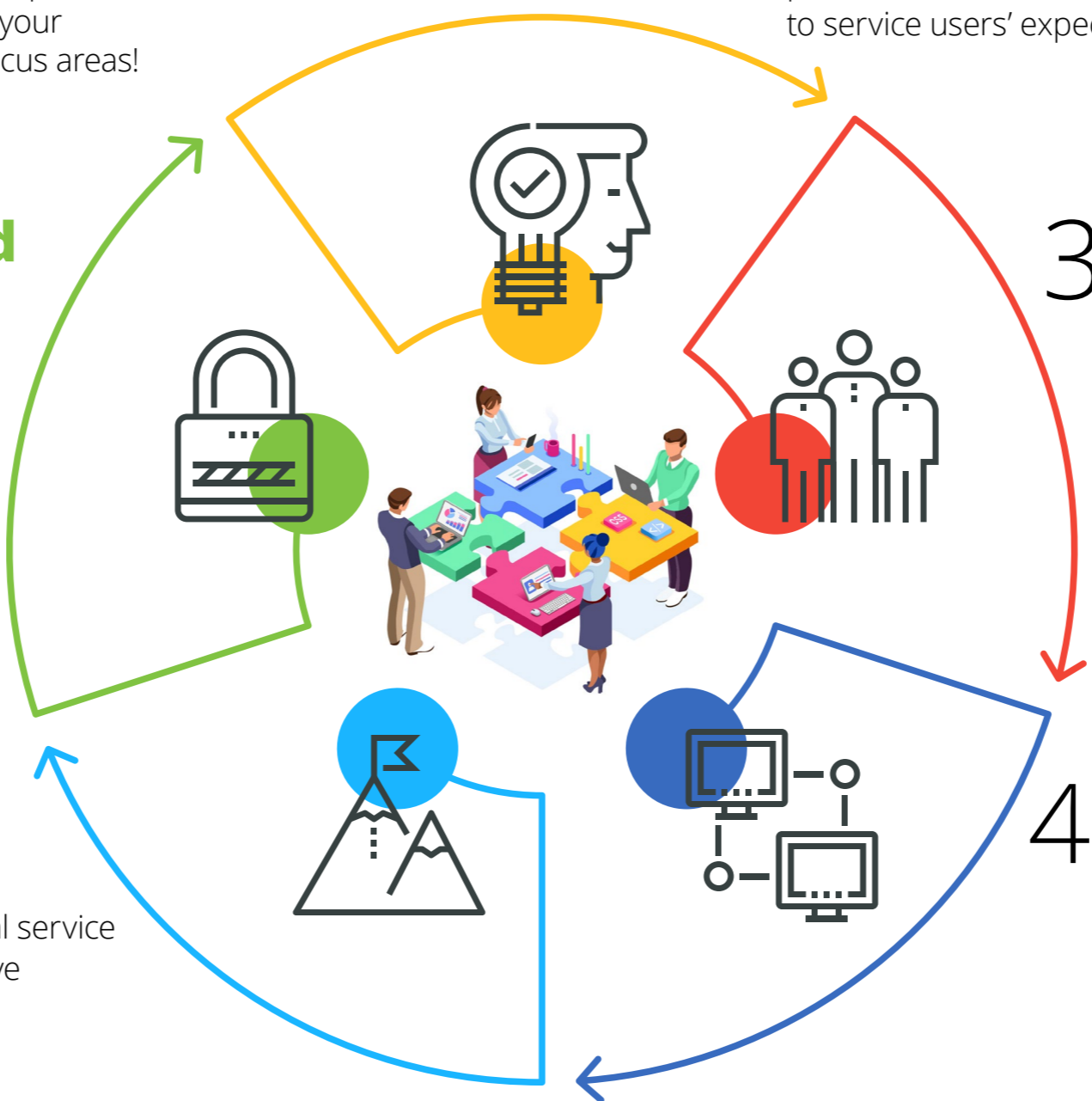
Adopt service delivery technology that enables person-centred and integrated services, and cater to service users' expectations and needs

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



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



"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

Take a Step Forward!



- 1 FOUNDATION**
 - A** Review processes and implement foundational and integration-ready solutions (*Refer to the next page for more details*)
 - B** Adhere to cybersecurity and data protection baseline requirements
 - C** Conduct cybersecurity risk, IT risk and data protection compliance assessments
 - D** Develop an IT incident response and recovery plan
- 2 INTERMEDIATE**
 - A** Integrate new and existing systems
 - B** Conduct regular cybersecurity, data protection and IT audits
- 3 ADVANCED**
 - A** Adopt business process monitoring solutions to uncover process improvement opportunities

"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



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

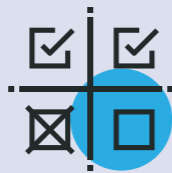
Below are foundational and integration-ready solutions to be implemented to help you achieve Foundation Stage (Stage 1) for Focus Area 1: Secure, Integrated Solutions and Infrastructure of the SSA digital roadmap

Office Productivity Systems

Systems and tools that improve corporate productivity and staff efficiency



Office Productivity Solutions



Document Management



Video Conferencing



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



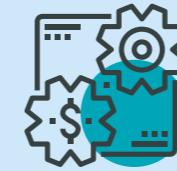
Website



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



Identity and Access Management



Firewalls



Antivirus Solutions



Encryption Tools



Virtual Private Networks (VPNs)

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



Strengthened Service Impact through Tech-Enabled Training Simulation and Rehabilitation



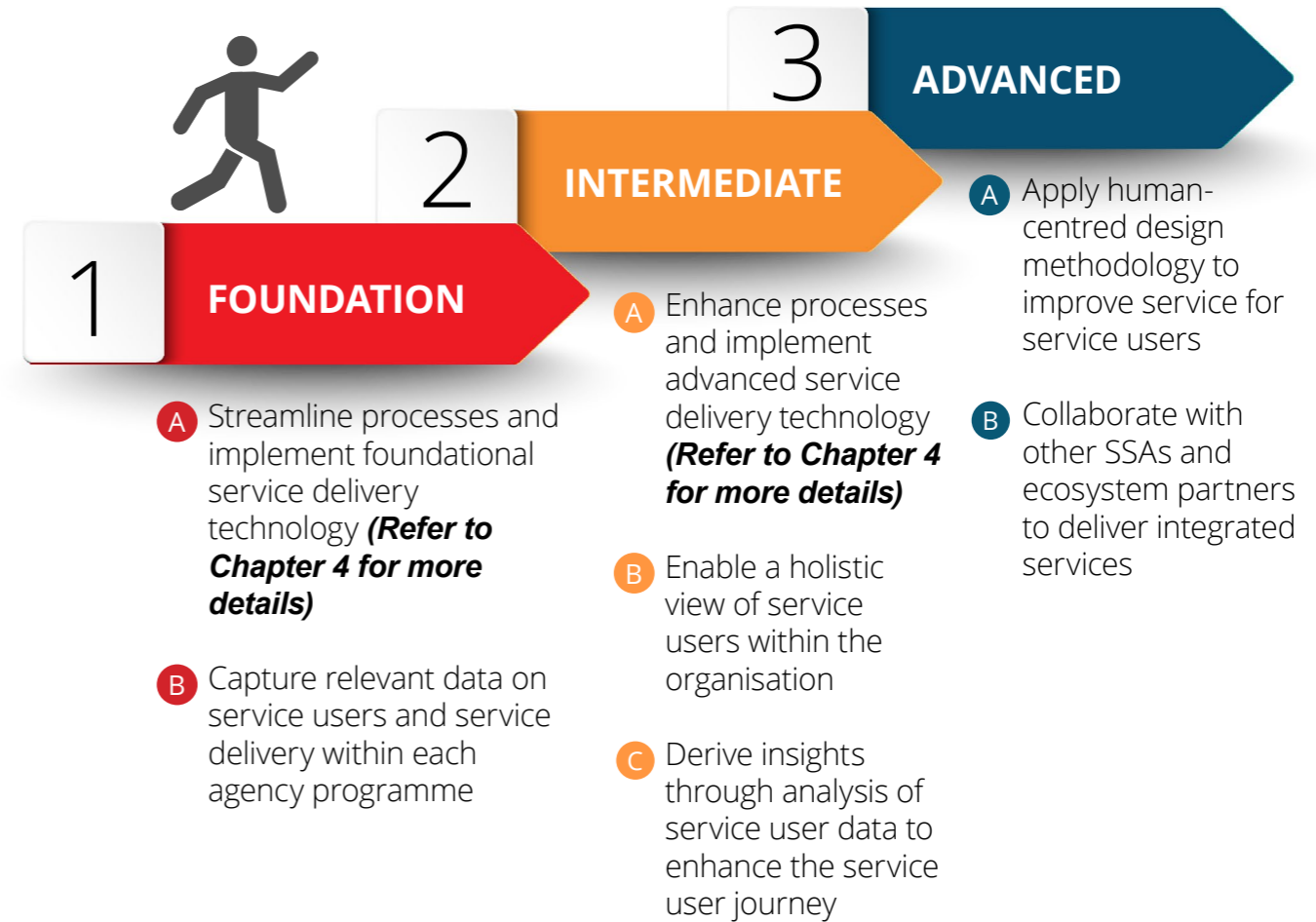
A trainee at the APSN Centre for Adults on the BTE PrimusRS functional rehabilitation system.

