

PERSPECTIVE

RESEARCHERS AT ISEAS – YUSOF ISHAK INSTITUTE ANALYSE CURRENT EVENTS

Singapore | 10 April 2019

Batam's Emerging Digital Economy: Prospects and Challenges

*Francis E. Hutchinson and Siwage Dharma Negara**

EXECUTIVE SUMMARY

- Batam's industrial sector is weakening – the electronics industry has flatlined, shipyards are now empty, and new investors are few. Over the past two years, Batam's growth has dropped to 2 percent p.a. and unemployment is at 9 percent. The authorities are seeking to revitalise the manufacturing sector by improving the ease of doing business, rolling out new tax incentives, and promoting new activities.
- In this context, there are hopes of boosting Batam's fledgling info-tech sector, which is attractive for Indonesia's young work-force and fits into national priorities to promote high value-added industries. A small cluster of 40 software-related firms has emerged in Batam over the past two years, and employs some 150 workers in the Nongsa area.
- Batam has some assets for the digital economy, including proximity and well-developed transport connections to Singapore, good telecommunications infrastructure, and labour which is considerably cheaper. These factors fuelled Batam's earlier industrial growth and there is potential for replicating the migration of Singapore businesses seeking lower costs in Batam for the info-tech sector.
- However, there are longer-term structural issues that must be addressed for Batam's digital economy to grow significantly. These include enlarging the pool of stakeholders, attracting skilled workers, ensuring that local residents benefit, and tailoring the investment regime to the needs of service sector activities.

** Both writers are Senior Fellows and members of the ISEAS – Yusof Ishak Institute's Regional Economic Studies Programme.*

INTRODUCTION

Beyond well-known areas such as Batamindo Industrial Park, Kabil Port, and the shipyards around Batu Ampar, investors have a new destination in Batam. It is Nongsa Digital Park, located on the island's northeast corner; and now receiving owners, managers, and talent scouts from Singapore.

Inaugurated in March last year, the Park consists of several smallish buildings grouped around a lake where about 150 people work for 40 firms. These IT professionals are engaged in web design and development, retail analytics, logistics, financial services, and workflow process management. Rather than using separate offices, these people gather in large shared spaces consisting of long tables with individual work stations. When necessary, they use separate rooms for in-depth discussions and, in other cases, teams working on specific projects occupy purpose-built and fitted rooms. The atmosphere is young and dynamic, with stencilled patterns on the walls, table football in the corner, and most people dressed in black.

Despite the informal vibe, these programmers and web designers work intently and are closely integrated into work being done in Singapore. Beyond being wired into headquarters, these professionals often travel to the city-state for training and, in other cases, supervisors come across to Batam to supervise or induct new hires. Output, motivation, and career development are monitored closely on-site.

In many ways, this model is a replica of the manufacturing operations already linking Batam and Singapore. On one hand, firms based in the city-state are driven by labour shortages and rental prices to set up offshore work in nearby locations and, on the other, Batam offers proximity, good logistics connections, and abundant lower-cost labour. The Indonesian island also has excellent telecommunications connections, ensuring rapid and reliable Wi-Fi. That said, this sector exhibits diversity in terms of its structure, ownership composition, and policy needs, requiring a different approach from decision-makers if it is to develop successfully.

This Perspective looks at the development of the digital economy sector in Batam through: tracing how it developed; analysing its comparative advantage; and setting out its key challenges going forward.

BACKGROUND

During the 1990s and early 2000s, Batam was one of the motors of Indonesia's economy. Central government support saw the island benefit from heightened infrastructure investment, aggressive marketing, and free trade zone status - which allowed investors to import and export items duty-free (Smith 1996; Wong and Ng 2009).

Driven by its proximity to Singapore, low-cost labour, and growing logistics connections, the manufacturing sector grew rapidly. Electronics firms and then ship-yards set up operations on the island – generating hundreds of thousands of formal sector jobs in the process. During the 1990s and early 2000s, Batam grew at more than 10 percent p.a. and

the island's population swelled from 100,000 people in 1990 to 1.2 million in 2016 (Hutchinson 2017).

Yet, over the past two years, Batam has had to deal with declining foreign investment. Following a large-scale industrial relations dispute, the island's legions of electronics manufacturers have thinned, and new arrivals are few and far between. Its once-humming shipyards are empty, hit by a market downturn as well as cabotage rules that seek to promote the domestic ship-building sector and penalize production within export-focussed duty-free areas such as Batam. Relatively higher wage costs relative to those elsewhere in Indonesia have not helped, nor have Batam's relatively under-developed logistical connections to the country's main population centres on Java and Sumatra (Hutchinson 2017; Negara 2017).

