

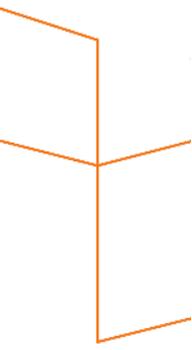
TRANSFORMING THE TECH BEHIND TAX

INLAND REVENUE AUTHORITY OF SINGAPORE

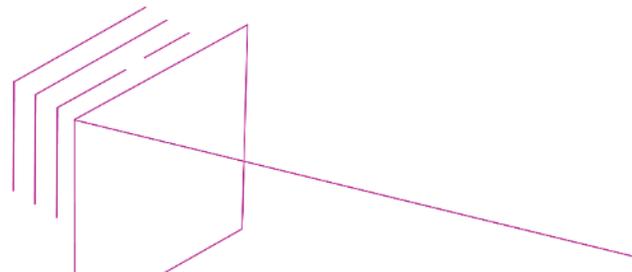


Agenda

- Overview of IRAS
- IRAS Strategy
 - Harnessing new technologies
 - Redefining experiences
- Conclusion



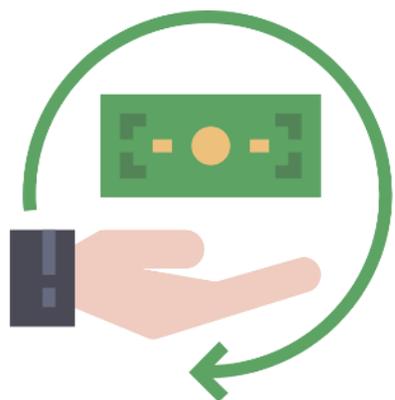
OVERVIEW OF IRAS



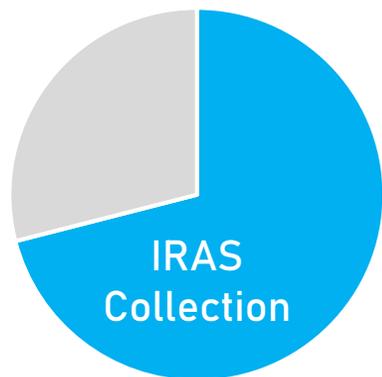
Overview

of Inland Revenue Authority of Singapore (IRAS)

(FY 18/19)



We collected
S\$52.4B
in tax revenue



Represents
71.1%
Total S'pore
Operating Revenue



We spent
0.80 cents
per dollar
collected



99.7% refunds
processed within
14 days

100% refunds
processed within
30 days



No-Filing Service
benefitted
1.5M
Taxpayers in
2019



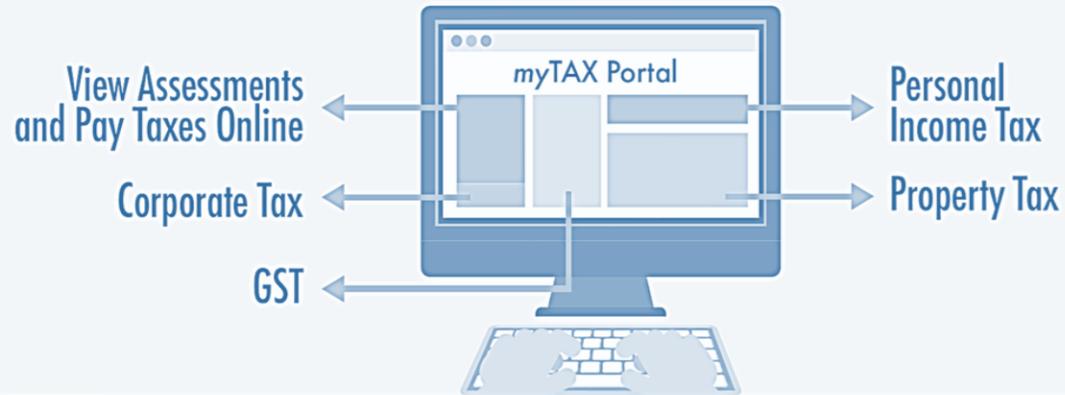
100%
appointments
attended to
within 15 mins



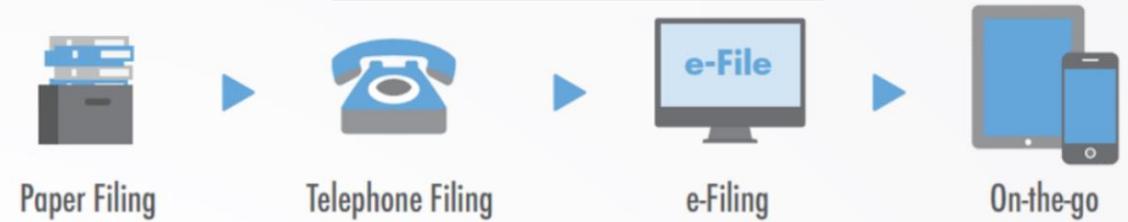
98%
satisfied
customers

It wasn't achieved in a day...

