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AI Futures: How AI and robots will change Singapore's public sector

Interview with Dennis Lui, Chief Executive at VITAL.

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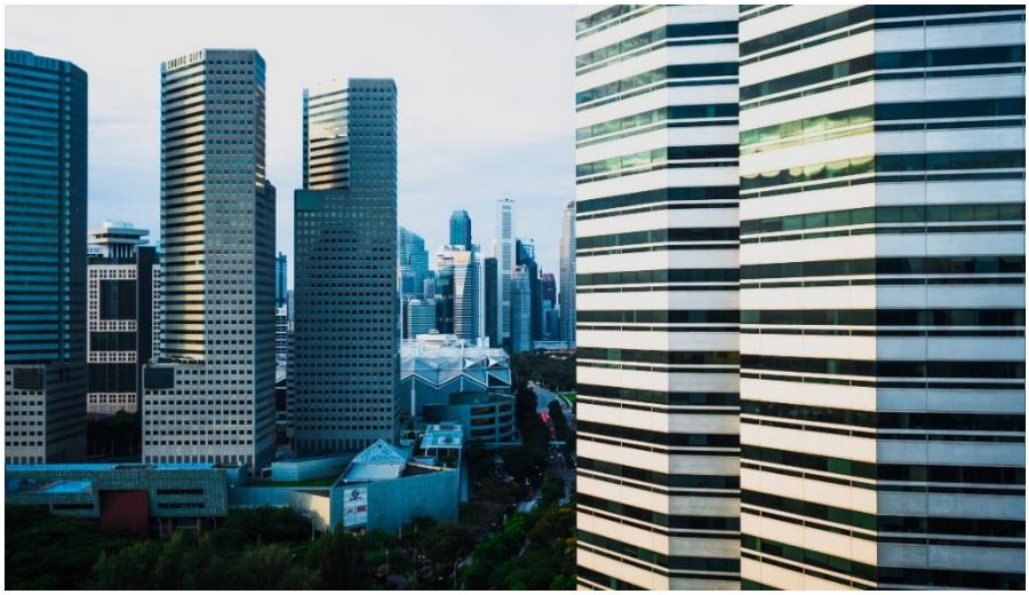
29 JUL 2021

AI



What are the main priorities of VITAL for the post-pandemic future?

The main priorities of VITAL are to transform our service delivery and enhance our value proposition for Singapore government agencies. We aim to transform to become the Central Agency for Corporate Shared Services where we are an Ops-Tech centre of excellence in the realm of Human Resources, Finance and Procurement common processes. In addition, we hope to provide predictive and prescriptive insights to policy owners to aid in decision making.

What are you biggest challenges to achieve these priorities?

We would need to upskill our people; that includes building up deep skills in data analytics, digital and automation capabilities. We see technology as an enabler to augment our workforce. Our officers will be more productive. In doing all this, the nature of our jobs would change. For example, I see every officer to be a supervisor of RPA bots.

What does a "hyper-connected" infrastructure mean to you? How can the implementation of automation into shared services improve government efficiency and ultimately benefit citizens?

We are increasingly using common platforms within the Singapore Government for corporate Shared Services. There is a huge opportunity for greater standardization and automation where possible. Through aggregation, we can perform more transactions with less resources, thereby freeing up officers' time to perform higher value-added work.

In addition, robust and resilient common Shared Services operations would translate to a higher level of governance and controls, as compared to a more decentralized approach. Ultimately, citizens would benefit because other Government agencies can focus their full efforts on providing better services to the citizens, without having to worry about whether their staff would receive their salaries on time, or their vendors would be paid promptly.

Last year, VITAL took on a new role to identify suitable robotic and automation tools to improve the public sector's admin services. Can you tell us a bit more about the roll-out of that project and its main successes and challenges?

There are many exciting technologies that could be applied to the HR, Finance and Procurement domains. VITAL is in a unique position to identify, experiment and facilitate the scaling up of suitable technologies across the Public Sector, as VITAL serves more than 100 Ministries/Agencies.