Indeed, in 2016 and 2017, the island registered a mere two percent p.a. growth rate, substantially under Indonesia's average of five to six percent. Unemployment has also shot up to nine percent, substantially higher than the national average of six percent. The only bright spot on the horizon is the tourism sector, which has continued to receive steady streams of visitors (BPS 2018).

Painfully aware of this situation, the authorities have acted across several fronts. First, they have sought to catalyse investment into traditional areas of the economy through marketing campaigns and improving the local regulatory environment. Second, they have sought to entice investors by moving from a Free Trade Zone towards a Special Economic Zone, which, in theory, entails a wider range of incentives. Third, the authorities have sought to bring in investment to greenfield areas, such as the aeronautical maintenance and repair sector. Lastly, the leadership of the agency in charge of marketing, infrastructure provision, and investor liaison, BP Batam has been changed three times in two years (Negara and Hutchinson, forthcoming).

However, while policy-making has focussed on the traditional motors of Batam's economy, a new sector offering interesting possibilities has emerged. Should it successfully establish itself, the digital economy sector could diversify the island's economy. Second, provided that appropriate skills are in place it can generate desirable jobs for Indonesia's young and rapidly-growing workforce. Third, to the extent that people from Batam and other Riau Islands are employed in the sector, the digital economy can help stem the emigration of locals in search of opportunities. And, this new sector is in line with current programmes and priorities that emphasise technology and high value-added operations.

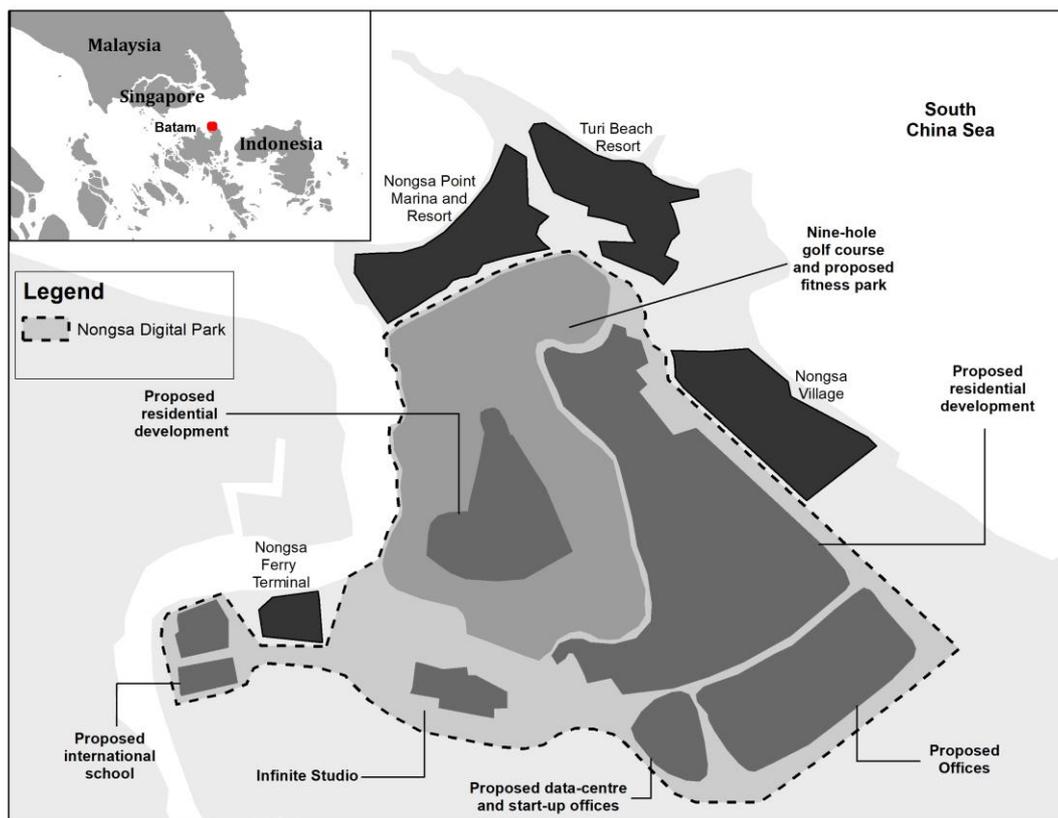
THE DIGITAL ECONOMY IN BATAM

The incipience of the digital economy in Batam can be traced back to the Citramas group, an Indonesian conglomerate active in the real-estate, tourism, infrastructure as well as oil and gas sectors. Long present in Batam, Citramas owns or has interests in diverse sectors on the island, such as: Kabil Port and an adjacent industrial estate; tourism facilities such as Nongsa Point Marine and Resort; and Infinite Studios, a media and creative services company.