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 **viably employed** in the workforce.

Refer to Appendix for more detailed resources to progress in the digital roadmap

Take a Step Forward!



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



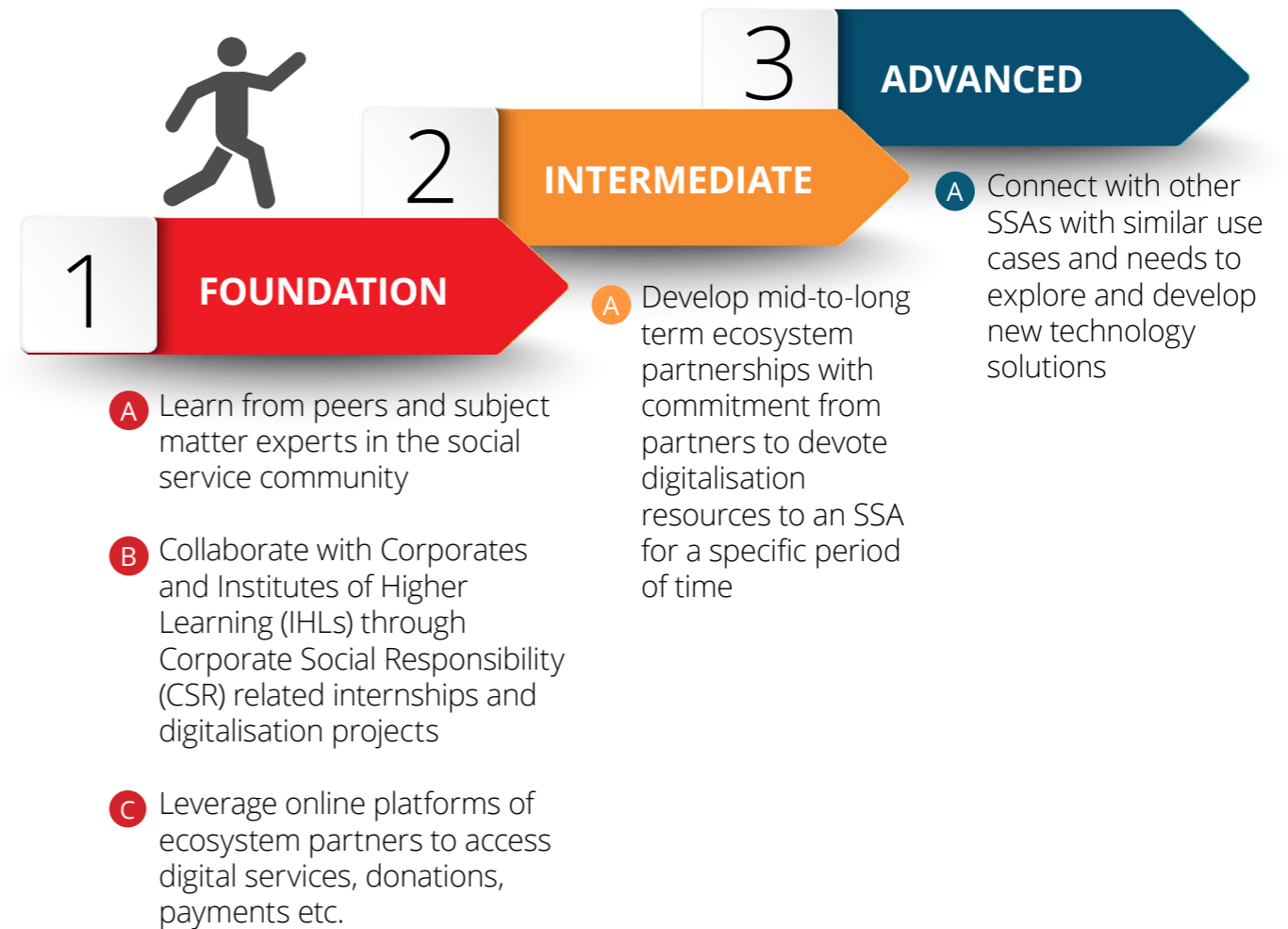
JP Morgan volunteers were preparing donated PCs at New Hope for distribution during the Covid-19 pandemic

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.

Refer to Appendix for more detailed resources to progress in the digital roadmap

Take a Step Forward!



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

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



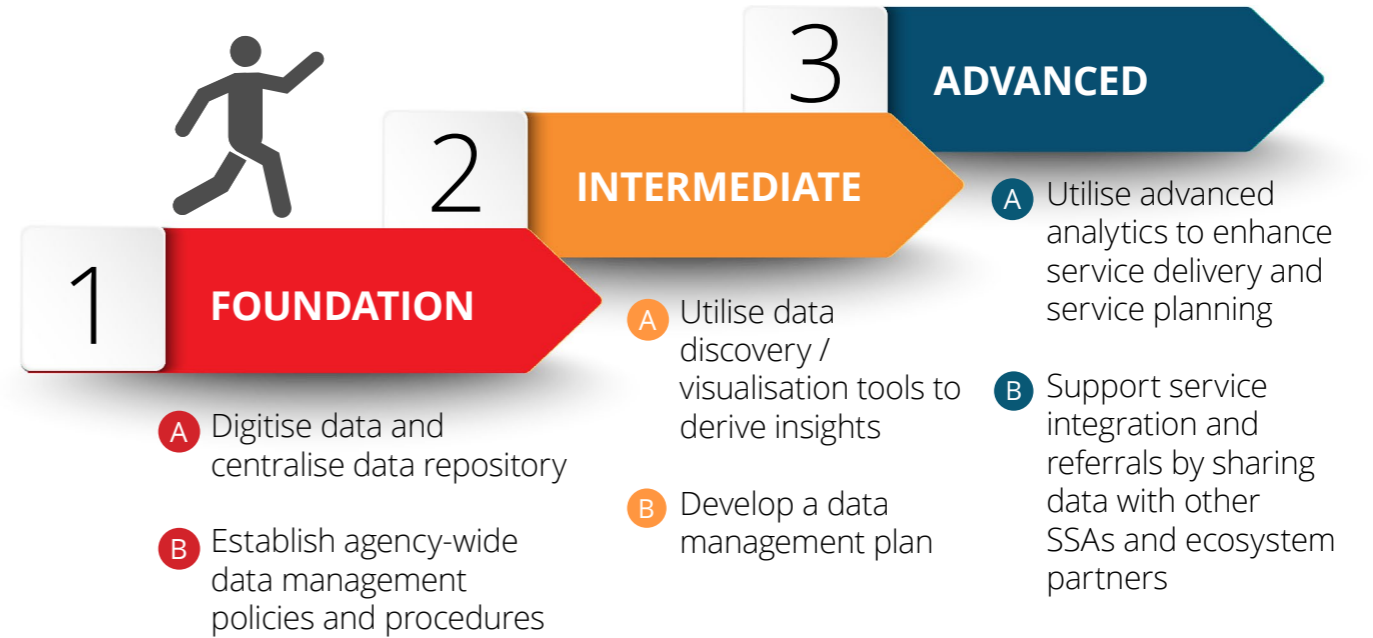
To protect service users' **personal data** and instil **trust** in their stakeholders, New Life Community Services (NLCS) decided to take up the Start Digital Programme.

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.

Refer to Appendix for more detailed resources to progress in the digital roadmap

Take a Step Forward!



Resources for SSAs

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)



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



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

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**.

Refer to Appendix for more detailed resources to progress in the digital roadmap

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)

A Develop a digital strategy plan

A Build digital-first culture throughout the organisation



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)



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.



ROLES	* DIGITAL SKILLS
Leadership	<ul style="list-style-type: none"> • Business Analytics for Strategic and Organisational Performance • Digital Marketing Strategy • Digital Transformation Strategy
General	<ul style="list-style-type: none"> • Augmented Reality and Virtual Reality • Cybersecurity Awareness • Data Analytics • Data Protection Management • Digital Learning for Beginners • Digital Payment • Digital Transformation Fundamentals • Human-Centred Design Fundamentals • Smart Sensors and Integration • Understanding of Internet of Things • User Experience Design Fundamentals

ROLES	CATEGORY	* DIGITAL SKILLS
Specialist	Business and Project Management	<ul style="list-style-type: none"> • Business Needs Analysis • Business Requirements Mapping • Change Management • Process Improvement and Optimisation • Project Management
	Data and Analytics	<ul style="list-style-type: none"> • Harnessing the Power of Predictive Analysis • Big Data Analytics • AI and Machine Learning Awareness • Deep Learning and Applications
	Digital Strategy and Implementation	<ul style="list-style-type: none"> • Digital Transformation Implementation • Digital and Agile Transformation
	Governance and Compliance	<ul style="list-style-type: none"> • Cyber Risk Management • Cyber and Data Breach Incident Management
	Marketing, Communications and Design	<ul style="list-style-type: none"> • Search Engine Marketing (SEM) • Search Engine Optimisation (SEO) • Social Media Content Management • Human-Centred Design

*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.



