



GSMA 5G Case Studies

5G CAN SAVE WAREHOUSES TIME AND MONEY

Singtel and Accenture use 5G to dramatically speed up stock picking and stock taking for Zuellig Pharma



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5G CAN SAVE WAREHOUSES TIME AND MONEY

Operator partner: Singtel + Accenture, Ericsson, Teamviewer, Aerolion • **Technologies:** 5G • **Country:** Singapore

Wholesale and retail sales processes are rapidly moving online. Although some online retailers' warehouses and distribution centres may have state-of-the-art sales systems, the product picking, shipping and stocktaking tend to be labour-intensive and costly manual activities.

Singtel has joined forces with Accenture and ecosystem partners to develop a solution that harnesses 5G, edge compute, augmented reality and drone technologies to help streamline these processes. The first implementation of the solution in Singapore was in warehouses operated by Zuellig Pharma, a large and expanding healthcare services business. Singtel and Accenture say their deep understanding of 5G, end-to-end capabilities and broad ecosystems made them the ideal solution providers for Zuellig Pharma.

As it expands, Zuellig Pharma is seeing more variety, size, and fluctuations in the stock its workers need to pick. To help its warehouse operations better cope with the increase in picks, across different periods of the month, the business is employing a 5G-enabled AR-Vision picking solution. Workers wear a 5G connected headset that superimposes digital information on to their view of the real world, helping them to quickly locate the right stock.

Singtel says a proof of concept solution boosted picking productivity by up to 30%. "This could be further enhanced once more features are built into the solution, enabling more accuracy and speed in picking," the operator adds. The solution is also having a positive impact on the warehouse operator experience and safety: with the AR headset, the pickers' hands are free and they don't need to juggle multiple devices.

At the same time, Zuellig Pharma is deploying 5G-enabled drones to speed up the stocktaking process. In the past, warehouse inventory was counted manually. Now, using a pre-loaded map to navigate, the autonomous drone's on-board camera scans barcodes as it flies past them. The resulting videos are transmitted to an edge compute facility to be analysed in near real-time - image recognition software decodes and translates the barcode.

A drone can scan through the warehouse at nine times the speed of a manual worker, freeing up time for the inventory team to work on more valuable tasks. Singtel hopes to further enhance warehouse throughput and capacity, as it enables more edge solutions and applications, such as warehouse utilisation analysis.

"There's no question that 5G is the key to truly transforming manufacturing and warehouse operations for the future," says Dennis Wong, VP, Enterprise 5G & Platforms, Singtel. "This is just the beginning."

Zuellig Pharma chose to use 5G because the wide area coverage will make it easier to scale the automated picking and stocktaking solutions. The choice of 5G was also guided by its responsiveness, the relatively low cost and high maturity of the technology.

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Dennis Wong - VP, Enterprise 5G & Platforms, Singtel

“5G has enabled our warehouse operations to be more efficient, productive, transparent and flexible,” says Maikel Kuijpers, Executive Vice President Distribution at Zuellig Pharma. “Its adaptability can help to support Zuellig Pharma’s evolving needs as we continue to make healthcare more accessible to the communities we serve.”

A broad ecosystem came together to co-create the solutions:

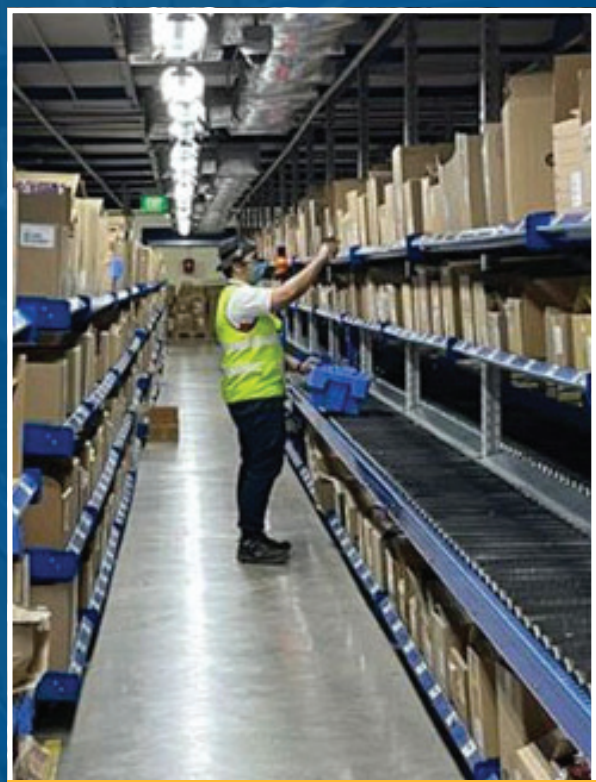
- ▶ Singtel provided the portable 5G platform GENIE, developed by Ericsson, and infra structure knowledge.
- ▶ Accenture designed and brought the different solutions together to orchestrate the 5G-enabled warehouse and enable value tracking and realisation for Zuellig Pharma.
- ▶ TeamViewer, Realwear and Zebra provided their AR-vision picking glasses and ring scanner solution.
- ▶ Aerolion provided the 5G autonomous drone.