ONE-STOP PLATFORM



MODES OF FILING



METHODS OF FILING



FASTER RESPONSE



Tax Bill Mailed
Months After Filing

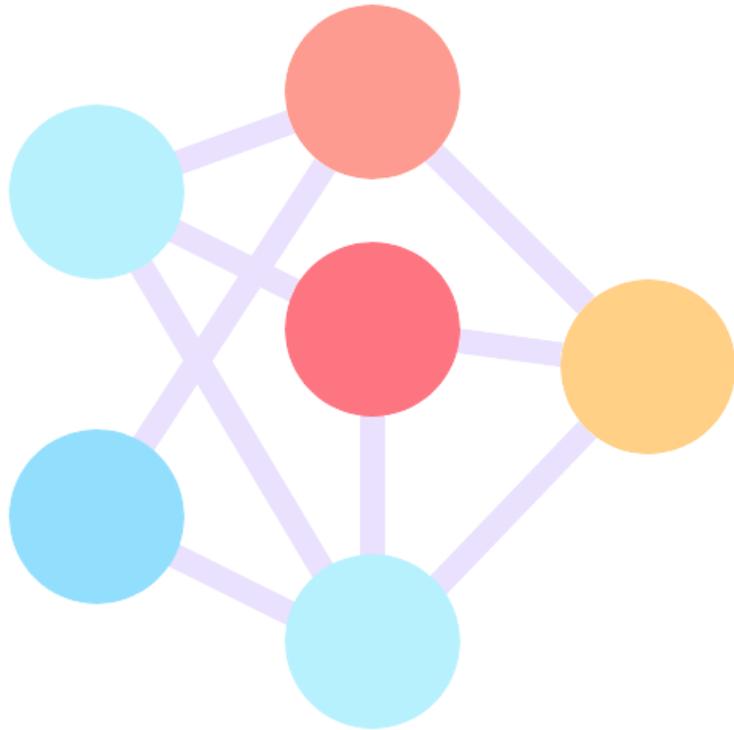


Preview Tax Bill for those
on No-Filing Service



Instant Finalised Tax Bill
after Filing

Expansive Networks



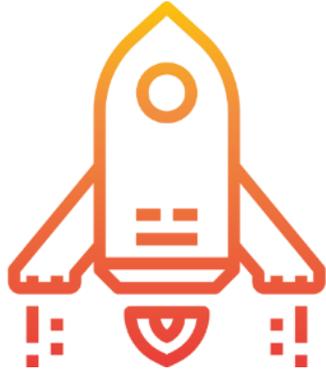
> 100 linkups

across private and public sectors



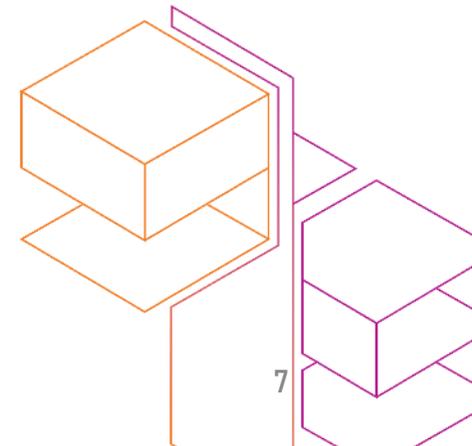
Co-Create **via APIs**

Partnering technology creators



Supported and benefitted from working with many emerging technologies and start-up companies

Co-develop & Co-maintain



IRIN - what is it?

I R I N

Inland Revenue Interactive Network

Core tax administration system that makes everything possible

IT Statistics (Current)

Entities in the system



~4.8M

(Individuals, Companies, Instruments, etc)

Non-IT

1650

(Tax officers, auditors, HR, etc)

IT

240

(not incl. vendors)

Technology Footprint

>350

Products, Software, Tools

~37M

Lines of Code

Processing Rate

2.5M

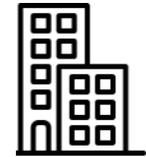
Integration msgs/day

ICT Operating Cost

\$111.2M

Annually

Interfaces



46

G2G linkups



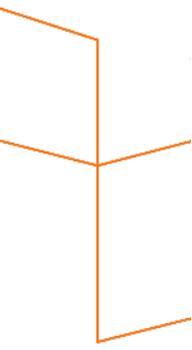
48

G2B linkups
(e.g. Banks)

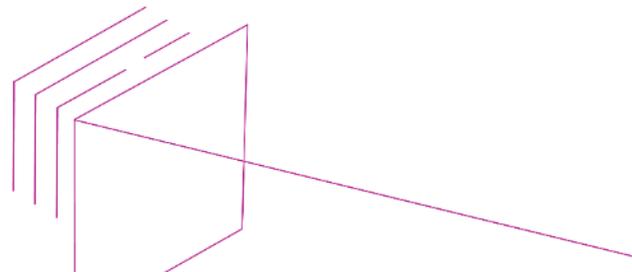


149

API subscribers



OUR STRATEGY FOR THE FUTURE



The Next Lap

A multi-year commercial cloud adoption journey that will see us overhauling our entire IT architecture into one that is:

built on microservices;

predominantly cloud-native;

based on zero-trust networks;

modernisation of our technology inventory.



The Impetus

Re-define taxpayer and staff experiences

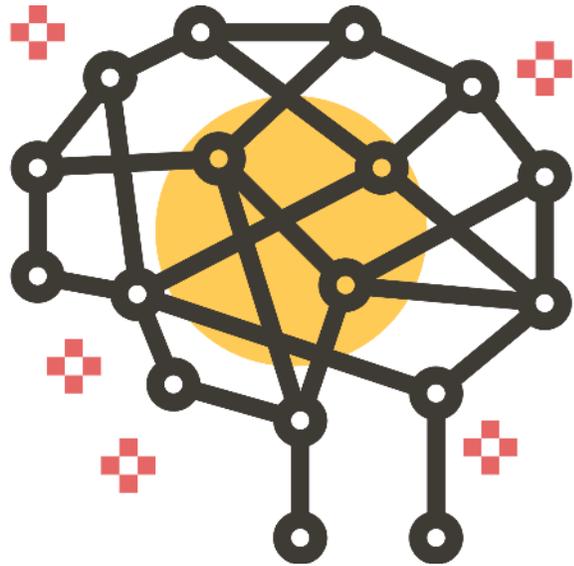
Achieve greater alignment with WOG and Smart Nation directions