FOCUS AREAS



Secure, Integrated Solutions and Infrastructure

- Review processes and implement foundational and integration-ready solutions
- 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



Enhanced Service User Experience

- Streamline processes and implement foundational service delivery technology
- Capture relevant data on service users and service delivery within each agency programme



Connected Community and Partnerships

- Learn from peers and subject matter experts in the social service community
- Collaborate with Corporates and Institutes of Higher Learning (IHLs) through CSR-related internships and digitalisation projects
- Leverage online platforms of ecosystem partners to access digital services, donations, payments etc



Data Proficiency

- Digitise data and centralise data repository
- Establish agency-wide data management policies and procedures



Digital Talent and Leadership

- Appoint digital lead and form IT / digitalisation workgroup and board sub-committee
- Acquire workforce digital skills according to roles

1 FOUNDATION

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 improvements opportunities

- Enhance processes and implement advanced service delivery technology
- Enable a holistic view of service users within the organisation
- Derive insights through analysis of service user data to enhance the service user journey

- Apply human-centred design methodology to improve service for service users
- Collaborate with other SSAs and ecosystem partners to deliver integrated services

- Develop mid-to-long term ecosystem partnerships with commitment from partners to devote digitalisation resources to an SSA for a specific period of time

- Connect with other SSAs with similar use cases and needs to explore and develop new technology solutions

- Utilise data discovery / visualisation tools to derive insights
- Develop a data management plan

- Utilise advanced analytics to enhance service delivery and service planning
- Support service integration and referrals by sharing data with other SSAs and ecosystem partners

- Develop a digital strategy plan

- Build digital-first culture throughout the organisation

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.



ENTER

ENGAGE

EMPOWER

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

Service Delivery Functions

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



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 and 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

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



- Support groups
- Rehabilitation and therapy
- Counselling and groupwork
- Resources and helplines
- Clinic services
- Vocational training
- Housing support

Support Services for Community and Family Integration including Caregivers



- Public education and outreach services (including children, youths, adults and seniors)
- Wellness and active ageing programmes
- Family support services (e.g. Casework, community work, groupwork)
- Caregiver support programme
- Information and referral
- Casework, therapy, counselling and group work
- Befriending Services (including children, youth, seniors)
- Family violence and prevention (e.g. Children protective support services, Individual and family protection)
- Support services for vulnerable and at-risk groups (e.g. Youth-at-risks, fostering services, adult protective services)

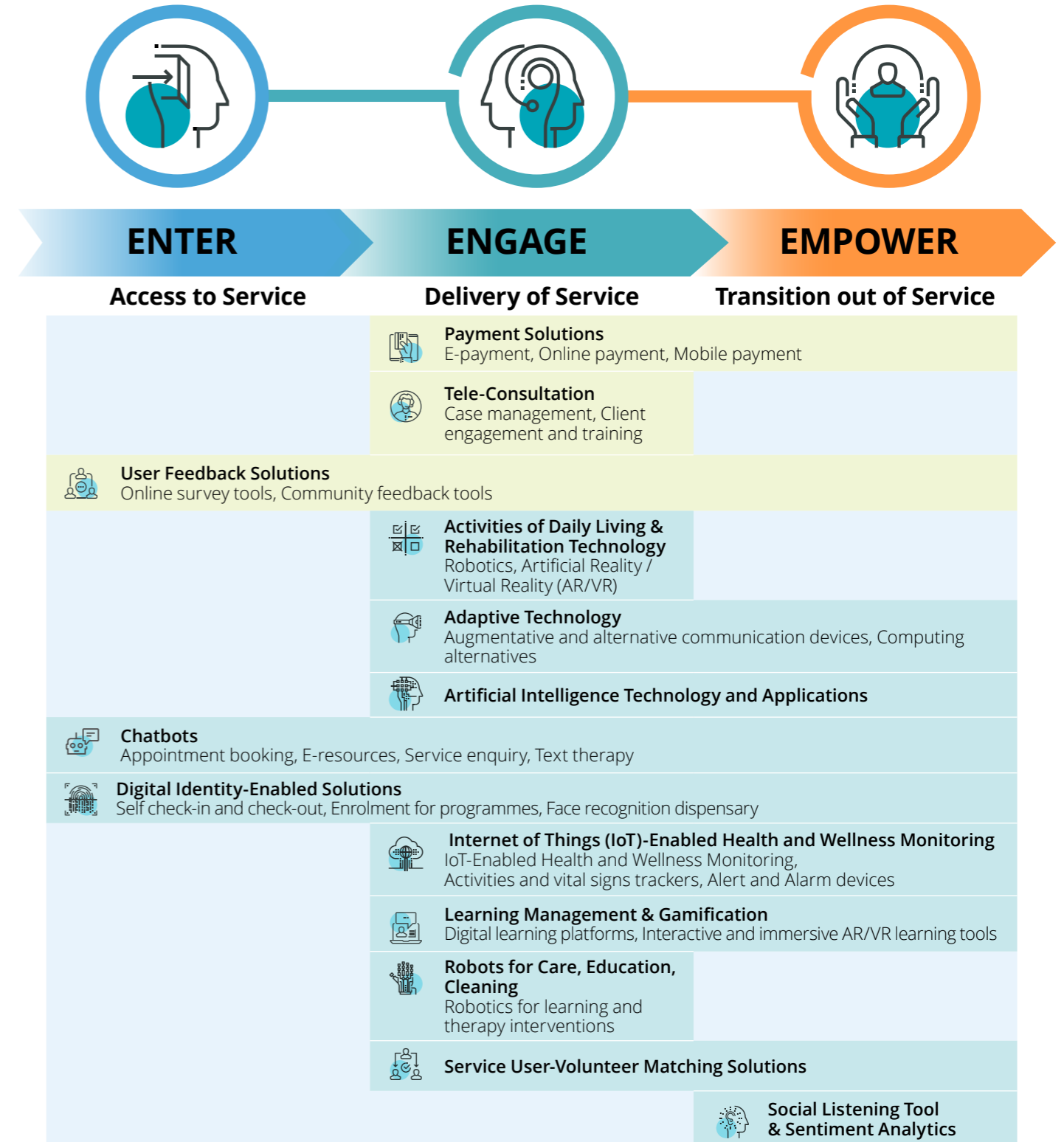
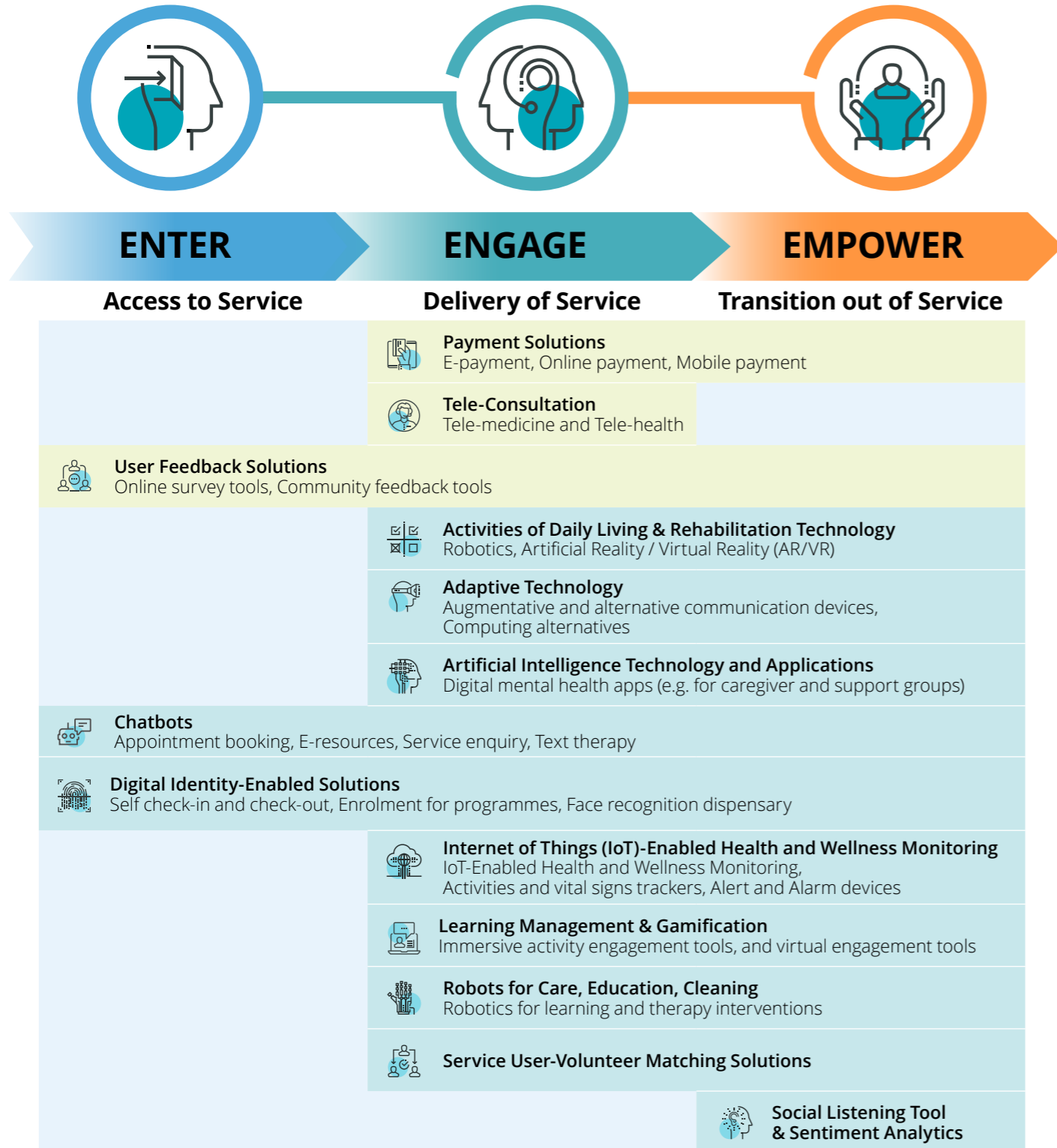
"Care Corner is presently exploring an **automated and blended triaging system**, leveraging on **chatbots, live agents and Robotic Process Automation (RPA)**, to ensure timely help, intervention and follow-up for persons seeking help, including but not limited to, mental health and counselling, and 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)