In March 2018, Citramas launched the first phase of Nongsa Digital Park, which will be built in several phases. 100 hectares have been set aside for the Park as well as an

accompanying international data centre. Leveraging off existing infrastructure such as a dedicated customs and immigration terminal and existing ferry connections in Nongsa in Batam's northeast, the conglomerate plans to invest up to S\$700 million in the planned 100-hectare development facility. To date, three buildings with a capacity for 400 IT workers have been built and another six buildings are in the pipeline.¹ The Park aims to generate an estimated 10,000 jobs in this new sector.

Figure 1: Map of Nongsa Digital Park



Source: ISEAS GIS Map

At present, there are some 40 firms using the Park and employing some 150 IT professionals between them. The majority of the tenants are based in Singapore and come from a variety of sectors, mainly from digital economy-related fields such as: web design and development; marketing and data analytics; software development; insurance; and e-learning (Table 1). While most are start-ups, there are some established names that have set up shop there, such as the insurance giant, AIA. In addition, not all firms in the NDP are in technology- or IT-related fields, with one firm, Nanyang Inc, providing logistics support for outdoor events.

Table 1: List of firms in Nongsa Digital Park (NDP)

Firm	Sector(s)
Haulio	Logistics
FWD Insurance	Employee benefits insurance
NEUMENTITY	Web development, branding and design
Jublia	Business matching technology
AIA	Insurance
Liquidpay	Cashless payment solutions
anywhr	Tour and travel firm
Infinite Studios	Media and creative services
nexG	Enterprise, cloud, mobile, and IoT Service
Energy Eco Chain	Payment solutions for the energy sector
Stendard	Workflow process management
Web Imp	Web design and development
Haste	Retail analytics
HRnetGroup	Professional recruitment and staffing
LDR technology	Mobile technology and E-learning solutions
bridge5asia	Integrated asset management for real estate
gleematic	AI with robotics process automation
Data strategy	Marketing and analytics
Versafleet	Transport management software
Nanyang Inc	Logistics rental for outdoor events
Prospace	B2B technology company
Suzerin	Software development
Vouch	Customer service interface
xfers	E-payment solutions
Futureflow	Financial management for entrepreneurs
Quark Spark	Web design and development
LDR Technology	Mobile technology and E-learning
Trusted Source	IT services and solutions
Smarter Me	Online education for children
Xexcide	Business consulting for SMEs

Source: Site visit and company websites

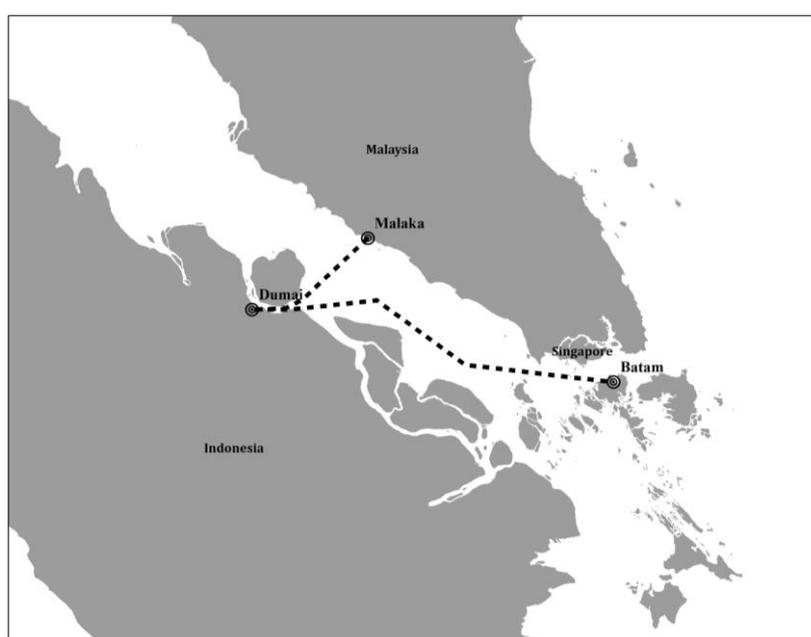
Why have these firms, many of which are small and capital-scarce, opted to source labour from Batam? First, as manufacturing firms found out in the 1990s, the island offers labour at a substantially lower rate than what is available in Singapore. For instance, the cost of hiring an IT employee in Batam is around S\$400-1,500 per month, while the cost in Singapore for a similarly qualified worker is in the S\$3,000-5,000 range.² In addition, while IT operations are not land-hungry, Batam's rental costs are attractive, which can be important for small start-ups. Thus, in the Digital Park, companies only rent work-stations and meeting-rooms on an as-needed basis.