Leverage appropriate cutting-edge technology

Enable IRAS to better take on nation-wide projects

Our Strategy



Technology



Experience Design



HOSTING

ARCHITECTURE

MESSAGING

SECURITY

PIPELINE

METHODOLOGY

Fundamental Shifts

● HOSTING

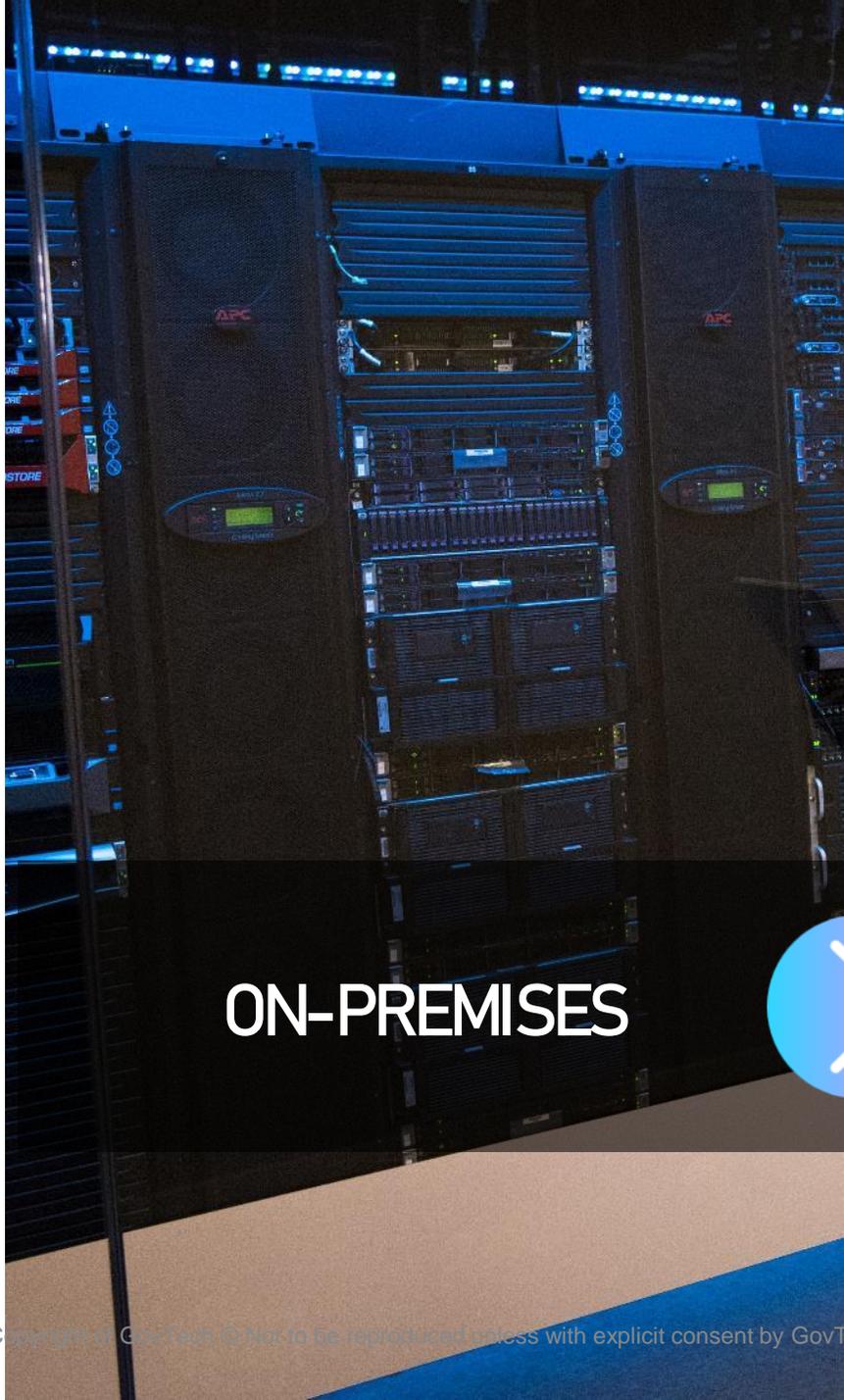
● ARCHITECTURE

● MESSAGING

● SECURITY

● PIPELINE

● METHODOLOGY



ON-PREMISES



GOVERNMENT
COMMERCIAL CLOUD



HOSTING

ARCHITECTURE

MESSAGING

SECURITY

PIPELINE

METHODOLOGY

MONOLITHIC

MICROSERVICES

HOSTING

ARCHITECTURE

MESSAGING

SECURITY

PIPELINE

METHODOLOGY



TRANSACTIONAL