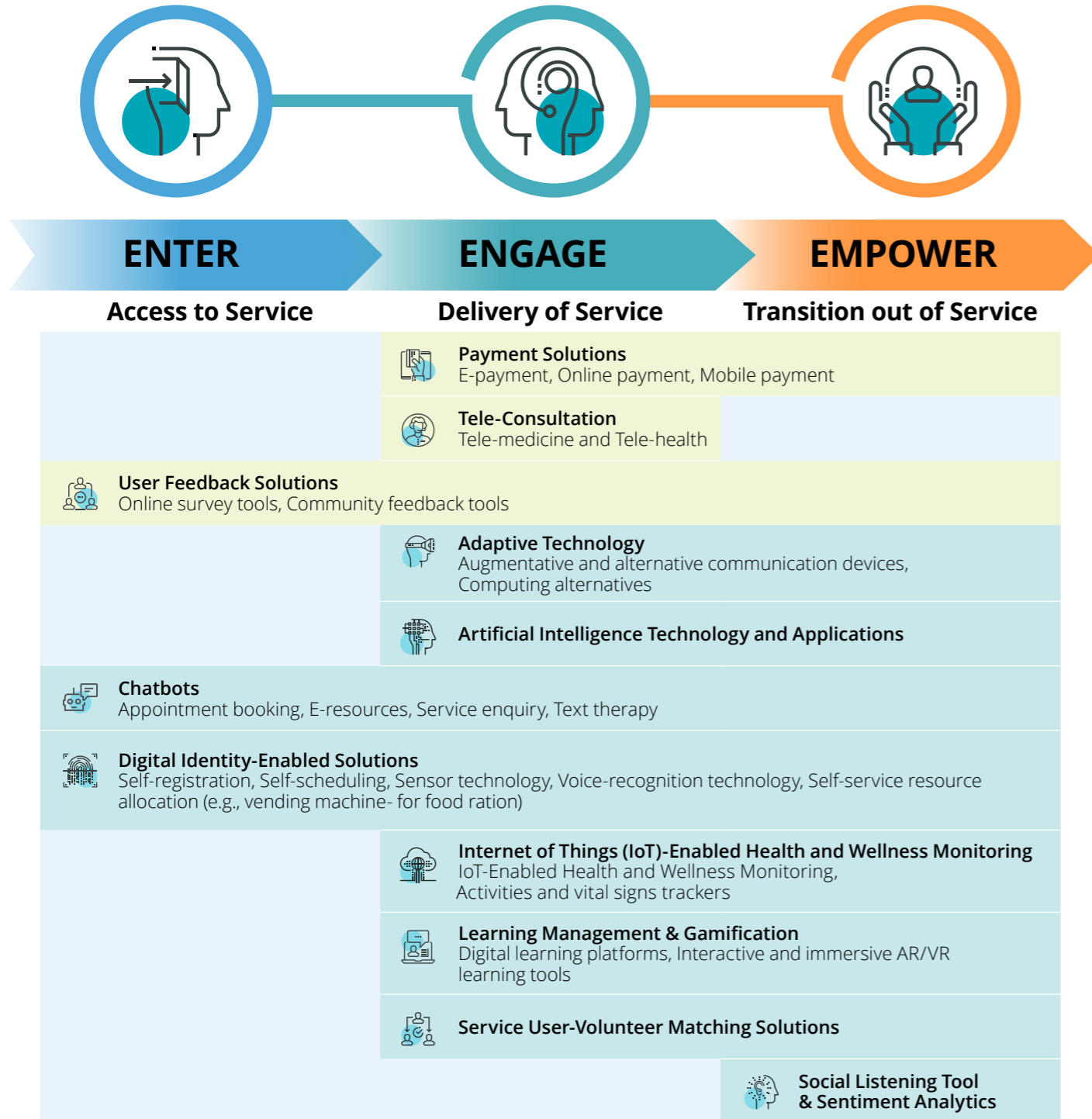
Disability Support Services (Children, Youths, Adults and Seniors)



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.

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.

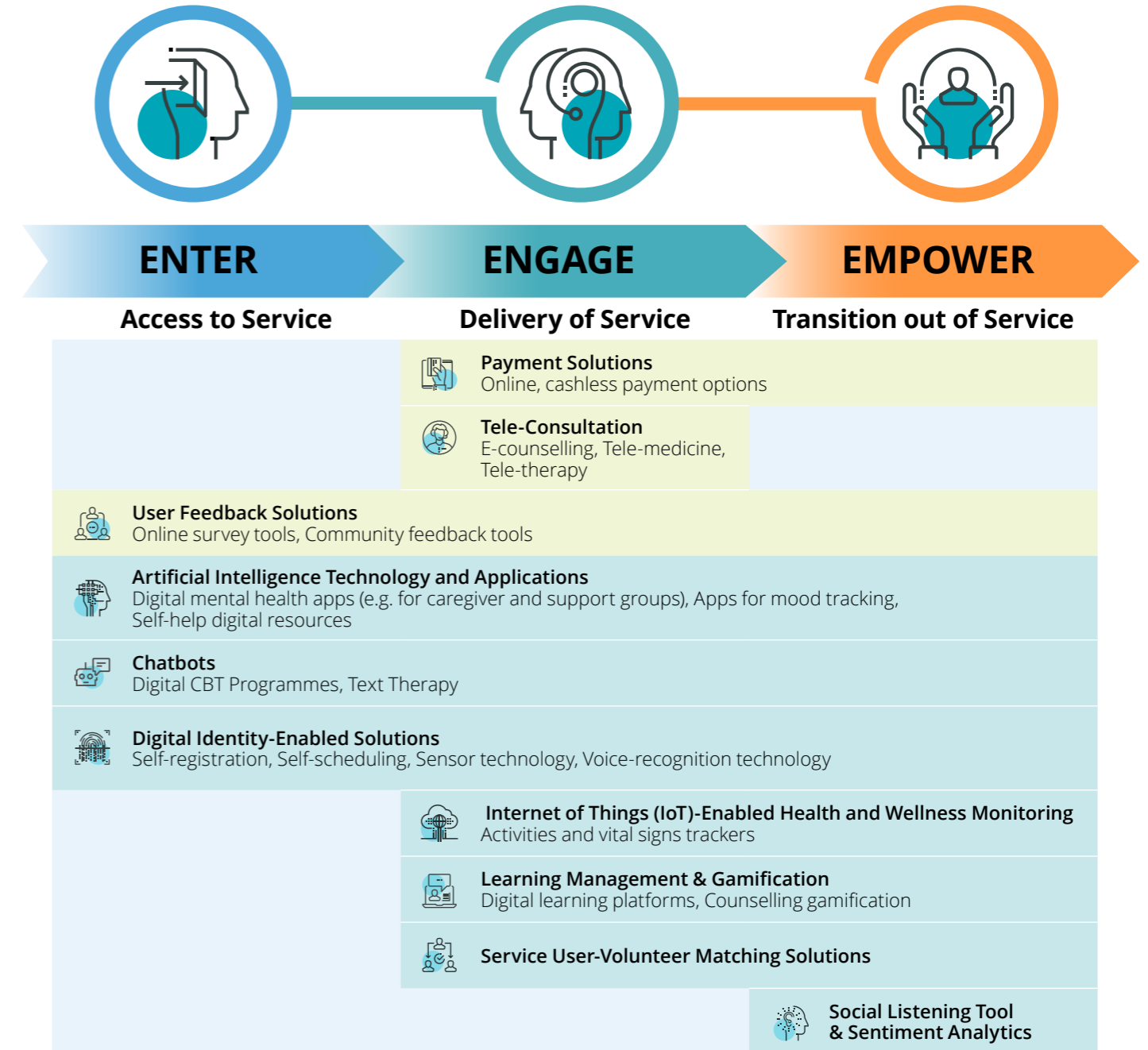
Mobile and Home-based services (Healthcare and Non-Healthcare)



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.