The proximity to Singapore and well-developed transport connections are also key assets. Travel between the city-state and Nongsa Point takes a mere 40 minutes, served by a variety

of ferry companies. Thus, transport costs are low and return trips on the same day are possible.

Furthermore, Batam is equipped with good telecommunications infrastructure. The island is linked to the Batam-Dumai-Melaka (BDM) cable system, a 400-km intra-Asia regional submarine link-up between Malaysia and Indonesia. The cable system has two routes – Melaka-Batam and Melaka-Dumai – and consists of two fibre pairs, with a design capacity up to 1.28 terabytes per second. Completed in 2011, the cable system was developed by a consortium of three telecom companies – Telekom Malaysia Berhad (TM), Mora Telematika, and XL Axiata.

Figure 2: Batam-Dumai-Melaka (BDM) Cable System



Source: ISEAS GIS map

Batam is also connected to Singapore through a submarine cable system linking Batam Centre station to Telin station in the city-state. The total length of the Batam-Singapore Cable System (BSCS) is around 73 km, connecting the landing sites through six fibre pair cables. To further increase the reliability of the system, two separate land routes are utilized to transmit four 10-gigabytes-per-second channels.

Beyond the tenants in the Park itself, there is an ecosystem of firms and service providers developing – which bodes well for the sector’s survival. Infinite Studios, the media and creative services firm, is located next door, and currently employs 350-400 animators and programmers. Citramas has also signed a joint venture agreement with another local conglomerate, Sinar Mas Land, to develop an international digital business and services city on an 8-hectare swathe of land adjacent to the NDP.³

Another key player in the sector is Glints, a talent recruiter incorporated in both Singapore and Indonesia. The firm uses its network in the latter country to identify, recruit, and subsequently manage IT professionals. For the firms in the NDP, Glints works as a service provider, identifying promising professionals, matching them to current and emerging

needs, and handling HR issues. The firm also ensures that the professionals it finds are job-ready by putting them through an 8-week training camp prior to placement.

The NDP has also sparked interest from local education providers. One local university, Institut Teknologi Batam (ITEBA) has one of its campuses within the NDP itself. Others, such as the University of Batam, Cipta College of Oxford Batam, and Universitas Internasional Batam have produced graduates that are employed in the Park, and have also reached out to firms to establish their training needs. The NDP is also collaborating with Singapore's Temasek Polytechnic and Nanyang Polytechnic for internships, visits, and collaborative mentorships.

Beyond players in Batam, the island's digital economy sector has attracted national attention. The fledgling sector dovetails with national priorities, such as President Joko Widodo's plan to established 1,000 digital start-ups worth US\$ 10 billion by 2020.⁴ In September 2017, during the commemoration of the 50th anniversary of Indonesia-Singapore bilateral relations, the President mentioned that he wanted Batam to become a digital bridge connecting Singapore to digital clusters in other Indonesian cities, including Yogyakarta and Bandung.⁵

CHALLENGES

Despite its promise, the digital economy does face important challenges.

First, while this sector is a welcome component to Batam's diversification, it needs to be seen as one part of the overall push to revitalize the island's economy. Unlike traditional manufacturing operations which can employ hundreds or even thousands of workers, digital economy investments are skill-intensive but small-scale and asset-light. Consequently, in order to revitalize the island's economic fortunes, policy-makers still need to address systemic issues such as productivity and logistics connections between Batam and other parts of the country.