EVENT-BASED

HOSTING

ARCHITECTURE

MESSAGING

SECURITY

PIPELINE

METHODOLOGY



PERIMETER
STATIC



ZERO TRUST



HOSTING

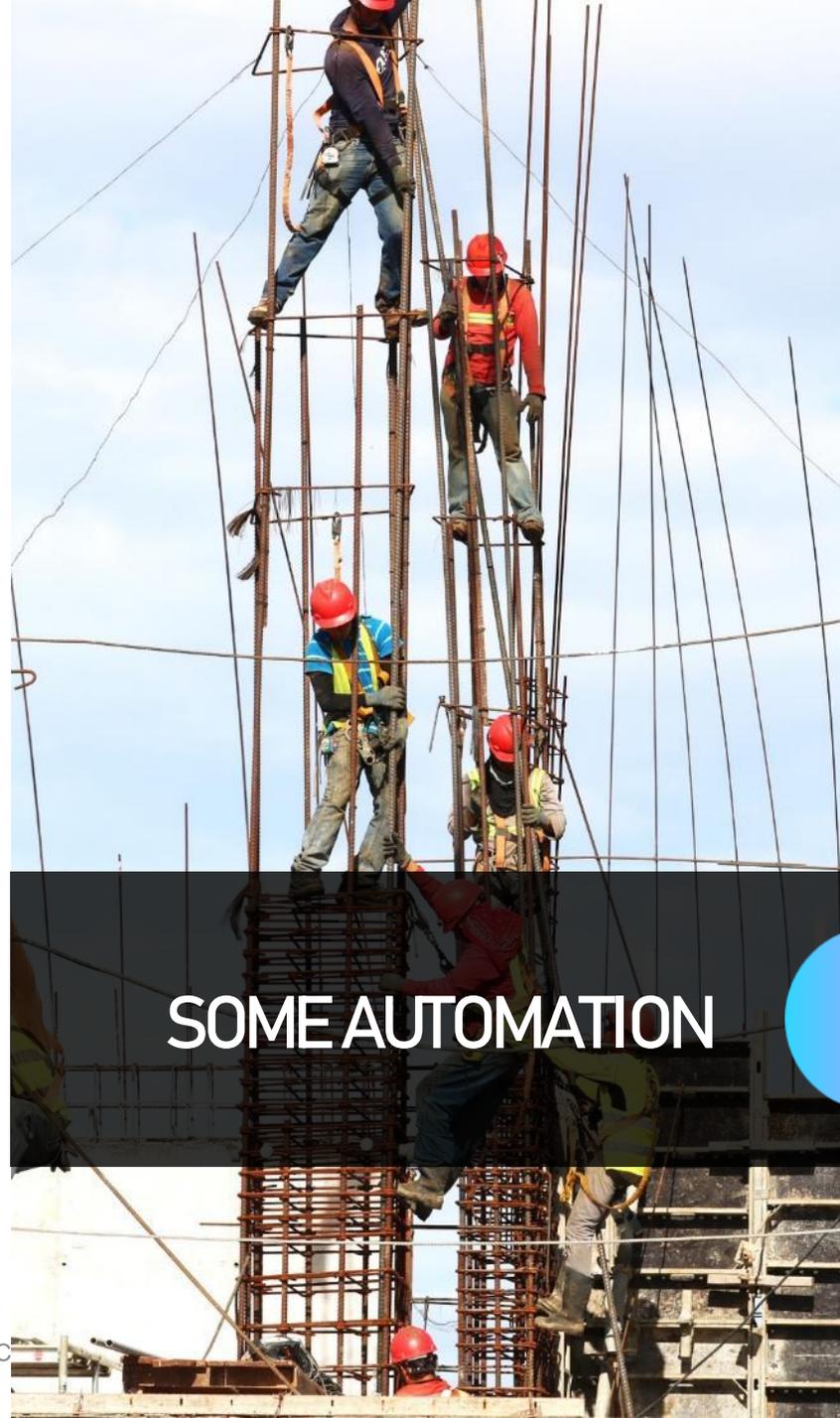
ARCHITECTURE

MESSAGING

SECURITY

PIPELINE

METHODOLOGY



SOME AUTOMATION



DEVSECOPS
MAXIMISE AUTOMATION



HOSTING

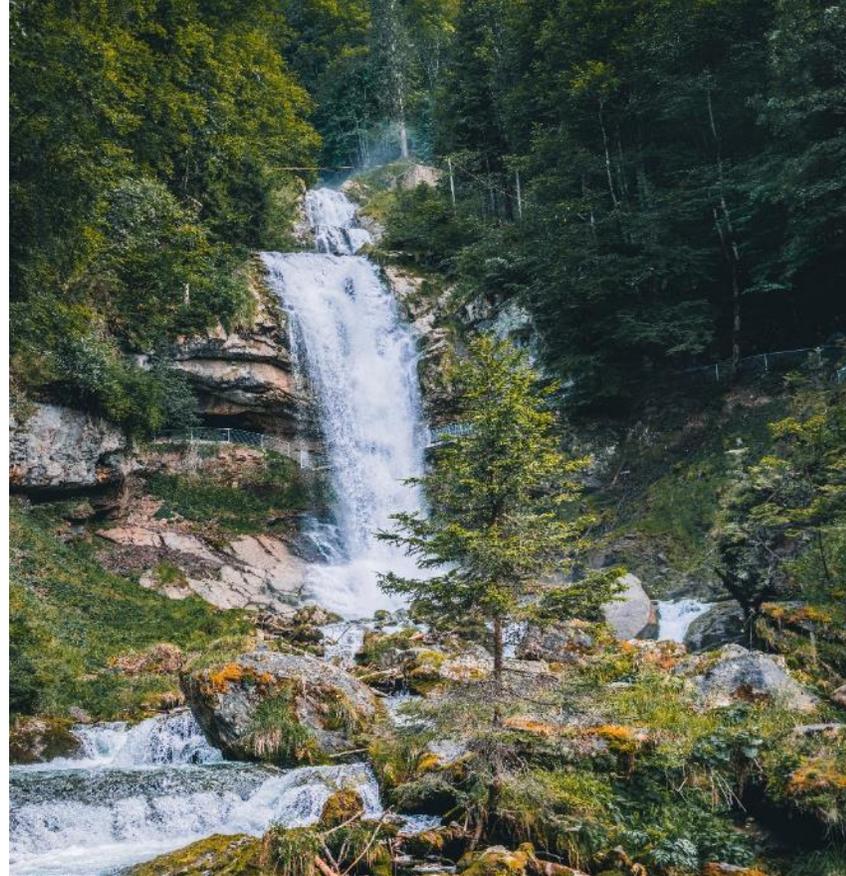
ARCHITECTURE

MESSAGING

SECURITY

PIPELINE

METHODOLOGY



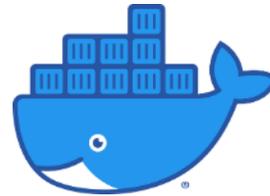
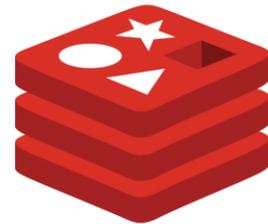
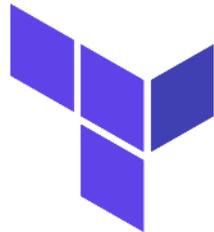
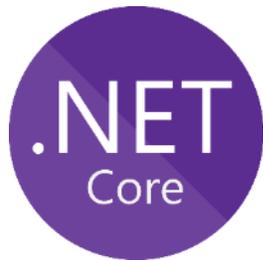
WATERFALL / SDLC