Foundational Service Delivery Technology Advanced Service Delivery Technology

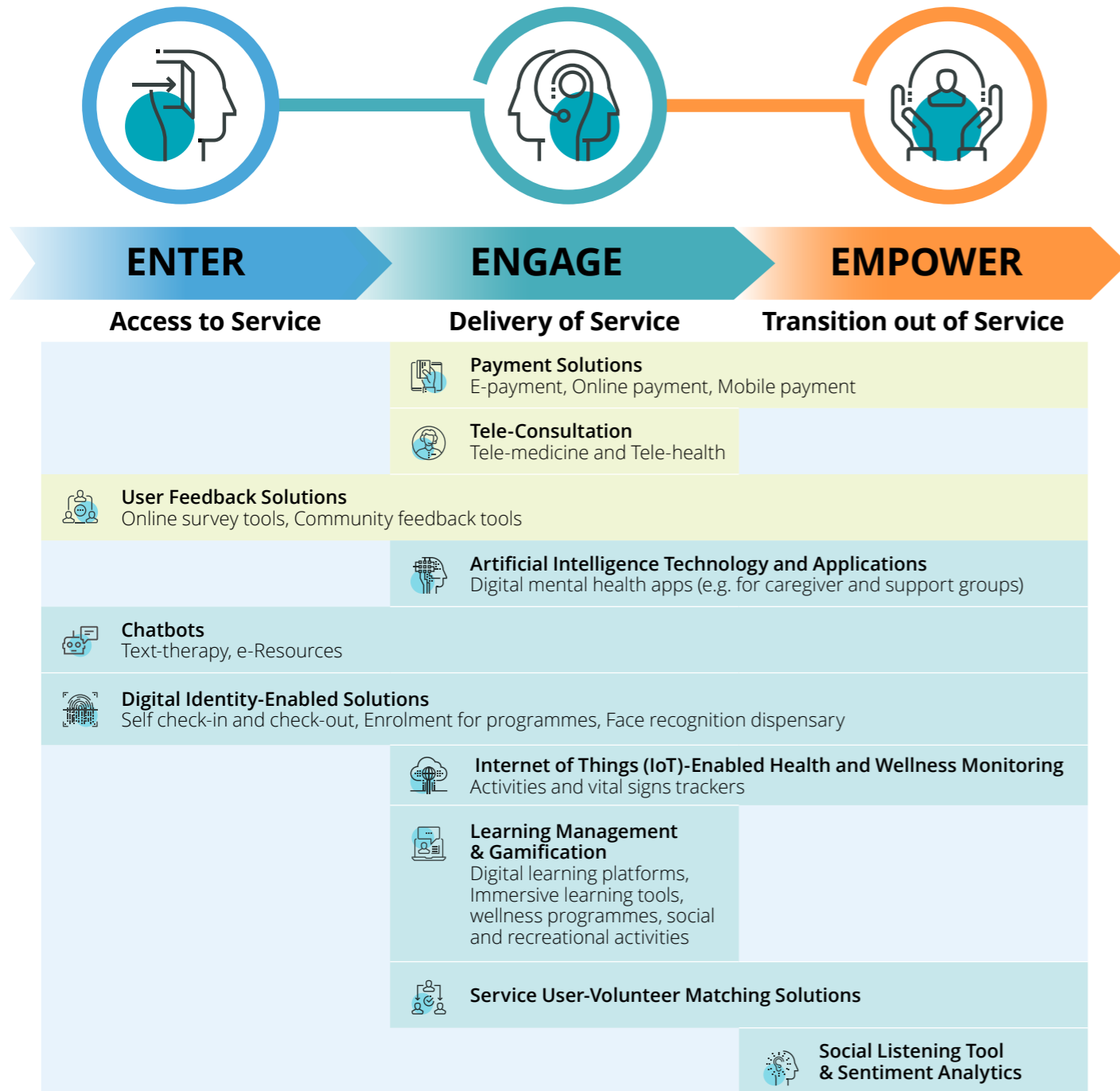
Rehabilitation, Reintegration and Support Services (Mental Health, Addiction and Reformed Offenders)



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.

Foundational Service Delivery Technology Advanced Service Delivery Technology

Support Services for Community and Family Integration including Caregivers

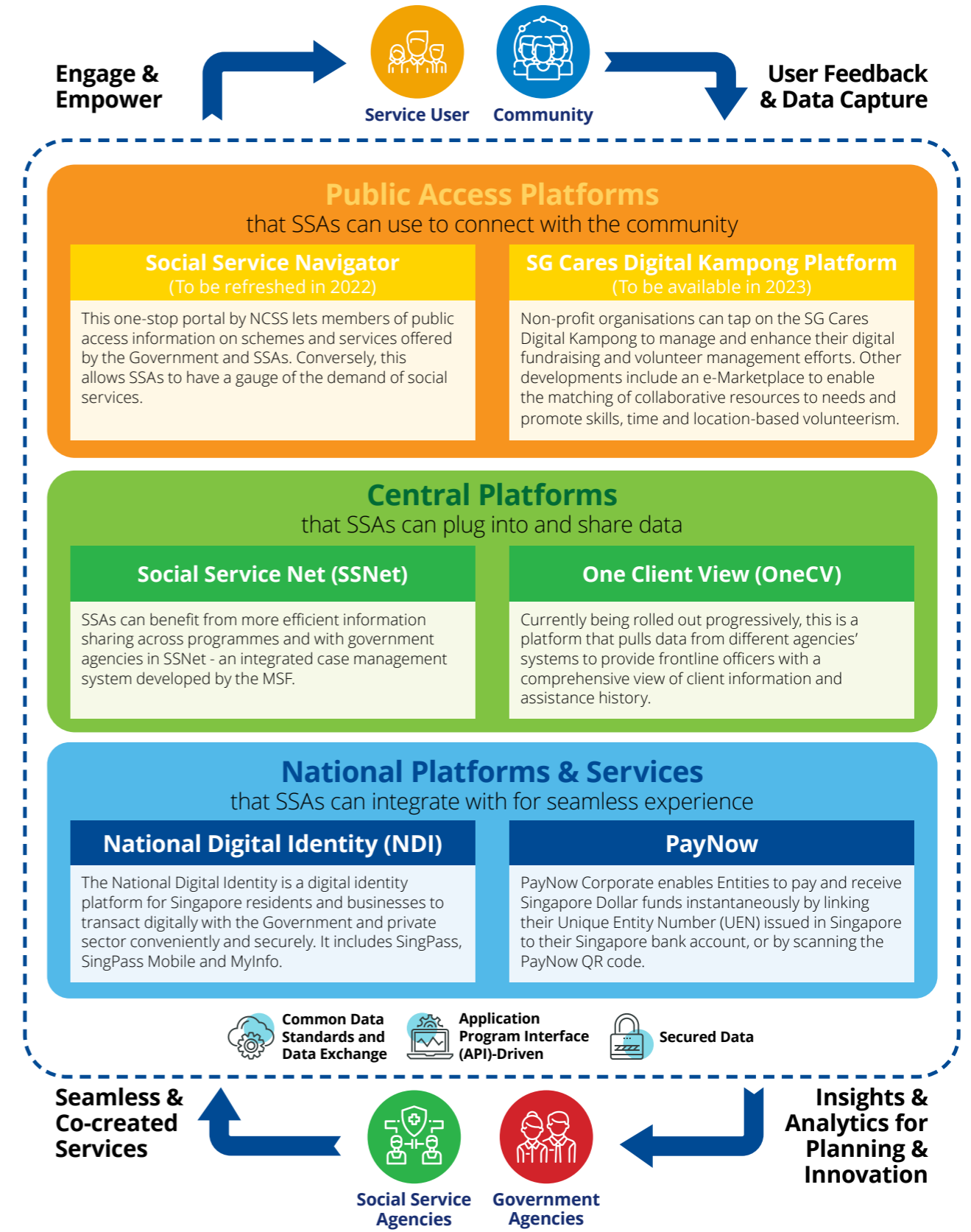
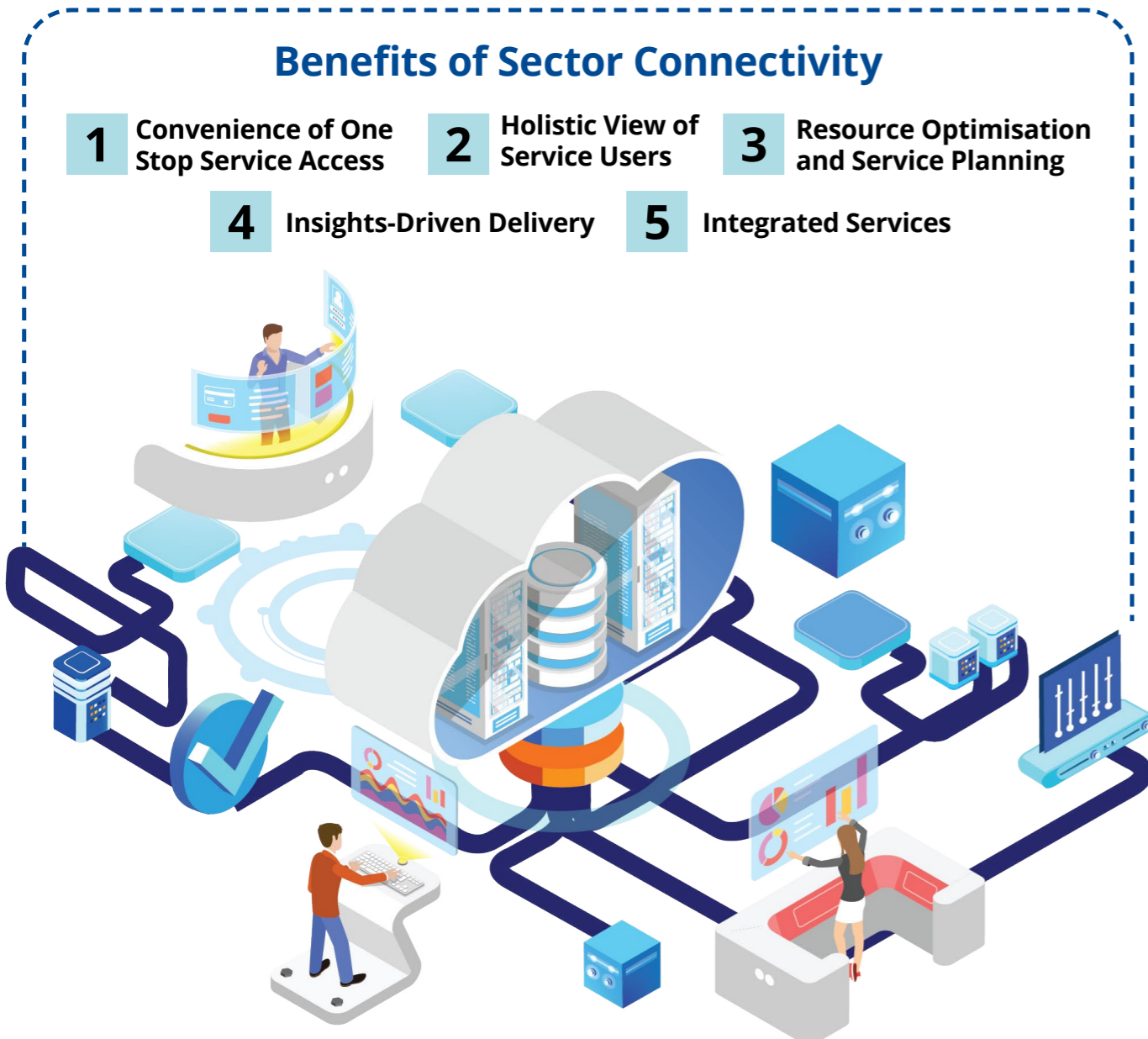