Second, due to its newness and inherent differences from traditional manufacturing sector activities, the digital economy has had to deal with a challenging regulatory environment. For example, the firms present in the NDP are not able to directly employ their workers, but need to go through a locally-incorporated third party, which, in this case, is Glints. This is because, under current regulations, any company with foreign ownership operating in Batam is required to incur a paid-up capital of about S\$250,000 to obtain a temporary business license. For a permanent license, companies are subsequently required to submit a business proposal and commit to spending S\$1 million. While well-suited to shipyards and electronics plants, these regulations are prohibitive for skill-intensive, yet low capital operations, like web design and fintech.

Third, due, in part, to these regulations, the ownership structure of the digital economy is restricted to a small number of players. At present, Citramas – through the NDP and Infinite Studios – and Glints are the major interests. The joint venture involving Sinar Mas is a welcome development and an important indicator of growing business confidence. In the months ahead, success in attracting established Jakarta-based digital businesses such as Go-Jek, Grab, and Traveloka would be an important milestone. Likewise, greater involvement

from government agencies such as BP Batam and the Batam municipal government would also help the sector's consolidation.

Fourth, the immediate benefits of the digital economy for local residents, many of whom do not possess the required qualifications, are less obvious. In the past, local residents have complained that they have been crowded out of jobs in manufacturing and tourism by people from Java and Sumatra. Beyond working with education providers to develop requisite skill-sets, transport links between the NDP and Batam's population centres can be strengthened.

Fifth, the number and quality of qualified workers need to be improved. This involves close and detailed coordination between higher education institutions and firms to develop tailored courses and university-industry linkages. And, at least in its early stages, freer movement of skilled workers from overseas such as senior-level data scientists, IoT solutions architects, machine learning engineers, user experience (UX) designers, and digital marketing specialists needs to be ensured.

Batam's fledgling digital economy sector is a welcome addition to the island's economy, and one that holds much promise, given Singapore's land and skill constraints, as well as Indonesia's vast labour pool. In addition, the latter country's own digital economy sector – to date based on Jakarta – could help further boost Batam's potential in the form of link-ups and investments.

The months ahead will be crucial for the sector. Policy-makers at the central and local level need to engage with firms present on the island to address regulatory bottlenecks and other issues. Linkages between education providers and NDP tenants need to be strengthened to ensure that the sector's demands for human capital are met. And local communities also need to be engaged, to ensure that benefits from the new sector are spread more widely. If these needs can be met in significant measure, Batam will be on the way to diversifying its economy, and generating highly-skilled jobs that can retain local graduates.

¹ Interview with NDP management, Nongsa, Batam, 28 November 2018.

² <https://glints.com/sg/hired/nongsa-digital-park-startup-founders-singapore-consider-offshoring/>. Accessed on March 18, 2019.

³ <https://ekbis.sindonews.com/read/1382251/34/sinar-mas-land-citramas-group-garap-area-ekonomi-digital-di-nongsa-batam-1551190417>

⁴ Bernardin Mario PN (2017). Startup Indonesia Jadi Target Investasi Perusahaan Teknologi Ternama, Kompas, October 9, 2017. Accessed March 11, 2019. Available at: <https://ekonomi.kompas.com/read/2017/10/09/210000326/startup-indonesia-jadi-target-investasi-perusahaan-teknologi-ternama>

⁵ Grace Leong (2017). Batam could serve as 'digital bridge' between Singapore and cities across Indonesia, says President Joko Widodo. Straits Times, September 7, 2017. Accessed March 11,

2019. Available at: <https://www.straitstimes.com/business/companies-markets/batam-could-serve-as-digital-bridge-between-singapore-and-cities-across>

<p><i>ISEAS Perspective</i> is published electronically by:</p> <p>ISEAS - Yusof Ishak Institute</p> <p>30 Heng Mui Keng Terrace Singapore 119614 Main Tel: (65) 6778 0955 Main Fax: (65) 6778 1735</p>	<p>ISEAS - Yusof Ishak Institute accepts no responsibility for facts presented and views expressed.</p> <p>Responsibility rests exclusively with the individual author or authors. No part of this publication may be reproduced in any form without permission.</p> <p>© Copyright is held by the author or authors of each article.</p>	<p>Editorial Chairman: Choi Shing Kwok</p> <p>Editorial Advisor: Tan Chin Tiong</p> <p>Managing Editor: Ooi Kee Beng</p> <p>Editors: Malcolm Cook, Lee Poh Onn, Benjamin Loh and Ng Kah Meng</p> <p>Comments are welcome and may be sent to the author(s).</p>
--	---	--