One of our first initiatives has been to adopt a Citizen Developer Strategy with the intention to make technological solutions more accessible to the staff. Together with a group of other Government agencies, we are leading the experimentation of no/low code solutions to enable more users, especially those without programming skills, to develop their own scripts and to reap benefits of automation.

A second initiative is to improve our current bot library platform – the aim is to be a one-stop resource for the entire public sector to exchange scripts, ideas and other important information under the theme of Robotics and Automation. We will improve the user navigation, expand sharing of resources and knowledge to more tools and technologies, beyond Robotics Process Automation, and to encourage proactive participation and sharing of information on Robotics and Automation from various agencies. Our belief is that achieving widespread adoption of Robotics and Automation tools cannot just be a top-down or centrally driven effort by VITAL. Rather, all agencies need to embrace this new way of working, and to come onboard this exciting journey.

As these are early days, I would not claim that we have achieved any significant success yet. But the journey is even more important than the destination. Through our citizen developer efforts, we are shining the spotlight on the importance of SkillsFuture – the fact that our staff must continuously learn new skills and harness technology to become more productive in the way they perform their work. To

support this, VITAL is investing heavily in our staff, by sending all eligible officers for Specialist Diploma or Certificate programmes in Data Analytics.

You have mentioned the importance of 'government and industry learning from each other'? In what key ways can public private collaboration help drive national success in the next digital chapter?

I have always been very inspired with the speed and agility of the private sector in terms of rolling out new products and services to serve their customers better. The public sector space is typically more conservative and risk averse, and not unexpectedly so given the nature of public sector work.

However, in areas like Shared Services for HR, Finance and Procurement, I believe there is much for Governments to learn from how the private sector industry has harnessed modern technology to achieve better outcomes. This is because the challenges we face are very similar. Hence, public sector leaders should carefully consider how to adapt and bring in some of the successful ideas from the industry into the public sector space.

For many government departments, AI is still at a relatively nascent stage in terms of practical applications. Why do you think this is, and how can governments shift an AI-enabled way of working from a vision to a reality?

The term AI may be scary to some staff as they may imagine a world of robots without the need for humans! The first step must be to articulate how AI ought to be used. For VITAL, I see AI as a tool to augment our human workforce by making them more productive, and not replace them. Concurrently, we must invest in the training of our workforce so that they can utilise Robotics and Automation technologies, like AI, RPA and all the others.

Public private collaboration is key in shifting an AI-enabled way of working from a vision to a reality as government agencies can tap on the knowledge and experience of private companies who have managed to successfully implement AI solutions in domains that have relevance to the public sector.

How do you establish effective data governance across shared services?

Data is an asset and we need to put in place strong governance structures to discover, collect, refine and safeguard the data while making them available to the right people. People, Process and Technology need to work hand in hand.

People – the roles, responsibilities and ownership structure must be clearly defined for all parties in the organisation to play their part. Senior Management needs to champion the importance of data governance. The Chief Data Officer and Chief

Information Officer have to work closely with Functional Business Units for cross collaboration, decision making and issue resolution.

Effective Data Governance is an on-going process where we define our Policies and Processes and continue to refine the Processes to ensure relevancy. Technology then enables the People to efficiently comply with the Processes.

In VITAL, we have a Record and Data Administration Group (RDAG) headed by a Chief Data Officer, who is a Senior Management staff, to oversee data governance, including the setting of guidelines and standards for data management, usage, sharing and security. All levels of VITAL staff are also made aware and regularly reminded of their responsibilities in the safeguarding and use of data, including the disposal of data that are no longer required.

The RDAG includes staff from the Functional Business Units and they work closely with the Chief Information Officer to explore the technological support needed to manage data more effectively. This is an area that VITAL is still refining to ensure that we make the best use of the data available to us to make good business decisions and also provide value to our Service Partners.

How can robotics and automation help extract and verify data?