Technologies are non-exhaustive and not illustrated in sequence of adoption. Prioritise adoption of technologies based on organisational needs. Refer to Appendix for definition of technologies.

Chapter 5: Developing Sector Connectivity

Social Service Connectivity

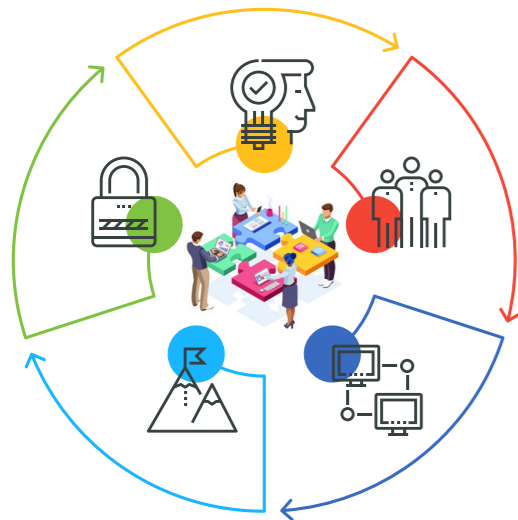
The aspiration of a connected sector is one where information flows to where it is needed, can be accessed legitimately and safely, and provides insights into new opportunities. It will enable targeting of services to meet needs, enhancement of resource allocation and planning, and generation of insights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



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?

Find out how you can tailor your own **Digital Roadmap** to move forward in your **digitalisation journey** by completing the **SSA Digital Roadmap Assessment**. Scan the QR code now!



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.

FUNDING FOR IT SOLUTIONS

Up to 3 years subsidy provided

- 80% for first year
- 50% for next two years

Start Digital

What scheme is this?

- Funding for IT Solutions
- Up to 80% subsidy capped at \$30,000 per agency
- Personal Devices (Laptops & Tablets) Up to \$8,000 subsidy per agency

Example

	IT Solutions	
	Accounting and Human Resource Management	Volunteer / Donor Management
Pre-scoped IT Solutions	✓	
Green Lane Solutions		✓
Pre-approved vendors	✓	
Any vendor		✓
1 quotation	✓	✓

More Solutions!



Go Digital

What scheme is this?

- Funding for customised large-scale IT Solutions
- Up to 80% subsidy capped at \$300,000 per project
- Require 3 quotations



Find out more at go.gov.sg/tng

Need help? Tech-and-GO@ncss.gov.sg



FUNDING FOR ADVISORY & CONSULTANCY

Guided IT Adoption

80 - 100% Funded

Technical Advisory

What scheme is this?

- Analyse current IT solution
- Identify pain points & tech needs
- Recommend IT solutions and/or consultancy modules

Fully Funded

Digital Implementation Consultancy

What scheme is this?

- Provide support in IT project implementation

80% subsidy capped at \$40,000 per SSA

Digital Strategy Planning

What scheme is this?

- Provide support in analysing, identifying and prioritising resources and digital solutions for delivery of future-ready services

80% subsidy capped at \$40,000 per SSA

Choose 1 or more modules in each track according to needs and budget

Modules

1. Technical Needs/Gaps Analysis
2. Priority Areas
3. Recommended Solutions

Modules

1. Project Management
2. Process Improvement
3. Change Management
4. Job Redesign
5. Post-implementation Advisory

Modules

1. Facilitation Workshops to perform SWOT Analysis and prioritise IT solutions
2. Change Management Planning
3. Change Management Implementation
4. Post Implementation coaching sessions

Apply Now



Find out more at go.gov.sg/tng

Need help?

Tech-and-GO@ncss.gov.sg



HOW TO APPLY & DISBURSEMENT OF FUNDS

How to Apply

Start Digital

Scenario 1

- ✓ Know my IT solution and Vendor

Scenario 2

- ✓ Know my IT solution
- ✗ Unsure of Vendor

Scenario 3

- ✗ Unsure of IT solution and Vendor

Advisory & Consultancy



- ✓ Obtain 1 Quote

Guided

- Apply for Advisory Consultant to help you:
- ✓ Identify IT needs
- ✓ Recommend Vendors

Self-directed

- Check for eligible vendors & packages



- Apply for Advisory Consultant to help you:
- ✓ Identify IT needs
- ✓ Recommend Vendors

Step 1

Step 2

- ✓ Submit application via Singpass (Corporate)



Go Digital

Our Tech-and-GO account managers will schedule an appointment to advise your needs. If your IT requirements do not fall under Start Digital, your application will be referred to Go Digital

Disbursement of Funds

Reimbursement

Start Digital



Disbursement

- * After project implementation
- ** Assumption - project runs for 3 years

Go Digital



Hybrid

Fully-Funded

Advisory and Consultancy

- SSA pays 20% directly to consultant after project completion
- NCSS subsidizes remaining 80%
- Technical Advisory
- No upfront payment from SSA required

Apply Now



Find out more at go.gov.sg/tng

Need help?

Tech-and-GO@ncss.gov.sg



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
- Pre-scoped Technical Advisory / Consultancy for digital solutions, cybersecurity and data protection

Cybersecurity and Data Protection Guidelines

- [Be Safe Online Handbook \(CSA\)](#)
- [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 \(VMS-SIR\)](#)



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 (NCSS)

- [Social Service Navigator](#)

Digital Literacy Upskilling Programmes (IMDA)

- [Digital for Life Programme](#)
- [Enable IT Programme](#)
- [Intergen IT Bootcamp](#)
- Seniors Go Digital
- [Silver Infocomm Junctions](#)

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

Advisory Panel Members

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Member

Chief Executive Officer Singapore Children's Society

Mr Lawrence Ang

Member

Founder & Director Landz Consulting Tech Advisory Council Member, Singapore Pools

Dr Lee Tung Jean

Member

1 Deputy Secretary Ministry of Social and Family Development

Mr Lew Chuen Hong

Member

Chief Executive Infocomm Media Development Authority

Mr Richard Koh

Member

Chief Technology Officer Microsoft Singapore

Mr Robert Chew

Member

Managing Partner iGlobe Partners Vice President, NCSS

Mr Seah Chin Siong

Member

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

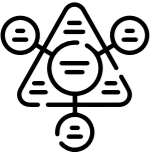
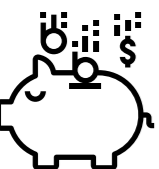