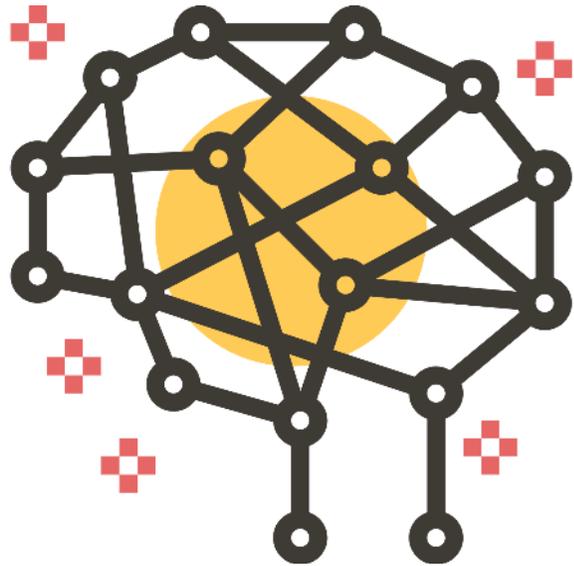
AGILE



Modernising Our Technology Inventory



Our Strategy

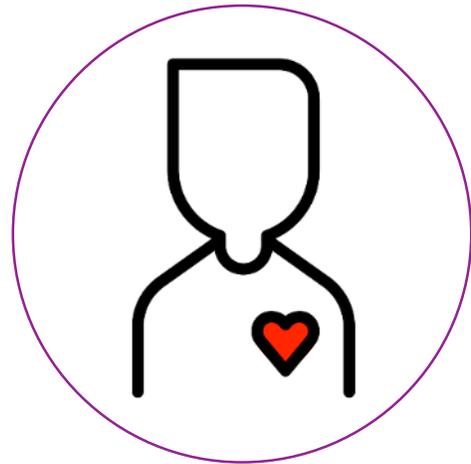


Technology



Experience Design

Experience Design Strategy



> 4.8 million
taxpayers

It's about our **customers**

and re-defining the experience for them



User Journeys

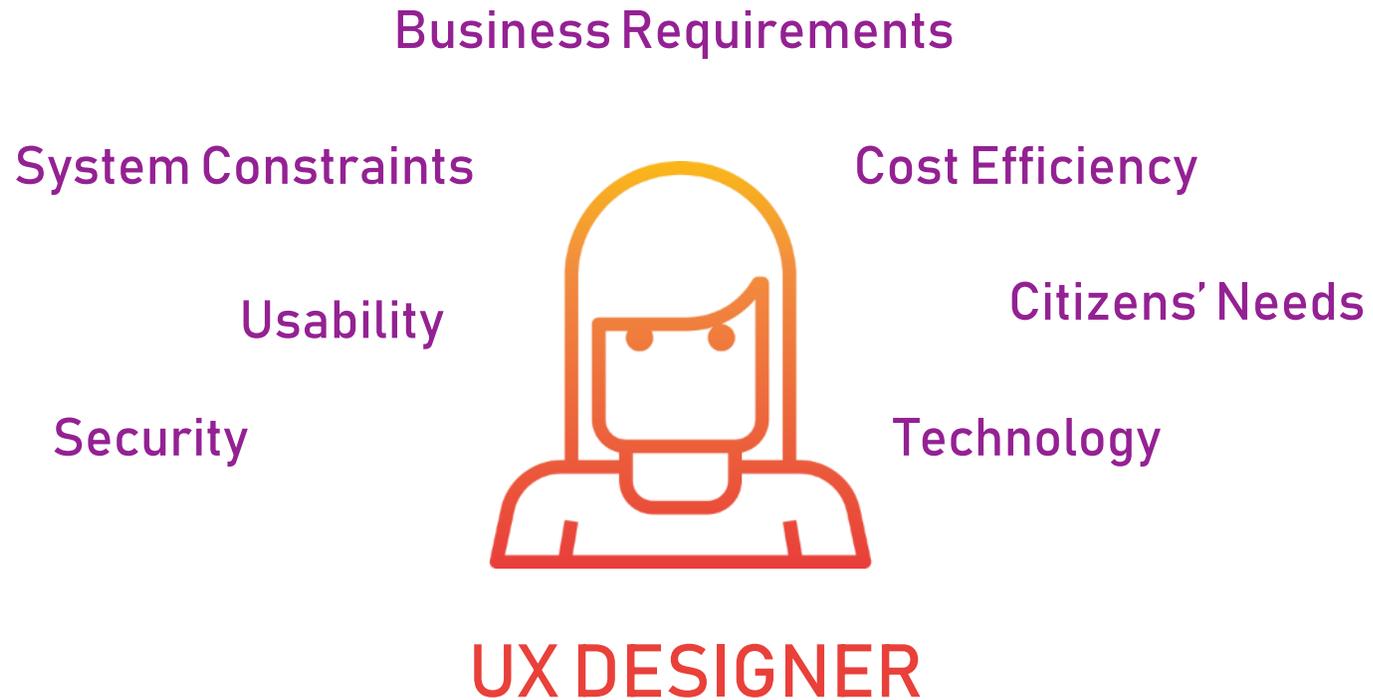


Conversations



Co-Create Solutions

Experience Design Strategy



Designer
balancing on a
tight rope

Experience Design Strategy