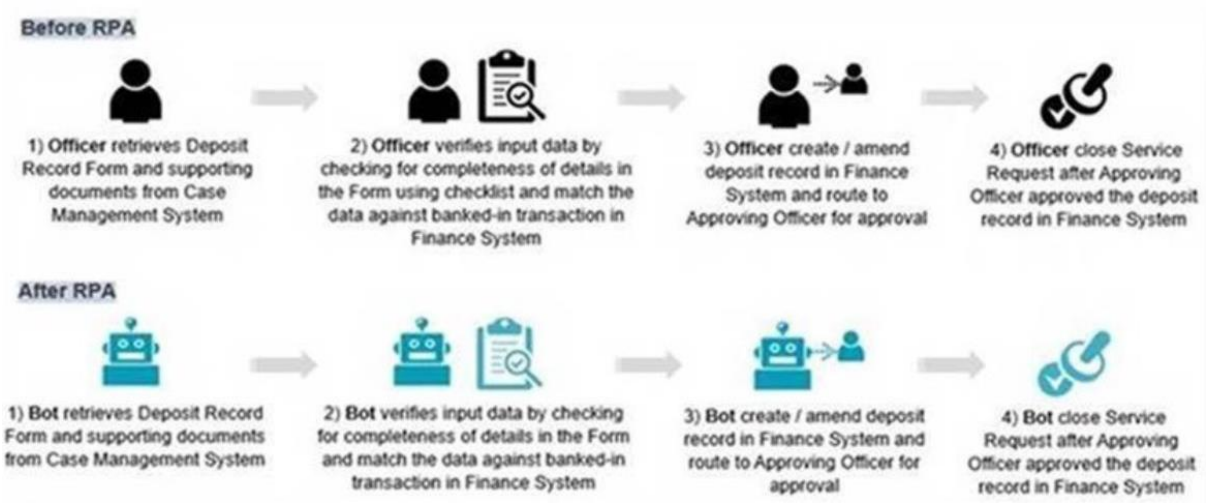
RPA software can identify data which are digital and structured, and extract the needed data based on the logic/condition coded by the RPA developer within the automation script. Similarly, RPA software can verify data based on rule-based handling.

Below is an illustration of how VITAL uses RPA to extract and verify data for an unattended finance process automation:

Finance Process – Deposit Record Creation

The deposit record creation process is a finance service provided by VITAL for more than 30 Singapore Government agencies. The unattended automation is used for multiple agencies and requires interaction with a central finance system.

Prior to automating this process, government agencies would receive collections / deposits and input their relevant information into VITAL's Deposit Record Form (i.e. an excel template) and submit this Form and its supporting documents as service request into VITAL's Case Management System accessible by the agencies. VITAL's officer would retrieve this Form and its supporting documents from the system and verify and input the data from the Form into a record in the Singapore Government's Central Finance System. Please refer to diagram below illustrating the process before and after automation.



The unattended automation of this process allows the robot to extract the relevant information from the Form and input the data into the Central Finance System. This enables the officer to just follow up on exception cases notified by the robot, instead of processing all transactions manually.

How does the digitalisation of Singapore's government services compare with that of other countries in the ASEAN region? When it comes to the digitalisation of government, where do you think the ASEAN region sits on the global landscape?

In Singapore, we are making a strong push for Public Sector Transformation, and this includes the adoption of digital practices and automation initiatives. I am sure the other ASEAN governments are doing the same, and I would be glad to learn from them!

What is the AI vision for Singapore's shared services? Do you believe that Artificial Intelligence will become the new normal for government services in the next digital era?

For VITAL, AI is yet another technology to augment the capabilities of our staff, so that we can create more value and impact for the agencies that we serve. For VITAL, AI can be deployed to enhance our operational capabilities.

I can cite three examples of current exploration. First, intelligent Chatbots would be able to help our officers answer the many questions received at our helpdesk, based on past and related queries. Second, Text Analytics is a promising technology has many potential use cases. Third, an intelligent engine to help us prioritize and escalate urgent tasks arising from service requests, would be useful, especially when resources are stretched during peak periods.

On the RPA front, we are augmenting with AI by exploring Document Understanding with Computer Vision capabilities to possibly read scanned documents and extract readable texts to enable information discovery and enhance searchability. Hopefully, our RPA bots would become smarter!

Interview responses have been edited for clarity.