Action For AIDS (Singapore)	Heartware Network	Singapore Anti-Narcotics Association
ALIFE Ltd	Home Nursing Foundation	Singapore Association for Counselling
Alive Community Network	HOPE Worldwide (Singapore)	Singapore Buddhist Welfare Services
AMKFSC Community Services Ltd	I Love Children	Singapore Cancer Society
Asian Venture Philanthropy Network Limited	Industrial and Services Co-operative Society Limited	Singapore Children's Society
Association For Persons With Special Needs	Jia Ying Community Services Society	Singapore Council Of Women's Organisations
Association Of Muslim Professionals	Kheng Chiu Loke Tin Kee Home	Singapore Indian Development Association (SINDA)
Babes Pregnancy Crisis Support Ltd	Lakeside Family Services	Singapore Planned Families Association
Bartley Community Care Services	Law Society Pro Bono Services	Society for WINGS
Bethesda CARE Centre	Ling Kwang Home for Senior Citizens	Society of Sheng Hong Welfare Services
Bless Community Services	Lions Befrienders Service Association (Singapore)	Society for the Promotion of Attention Deficit Hyperactivity Disorder Research and Knowledge
Blossom Seeds Limited	Lions Community Service Foundation (Singapore)	SPD
Bone Marrow Donor Programme, The	Loving Heart Multi-Service Centre (Jurong)	Sree Narayana Mission (Singapore)
Boys' Town	Metropolitan Young Men's Christian Association Of Singapore	St Luke's ElderCare Ltd
Brain Tumour Society (Singapore) Limited	Movement for the Intellectually Disabled of Singapore (MINDS)	St. John's Home For Elderly Persons
Care Corner Singapore Ltd	Montfort Care	SUN-DAC
Caring Fleet Services Limited	Morning Star Community Services Ltd	The Community Justice Centre Limited
Catholic Family Life Limited	Muhammadiyah Welfare Home	The Food Bank Singapore Ltd
Centre For Seniors	New Hope Community Services	The Ray of Hope Initiative Limited
Cerebral Palsy Alliance Singapore	New Life Community Services	The Straits Times School Pocket Money Fund
Christian Outreach to the Handicapped	Organisation Mondiale Pour l'Education Prescolaire Singapore	Thye Hua Kwan Moral Charities Limited
Clarity Singapore Limited	O'Joy Limited	Thye Hua Kwan Nursing Home Ltd
Club HEAL	PAVE	TOUCH Community Services Limited
Counselling and Care Centre	Persatuan Pemuda Islam Singapura (PPIS)	Trybe Limited
Credit Counselling Singapore	Ramakrishna Mission, The	United Indian Muslim Association
Daughters of Tomorrow Limited	Realm of Tranquility	WE CARE Community Services Limited
Down Syndrome Association (Singapore)	RSVP Singapore The Organisation of Senior Volunteers	Wicare Support Group
Eurasian Association, The	Sathya Sai Social Service (Singapore)	XiSer CareServe
Federation of Youth Clubs, Singapore		Youth Guidance Outreach Services
Fei Yue Community Services		Young Men's Christian Association Of Singapore
Foreign Domestic Worker Association for Social Support and Training (FAST)		
Gerontological Society		
HCSA Community Services		




Ecosystem Partners

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









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.

Initiatives	Background Info
<p>Bite-size Projects</p> 	<p>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.</p>
<p>Ka-Ching</p> 	<p>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.</p>
<p>DonateNow!</p> 	<p>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.</p>
<p>Social Service Navigator</p> 	<p>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.</p>
<p>iShine Cloud</p> 	<p>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.</p>





Initiatives	Background Info
<p>Back-to-Basics</p> 	<p>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.</p>
<p>Tech Booster</p> 	<p>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.</p>
<p>Tech-and-GO!</p> 	<p>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.</p>





Appendix: Foundational Solutions Definitions

Technology Name	Technology Description
 Accounting System	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.
 Antivirus Solutions	A software used to safeguard individual users' machines from malware, cyber threats and suspicious activities.
 Centre Management	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.
 Client / Case Management	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.
 Collaboration Tools	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.
 Document Management	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.
 Donor Management	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.
 Encryption Tools	A tool to secure digital data using one or more mathematical techniques and a password or "key" used to decrypt the information.






Technology Name	Technology Description
 Firewalls	A software that helps protect the backend infrastructure from potential security threats through the consolidation of an organisation's multiple security and networking functionals.
 Human Resource Management System	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.
 Identity and Access Management	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.
 Management and Funder Reporting (Automated)	Tools used to generate reports from datasets to make business decisions, and monitor the progress of different business segments.
 Office Productivity Solutions	An enterprise suite of cloud computing, productivity and collaboration tools, software and products.
 Video Conferencing	A software that enables online communication for audio meetings, video meetings, and seminars, with built-in features such as chat, screen sharing, and recording.
 Virtual Private Networks (VPNs)	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.
 Volunteer Management	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.
 Website	A set of related web pages located under a single domain name.

Appendix: Service Delivery Technology Definitions

Technology Name	Technology Description	Examples
 Activities of Daily Living & Rehabilitation Technology	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Digital mental health apps Digital health apps Virtual counselling apps Virtual support groups
 Assistive and Adaptive Technology	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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

Technology Name	Technology Description	Examples
 Digital Identity-Enabled Solutions	<ul style="list-style-type: none"> Digital Identity-Enabled Solutions that help to create, manage, and verify digital identities for all service users to ensure a smooth and seamless service experience 	<ul style="list-style-type: none"> Enrolment for programmes Face recognition dispensary Self check-in and check-out Self-registration Self-scheduling Self-service resource allocation Sensor technology Voice-recognition technology
 IoT-Enabled Client Safety & Incidence Monitoring	<ul style="list-style-type: none"> IoT-Enabled health monitoring and assistive systems to support aging-in-place and tracking for persons with dementia and/or disability tracking Solutions that help to monitor, alert and track service users in their daily functions such as tracking the movement of the service user, alerting caregivers for assistance or capturing the activities and vital signs of service user 	<ul style="list-style-type: none"> Location tracking devices Alarm systems and alert device IoT-Enabled health and wellness monitoring apps Activities and vital signs trackers Sound recognition for emergency monitoring, smart building, and surveillance Motion and behavioural analytics
 Learning Management & Gamification	<ul style="list-style-type: none"> Learning systems that comprise digital solutions like interactive tools, software applications and platforms to promote collaborative peer-to-peer learning through engaging learning activities, games and educational programs based on service users' needs Solutions that help in the administration, tracking, documentation, reporting and automation and delivery of educational and training courses based on service-users' needs 	<ul style="list-style-type: none"> Counselling gamification Digital learning platforms Immersive activity engagement tools Interactive and immersive AR / VR learning tools Social and recreational activities Virtual engagement tools Wellness programmes
 Payment Solutions	<ul style="list-style-type: none"> E-payment, Online payment, Cashless payment technologies 	<ul style="list-style-type: none"> Contactless payment E-wallet Integrated Point-of-Sale (POS) Mobile payment Peer-to-peer funds transfer SGQR payment

Appendix: Service Delivery Technology Definitions

Technology Name	Technology Description	Examples
 Robots for Care, Education, Cleaning	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Autonomous Cleaning Robots Automatic Guided Vehicles Robotics for learning and therapy interventions Social and Personal Robots
 Service User-Volunteer Matching Solutions	<ul style="list-style-type: none"> Matching Caregivers / Volunteers to suitable service users based on their skillsets, availability and preferences for prompt and effective support 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Remote consultation and / or interactions between a social service worker and service user to provide diagnostic or therapeutic advice through electronic means 	<ul style="list-style-type: none"> Tele-medicine Tele-health Tele-rehab Video consultation augmented with wearables
 User Feedback Solutions	<ul style="list-style-type: none"> User Feedback software creates online surveys for data collection, reporting and decision-making 	<ul style="list-style-type: none"> 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
<h2>Secure, Integrated Solutions and Infrastructure</h2>	
<p>1a</p> <p>Review processes and implement foundational and integration-ready solutions</p>	<ul style="list-style-type: none"> i Complete SSA Digital Roadmap Assessment to identify current gaps <ul style="list-style-type: none"> Refer to Foundational Solutions Guide [Chapter 3] ii Undergo 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]: <ul style="list-style-type: none"> Technical advisory/consultancy Digital solutions Funding support TechUP Friday! Tech Demo
<p>1b</p> <p>Adhere to cybersecurity and data protection baseline requirements</p>	<ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> Cybersecurity Agency of Singapore (CSA) Website Personal Data Protection Commission (PDPC) Website iii Contact NCSS Tech-and-GO! Hub [Chapter 6]: <ul style="list-style-type: none"> Cybersecurity Consultancy Data Protection Consultancy Cybersecurity solutions Funding support
<p>1c</p> <p>Conduct cybersecurity, data and IT risk assessments</p>	<ul style="list-style-type: none"> 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]: <ul style="list-style-type: none"> Technical advisory/consultancy Cybersecurity Consultancy Data Protection Consultancy Cybersecurity solutions Funding support

Appendix: Resources to Progress in the Digital Roadmap

Steps	Resources and Tactics
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Secure, Integrated Solutions and Infrastructure

1d	Develop an IT incident response and recovery plan	<ul style="list-style-type: none"> i Set up an IT incident response and recovery team and define roles and responsibilities ii Define what constitutes a data incident (e.g. Malware, phishing, distributed denial of service, ransomware, data breach and corruption) iii Define IT incident response and assessment procedures to contain breach iv Develop matrix to assess risk and impact of data incident v Define IT incident reporting procedures vi Evaluate response to incident and review actions taken to prevent further data incidents vii Develop a IT inventory map, data flow diagram and risk assessment report for the IT incident response and recovery plan viii Attend cyber and data incident breach management training under the Digital Skills Guide [Chapter 3]
2a	Integrate new and existing systems	<ul style="list-style-type: none"> i Identify benefits of integration e.g. productivity increase, fewer errors, data consistency ii Prioritise need and implement integration solutions iii Contact NCSS Tech-and-GO! Hub [Chapter 6]: <ul style="list-style-type: none"> • Technical advisory/consultancy • Digital solutions • Funding support • TechUP Friday! Tech Demo
2b	Conduct regular cybersecurity, data protection and IT audits	<ul style="list-style-type: none"> i Assess current level of cybersecurity and data protection compliance and identify compliance gaps ii Review encryption and cybersecurity management tools on all devices iii Review access management controls and policies to set up-to-date user access privileges iv Assess third-party risk management and compliance efforts v Engage vendors to perform regular audits on their IT systems
3a	Adopt business process monitoring solutions to uncover process improvements opportunities	<ul style="list-style-type: none"> i Identify important business processes that are candidates for continuous improvement efforts ii Define intermediate and outcome metrics that will measure the efficiency of these processes iii Adopt a business process monitoring tool/solution that can easily and consistently monitor the performance of these processes to identify successes and problems iv Contact NCSS Tech-and-GO! Hub [Chapter 6]: <ul style="list-style-type: none"> • Technical advisory/consultancy • Digital solutions • Funding support • TechUP Friday! Tech Demo