“The results of this 5G-powered ‘warehouse of the future’ proof of concept speak for themselves, but at the end of the day, there’s nothing more rewarding than when innovation is the result of true collaboration with our clients and partners,” adds Pankaj Chopra, Managing Director, Global Accenture Partner for Singtel Group.

www.accenture.com/sg-en/case-studies/communications-media/singtel

“ GENIE’s ability to upend industries can’t be overstated. Its portability means that any company can experiment...and experience the true power of connected operations for themselves. ”

Martin Wiktorin - President & Country Manager for Ericsson Singapore, Brunei, Philippines & Pacific Islands



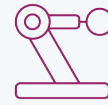
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MANUFACTURING AND LOGISTICS LEAD 5G ADOPTION IN APAC



The successful deployment of the 5G solutions at Zuellig Pharma highlights the value of developing ecosystems of partners that can make 5G easy to adopt across industries, Singtel says. The operator is working with Accenture and other partners to support a wide range of customer use cases, involving robotics, drones, mixed reality, video analytics, and other AI-centric use cases.

Industrial use cases, including manufacturing and logistics, look set to be the first major drivers of 5G adoption in Asia. “A lot of manufacturing happens in the APAC region, with one of the largest production network (logistics) in the world to support these activities,” Singtel notes. “The need to track an integrated supply chain where a single product is built and assembled in multiple location is expected to drive 5G adoption in the enterprise market.”

Describing 5G as a foundational technology, the operator says it is working to expose various capabilities of the underlying infrastructure, including both connectivity and edge computing. “This means bringing compute nearer to where the data is being generated, providing infrastructure capabilities and telemetry to our technology partners to build new end-to-end applications,” Singtel explains.

THE FIRST STANDALONE 5G NETWORK OF ITS KIND IN ASIA



Singtel says it is now in the advanced stages of 5G deployment and is rolling out the network “aggressively” to provide coverage to customers. Its 5G standalone network can use both the 3.5GHz and mmWave spectrum bands, supported by edge computing capacity. Designed to encourage adoption of 5G applications and services by Singapore government agencies, Singtel’s standalone environment is the first of its kind in Asia, the operator says.

Singtel is providing Singapore’s government agencies with 5G devices and SIMs, as well as network infrastructure and a variety of edge computing propositions. It is also engaging with ecosystem partners to deliver on their ideas, proofs of concept and use cases. Singtel flags the importance of developing clear business models that show the potential return on investment in 5G-enabled solutions.



Whereas the rollout of 5G in Singapore has been focused on implementing standalone networks underpinned by strong government support, the dynamics are different in other APAC countries. As APAC is a very heterogeneous region, the usage and impact of 5G differs significantly from country to country. Although APAC operators are innovating on specific areas and use cases for problems faced within the region, they also take a keen interest in how operators in other regions are employing 5G, Singtel says.

“Based on the current characteristics of 5G, the earliest use cases for 5G are predominantly high bandwidth, low latency use cases which are in the areas of immersive technologies (AR/VR), streaming and video analytics, and industrial use cases,” the operator adds. “These use cases leveraging on 5G and standalone networks, with edge compute infrastructure, are expected to drive early 5G adoption.”

Singtel expects 5G to complement other connectivity technologies, such as Wi-Fi 6. “Each technology plays a role due to either its wide adoption, economics or specific technology gap it fills,” the operator says. “Singtel will continue to play to the strengths of 5G, while supporting and integrating various other access technologies into our use cases.”



ABOUT SINGTEL

Singtel is Asia's leading communications technology group, providing a portfolio of services from next-generation communication, 5G and technology services to infotainment to both consumers and businesses. The Group has presence in Asia, Australia and Africa and reaches over 750 million mobile customers in 21 countries. Its infrastructure and technology services for businesses span 21 countries, with more than 428 direct points of presence in 362 cities.

For consumers, Singtel delivers a complete and integrated suite of services, including mobile, broadband and TV. For businesses, Singtel offers a complementary array of workforce mobility solutions, data hosting, cloud, network infrastructure, analytics and cyber security capabilities.

Singtel is dedicated to continuous innovation, harnessing next-generation technologies to create new and exciting customer experiences as we shape a more sustainable, digital future.

For more information, visit www.singtel.com.
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ABOUT ZUELLIG PHARMA

Zuellig Pharma is one of the largest healthcare services groups in Asia and our purpose is to make healthcare more accessible. We provide world-class distribution, digital and commercial services to support the growing healthcare needs in this region. The company was started a hundred years ago and has grown to become a US\$13 billion business covering 13 markets with over 12,000 employees. Our people serve over 350,000 medical facilities and work with over 500 clients, including the top 20 pharmaceutical companies in the world.

More recently, we launched our Zuellig Health Solutions Innovation Centre to develop new services and address some pressing healthcare needs in Asia. Since then, our teams have been focused on creating data, digital and disease management solutions, supporting patients with chronic conditions and helping payors manage healthcare costs.

ABOUT ACCENTURE

Accenture is a global professional services company with leading capabilities in digital, cloud and security. Combining unmatched experience and specialized skills across more than 40 industries, we offer Strategy and Consulting, Technology and Operations services and Accenture Song—all powered by the world's largest network of Advanced Technology and Intelligent Operations centers. Our 699,000 people deliver on the promise of technology and human ingenuity every day, serving clients in more than 120 countries. We embrace the power of change to create value and shared success for our clients, people, shareholders, partners, and communities.

Visit us at accenture.com.

ABOUT ERICSSON

Ericsson enables communications service providers to capture the full value of connectivity. The company's portfolio spans the business areas Networks, Digital Services, Managed Services and Emerging Business. It is designed to help our customers go digital, increase efficiency and find new revenue streams. Ericsson's innovation investments have delivered the benefits of mobility and mobile broadband to billions of people globally.

Ericsson stock is listed on Nasdaq Stockholm and on Nasdaq New York. www.ericsson.com