Design X Technology

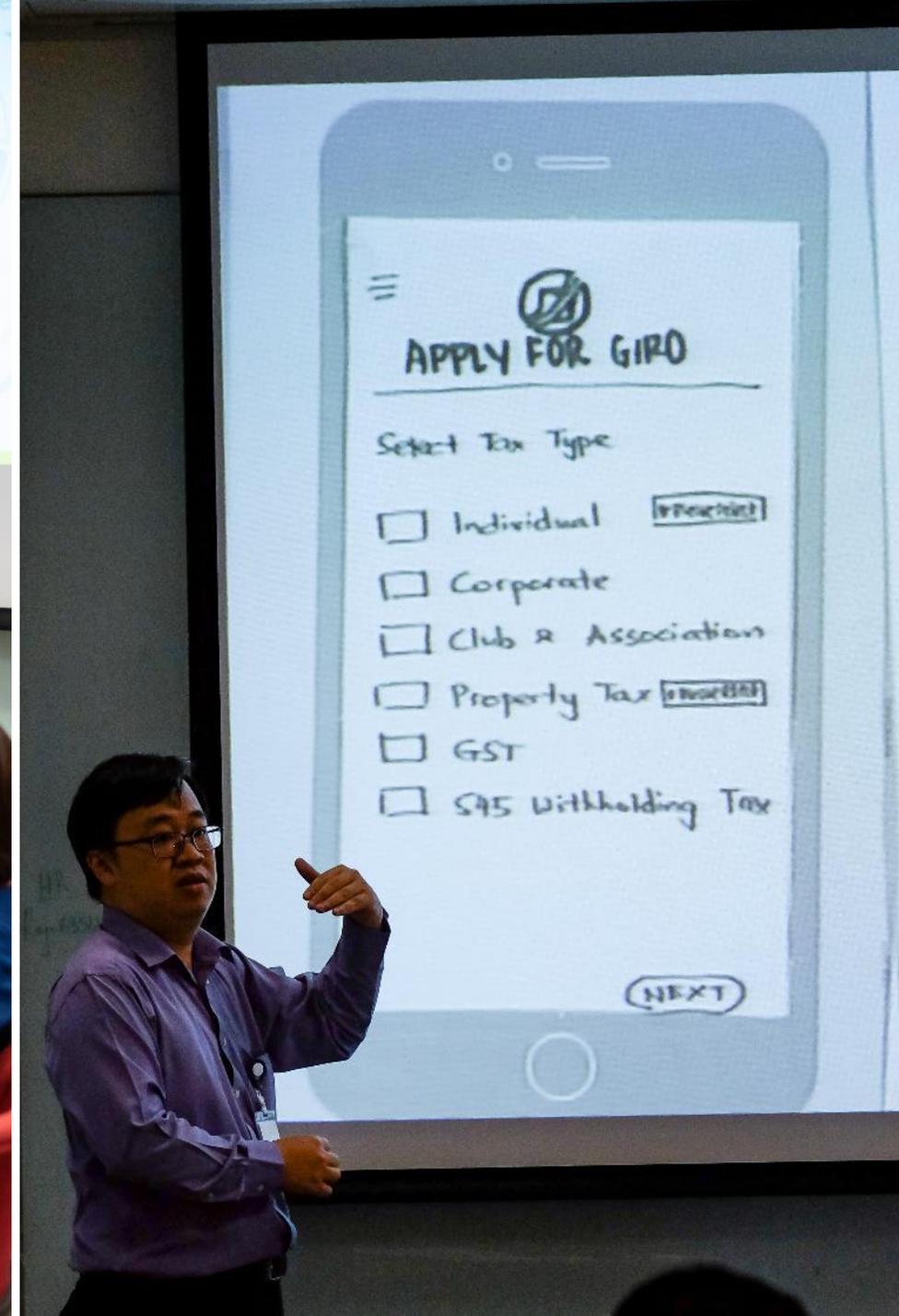
UX Designers



Technical Team

Design x Technology

UX Appreciation Workshops for developers



APPLY FOR GIRO

Select Tax Type

- Individual **Required**
- Corporate
- Club & Association
- Property Tax **Required**
- GST
- S45 Withholding Tax

NEXT

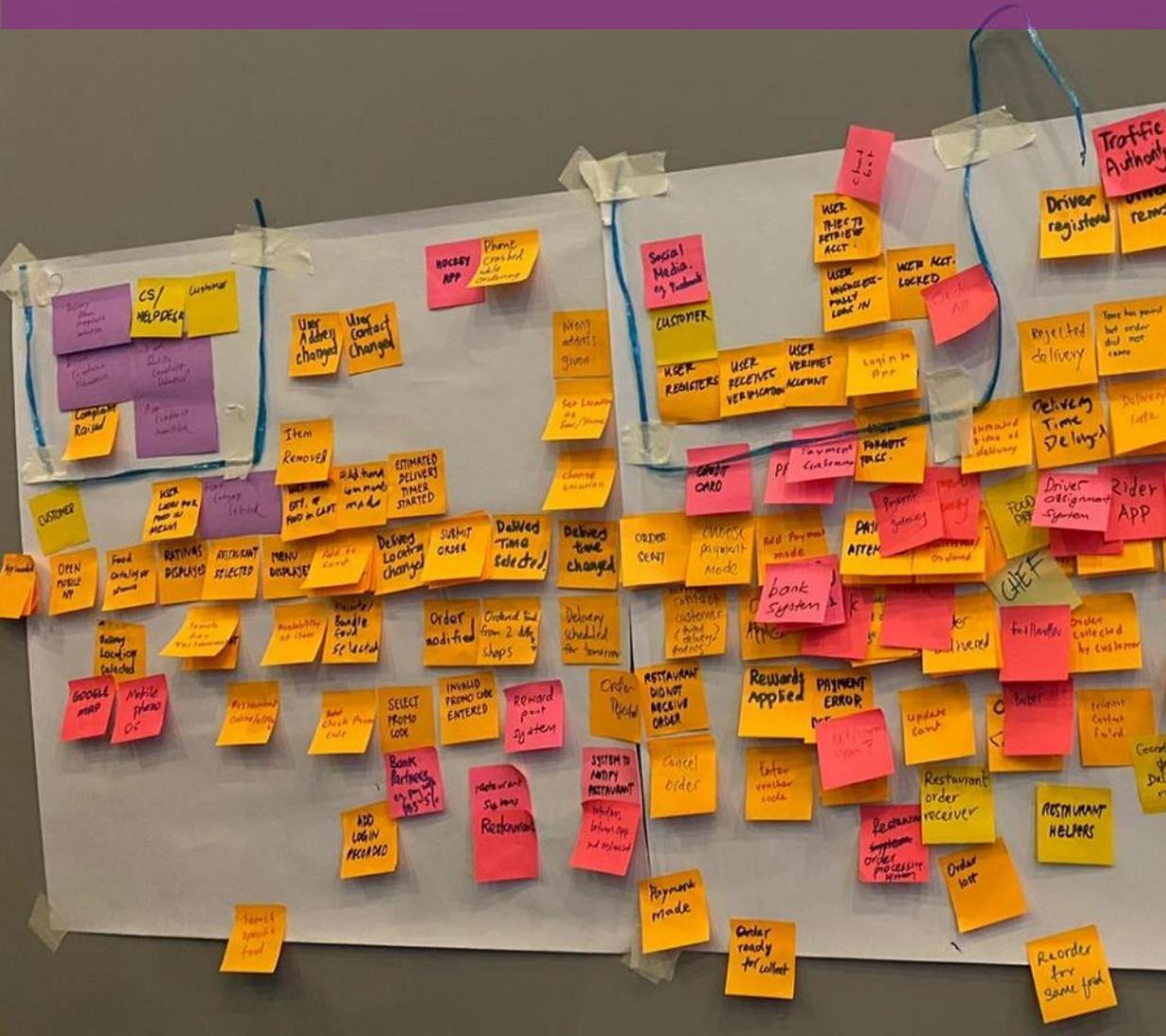
Design x Technology

Regular meetings with Product Owners



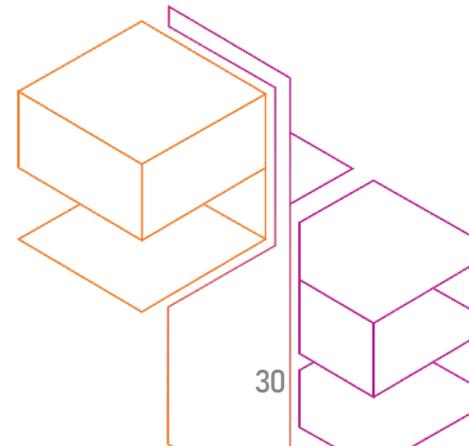
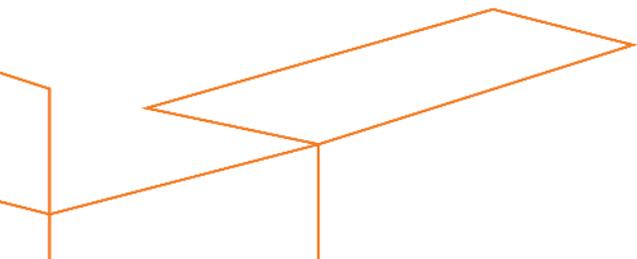
Design x Technology