Steps	Resources and Tactics
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Enhanced Service User Experience

1a	Streamline processes and implement foundational service delivery technology	<ul style="list-style-type: none"> i Develop a clear understanding of what service users value and link it to the goals for streamlining processes 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 iii Undergo human-centred design training under the Digital Skills Guide [Chapter 3] 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 v Measure and track user satisfaction for all solutions implemented vi Contact NCSS Tech-and-GO! Hub [Chapter 6]: <ul style="list-style-type: none"> • Technical advisory/consultancy • Digital solutions • Funding support • TechUP Friday! Tech Demo
1b	Capture relevant data on service users and service delivery within each agency programme	<ul style="list-style-type: none"> i Capture relevant holistic data of service users ii Capture data pertaining to the delivery of services over time 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
2a	Enhance processes and implement advanced service delivery technology	<ul style="list-style-type: none"> 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 ii Measure and track user satisfaction for all solutions implemented iii Contact NCSS Tech-and-GO! Hub [Chapter 6]: <ul style="list-style-type: none"> • Technical advisory/consultancy • Digital solutions • Funding support • TechUP Friday! Tech Demo
2b	Enable a holistic view of service users within the organisation	<ul style="list-style-type: none"> i Assign dedicated employees to capture, consolidate, analyse and share service user data in a structured manner across the SSA organisation ii Ensure that systems and processes consider the various programme touchpoints with the service users iii Consolidate all programme-related data for each service user within the organisation by leveraging data from various programme touchpoints
2c	Derive insights through analysis of service user data to enhance the service user journey	<ul style="list-style-type: none"> 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

Appendix: Resources to Progress in the Digital Roadmap

Steps	Resources and Tactics
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Enhanced Service User Experience

3a	Apply human-centred design methodology to improve service for service users	<ul style="list-style-type: none"> i Apply techniques such as personas/archetype definition and service journey mapping to understand the needs of the service users ii Apply techniques such as ethnographic research to understand the real problems and gaps iii Apply techniques and tools such as brainstorming, concept development, mock-ups, wireframes to generate ideas for solution iv Apply prototyping and usability testing approaches to iteratively get to the desired solution
3b	Collaborate with other SSAs and ecosystem partners to deliver integrated services	<ul style="list-style-type: none"> i Network with ecosystem players (e.g., Capabilities Circles, GatherHere, Giving.sg) and exchange ideas on digitalisation opportunities 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

Steps	Resources and Tactics
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Connected Community and Partnerships

1a	Learn from peers and subject matter experts in the social service community	<ul style="list-style-type: none"> 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 ii Join Capabilities Circles to upskill and journey together in the digitalisation process, with members serving as digital guides or digital companions iii Participate in GatherHere to discuss challenges relating to digitalisation
1b	Collaborate with Corporates and Institutes of Higher Learning (IHLs) through CSR-related internships and digitalisation projects	<ul style="list-style-type: none"> i Tap on ecosystem partners' advanced digitalisation knowledge, resources, capabilities, tools and digital platforms to uplift the SSA's digitalisation journey via IT Skilled Volunteerism <ul style="list-style-type: none"> • Explore requirements with NCSS and receive support to be matched with suitable ecosystem partners • Partner with ecosystem partners for 1-on-1 digitalisation support and capability building
1c	Leverage online platforms of ecosystem partners to access digital services, donations, payments etc.	<ul style="list-style-type: none"> 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 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. 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 iv Register for PayNow Corporate with your chosen bank provider by providing your organisation's UEN and following the relevant set up instructions
2a	Develop mid-to-long term ecosystem partnerships with commitment from partners to devote digitalisation resources to an SSA for a specific period of time	<ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> • Explore requirements with NCSS and receive support to be matched with suitable ecosystem partners • Partner with ecosystem partners for 1-on-1 digitalisation support, capability building and workforce augmentation
3a	Connect with other SSAs with similar use cases and needs to explore and develop new technology solutions	<ul style="list-style-type: none"> 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 ii Partner with other SSAs for digitalisation support, capability building, and co-development of SSA digital solutions with technology providers

Appendix: Resources to Progress in the Digital Roadmap

Steps		Resources and Tactics	
Data Proficiency			
1a	Digitise data and centralise data repository	<ul style="list-style-type: none"> i Digitise hardcopy documents using scanning and Optical Character Recognition technology ii Centralise and organise data with proper data structures and taxonomy to facilitate subsequent analysis 	
1b	Establish agency-wide data management policies and procedures	<ul style="list-style-type: none"> 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 	
2a	Utilise data discovery / visualisation tools to derive insights	<ul style="list-style-type: none"> i Clarify goals for use of data to inform data collection, storage and analysis, and accompanying change management 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] 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 iv Enrich datasets and build visualisations to explore and communicate findings on service delivery v Harness data to gain insights into service user outcomes and service operations, increase responsiveness, tailor services and better plan for the future vi Contact NCSS Tech-and-GO! Hub [Chapter 6]: <ul style="list-style-type: none"> • Technical advisory/consultancy 	
2b	Develop a data strategy plan	<ul style="list-style-type: none"> i Obtain approvals and implement the data strategy <ul style="list-style-type: none"> • Socialise data strategy plan with agency leadership and staff, and explore value proposition for initiatives • Implement initiatives (e.g. build a data management team, assign governance roles) ii Define the data strategy roadmap <ul style="list-style-type: none"> • Define how data will help the agency meet its goals • Plan for data management, including collection, storage, organisation and distribution • Identify datasets to be collected and point of origination • Define initiatives for data strategy and establish a roadmap and milestones • Define change management plan to support roll-out of data strategy iii Contact NCSS Tech-and-GO! Hub [Chapter 6]: <ul style="list-style-type: none"> • Technical advisory/consultancy 	

Steps		Resources and Tactics	
Data Proficiency			
3a	Utilise advanced analytics to enhance service delivery and service planning	<ul style="list-style-type: none"> i Understand the service delivery process, define the timeline and concrete performance indicators 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 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 iv Contact NCSS Tech-and-GO! Hub [Chapter 6]: <ul style="list-style-type: none"> • Technical Advisory • Data Analytics Solutions Funding 	
3b	Support service integration and referrals by sharing data with other SSAs and ecosystem partners	<ul style="list-style-type: none"> i Connect with other complementary SSAs and ecosystem partners where there are service delivery synergies 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 iii Ensure compliance with data privacy regulations 	

Appendix: Resources to Progress in the Digital Roadmap

Steps		Resources and Tactics
<h2>Digital Talent and Leadership</h2>		
1a	Appoint digital lead and form IT / digitalisation workgroup and board sub-committee	<ul style="list-style-type: none"> i Identify capabilities / competencies of Digital Leaders who can help orchestrate the digital transformation journey and drive fundamental business transformations ii Formally appoint Digital Lead and/or Digitalisation sub-committee with Terms of Reference
1b	Acquire workforce digital skills according to roles	<ul style="list-style-type: none"> i Leadership / management to lead by example in carrying out digital upskilling initiatives, e.g. <ul style="list-style-type: none"> • Allocate time on their schedules to get themselves digitally upskilled • Share their experience and digital upskilling stories • Ensure managers allocate time for staff to get digitally upskilled • Track and measure staff's digital upskilling progress regularly • Facilitate continuous learning and digital upskilling within the organisation ii Undergo suitable Digital Skills training under the Digital Skills Guide [Chapter 3] according to job roles iii Participate in available learning forums (e.g. TechUP Friday! Webinars, Capabilities Circle)
2a	Develop a digital strategy plan	<ul style="list-style-type: none"> i Define the digital strategy roadmap and change management plan <ul style="list-style-type: none"> • Define digitalisation vision for the agency • Define initiatives for digital strategy and establish a roadmap and milestones for digital transformation • Define change management plan to support roll-out of digital strategy ii Obtain approvals and implement the digital strategy <ul style="list-style-type: none"> • Socialise data strategy plan with agency leadership and staff, and explore financial justification for initiatives • Implement initiatives (e.g. build a data management team, assign governance roles) iii Contact NCSS Tech-and-GO! Hub [Chapter 6]: <ul style="list-style-type: none"> • Technical advisory/consultancy
3a	Build digital-first culture throughout the organisation	<ul style="list-style-type: none"> i Identify and encourage employees who can be change agents or 'digital ambassadors' ii Shift the focus from outcomes and traditional KPIs that can create resistance to culture transformation (e.g. reward implementation of digitalisation ideas) iii Translate the broader digital vision into compelling and tangible organisation outcomes that employees can relate to, and feel accountable for iv Leverage social networks to connect the bottom and top of the organisation v Commit to employees to help them retool and reskill, and organise training for staff on digital transformation vi Pilot digital projects, and provide incentives for digital and innovative projects



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