Domain-Driven-Design – segregation of microservices



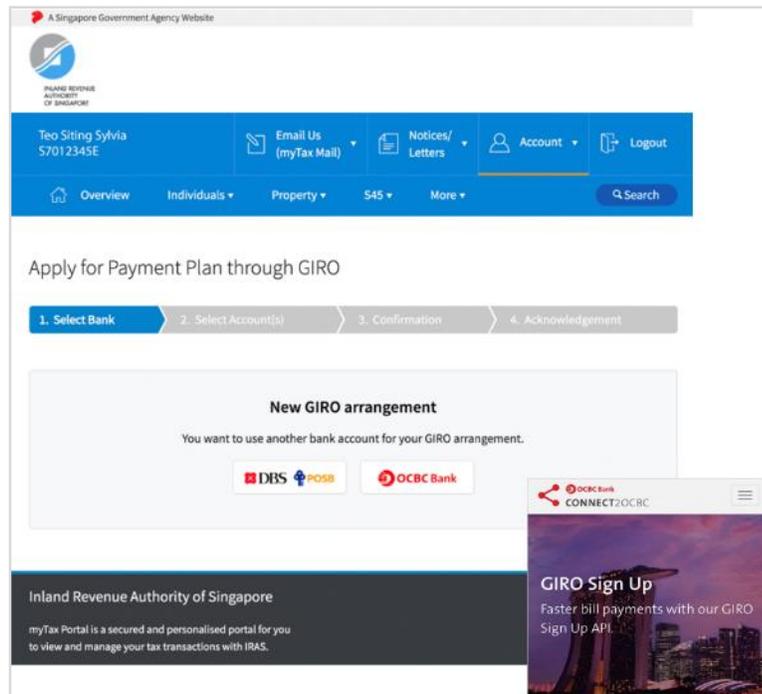
Experience Design Strategy

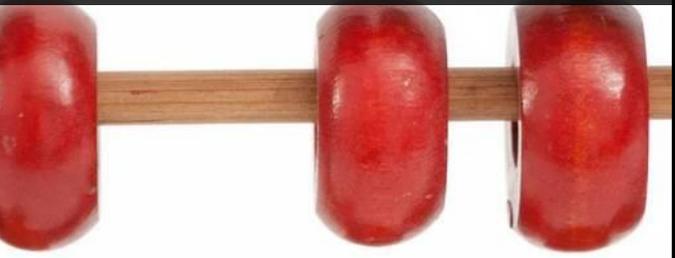
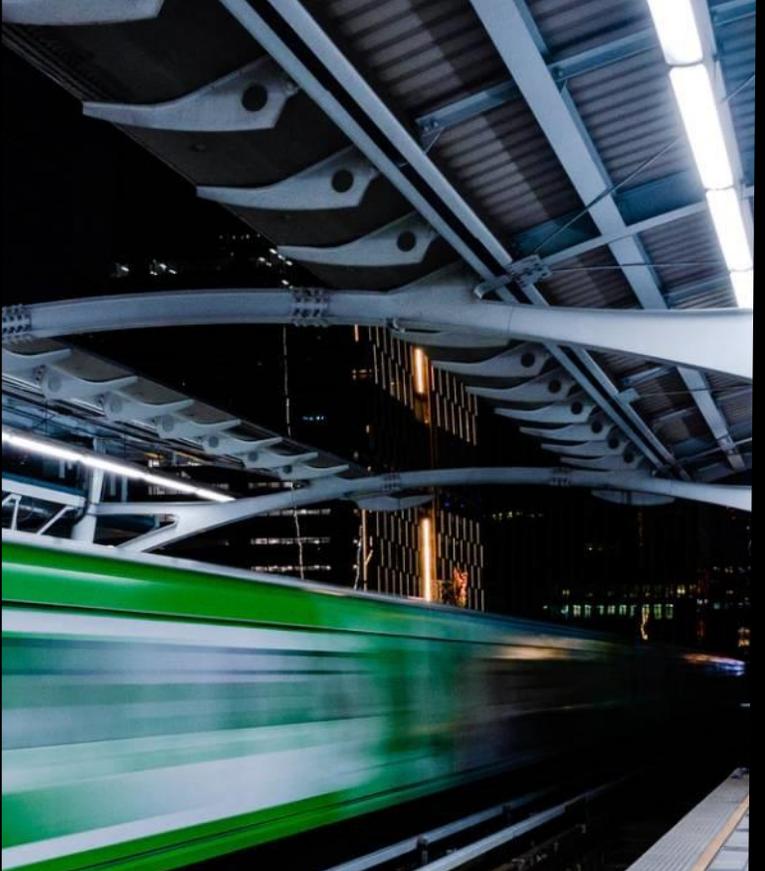
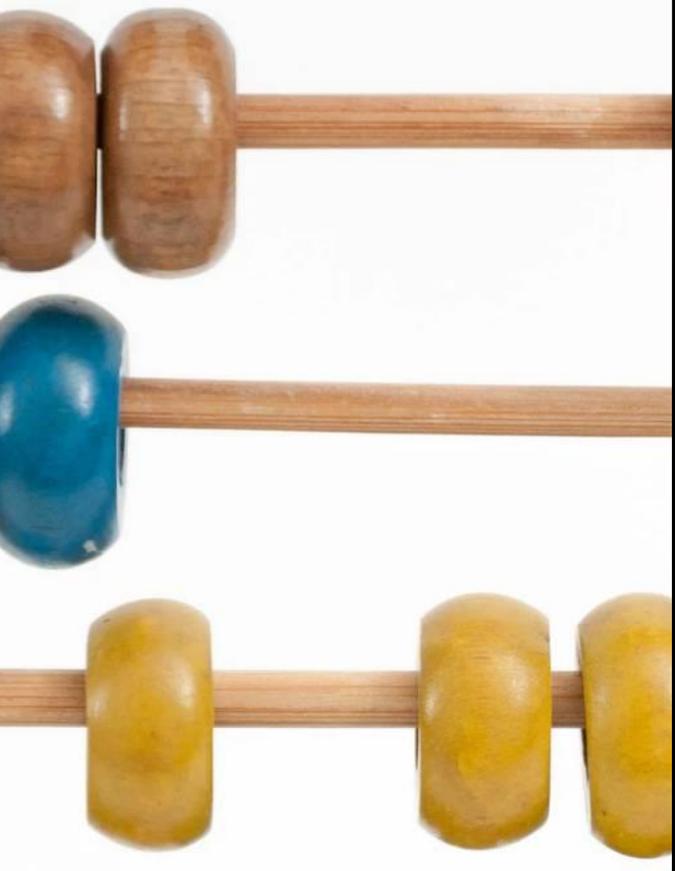
Creating technically feasible
solutions that are **seamless**



Re-defining Taxpayers' Experience

Apply GIRO through API - for instant approval





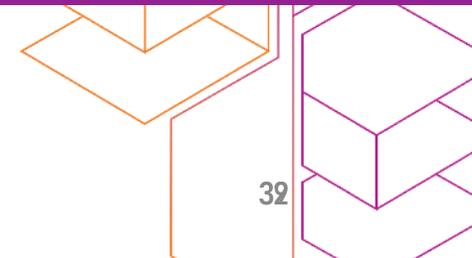
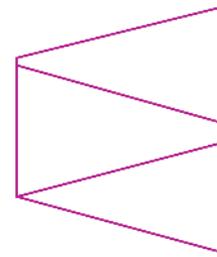
PROLIFERATION



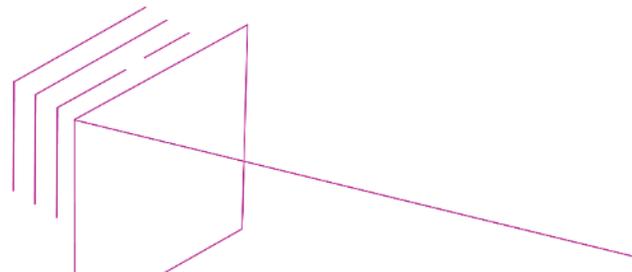
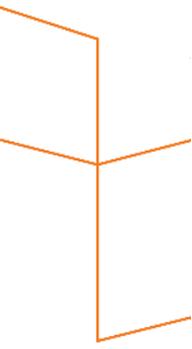
**OPTIMISATION
(REDUCTION)**



**NO NEED FOR SERVICE
IS THE BEST SERVICE**



CONCLUSION



IRAS' System Evolution

Data Processing

IMS
(1989 - 1995)



Automation-Focused



100% Manual Checks



Organized by tax types

Pipeline Processing

IRIS
(1995 - 2004)



Efficiency-Focused



Exception-based (80:20 rule)



Integrated Tax System



Organized by functions

Taxpayer Centric
One-Stop Self Service

IRIN
(2004 - 2012)



Customer/Staff focused



Straight through processing



KM & Learning Organization



Best-of-breed/
Best practice



Organized around taxpayer

Tech Refresh
Optimization

IRIN2
(2012 - ...)



Automated Testing



Optimization of system resources through virtualization



Improved System Integration



New capabilities through new technologies

Modern Capabilities & Improved Agility
Redefined Experiences
Productivity Improvements

IRIN 3



Enhance processing capabilities with **Microservices** architecture



Improve agility and quality by leveraging on **Commercial Cloud** and **DevSecOps**



Leverage **Data** and **Design-Driven** approaches to **Redefine Experiences**



Achieve **productivity improvements** for both IRAS and Customers

IRIN 3's Timeline

Phase 1 (Multiple Releases)



To enhance IRAS' capabilities for Digital Notices and Document Management

Phase 2



To establish IRIN3's technical foundation layer, building Stamp Duty as the first tax type.

Phase 3 (Multiple Releases)



To modernise the remaining tax types on IRIN3 framework progressively.

2020

2021

2022

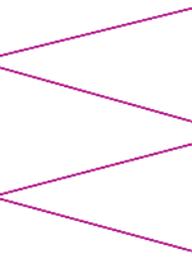
2023

2024

2025

We are here!

What have we learnt



Crucial to build on past transformation experience

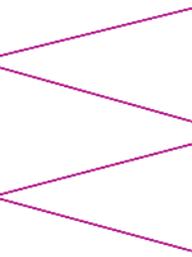
- What we are doing is not entirely new to our leaders, users and IT teams

There is always the next transformation

- Don't let perfection be the enemy of the good

Make bold but calculated choices on technology adoption

- Do not need the latest and loudest technology
- May not be the worst idea to be early adopters of new technology, provided the factors are right

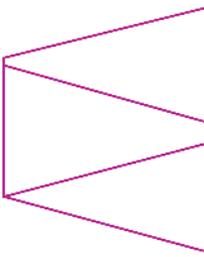


To succeed, we need the **right people and partners**

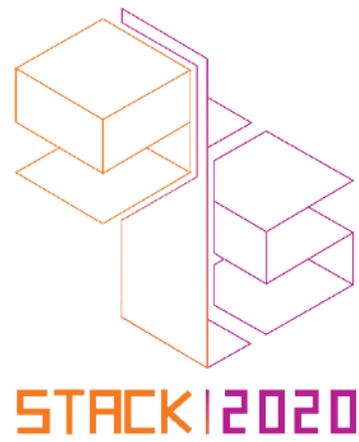
Opportunities to work on large-scale implementations and innovative technologies at IRAS

Ambitious multi-year plans, and a good track record working side by side with many capable partners to deliver.

Open and keen to co-create experiences with solution providers. In fact we have a Digital Partnership Team that can work with service providers.



DESIGN × TECHNOLOGY = REDEFINING EXPERIENCES



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