

China-ASEAN Information Harbor: The Digital Silk Road from Guangxi to Southeast Asia

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August 2021

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Abbreviations

ASEAN	Association of Southeast Asian Nations
BRI	Belt and Road Initiative
CAC	Cyber Space Administration of China
CABIS	China Asean Free Trade Area
CAEXPO	China Asean Expo
CAFTA	China Asean Free Trade Area
CAIH	China Asean Information Harbour
CAICT	China Academy of Information and Communication Technology
CIID	China Centre for Information Industry Development
CNCB	CAIH Nanning Core Base
DSR	Digital Silk Road
Lao PDR	Lao People's Democratic Republic
MIIT	Ministry of Industry and Information Technology
NDRC	National Development and Reform Commission
NGOs	Non-Governmental Organisations
RCEP	Regional Comprehensive Economic Partnership Agreement
SOE	state-owned enterprises
UN	United Nations
US	United States
USAID	United States Agency for International Development
WTO	World Trade Organization

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Summary and Main Points

- China-ASEAN Information Harbor is a Digital Silk Road project connecting China and ASEAN countries. Digital Silk Road is the digital dimension of the Belt and Road Initiative. China-ASEAN Information Harbor was launched in 2016 and hosted by Guangxi, a southwestern/mid-south provincial-level autonomous region that has a coastal area along the Gulf of Tonkin.
- Guangxi has become an important anchor in China-ASEAN economic relations in recent years. Xi Jinping has defined the three primary roles of Guangxi as an international corridor opening to the ASEAN region, a new strategic anchor for the opening-up and development of the southwest and mid-south regions of China, and an important gateway connecting the Silk Road Economic Belt and the 21st-Century Maritime Silk Road.
- China-ASEAN Information Harbor Co Ltd. (CAIH Co.) is a specially created company mandated to carry out the construction of the Information Harbor. It provides both digital products and services. The company has also entered the Southeast Asian markets and set up subsidiaries in Malaysia and Indonesia.
- The development of China-ASEAN Information Harbor has been as much about Guangxi's own digital development and transformation as digital connectivity with Southeast Asia. So far the project has focused more on creating the domestic digital foundation of Guangxi. However, in the long-term, the project is intended to establish Guangxi as the digital hub for the whole of southwest and mid-south regions of China, and to make Guangxi as China's southwestern gateway to the ASEAN region. Different ASEAN countries, based on their level of development, will draw different kind of opportunities in cooperating with the Information Harbor project.

Introduction:

Belt and Road Initiative and Digital Silk Road

The mammoth Belt and Road Initiative (BRI), first announced by China's leader Xi Jinping in 2013, has often been billed as the largest infrastructure construction initiative in history. By now, the BRI includes perhaps hundreds of physical infrastructure projects (such as rails, roads, bridges, ports, energy supplies), mostly concentrated in developing countries. The BRI promises a vision of connectivity within and between nations where potential benefits accruing from transnational flows of capital, goods, skills, technologies and people, unlocked by the physical infrastructure construction projects, will be realized. Officially, the BRI also encompasses not just infrastructure connectivity but also policy coordination, trade facilitation, financial cooperation, and people-to-people exchanges (in total they constitute what is known as "the five areas of connectivity" in the official discourse), although infrastructure connectivity remain the most significant and visible manifestation of the initiative.

The Digital Silk Road (DSR) essentially is the extension of the BRI in the digital/cyber sphere (China Center for Information Industry Development, 2017: 20-21). The notion of the DSR first appeared in as early as 2014, within the document *Basic Planning for Infrastructure Connectivity with Neighboring Countries*, prepared by the Ministry of Industry and Information Technology (MIIT), presented as MIIT's policy plan in support of the BRI agenda.

It highlighted the necessity of the building of "information highways" between China and neighboring countries.¹ The authoritative 2015 document on the BRI, *Vision and Actions on Jointly Building Silk Road Economic Belt and 21st Century Maritime Silk Road*, alluded to the concept of "Information Silk Road" and called for the advancing of "the construction of cross-border optical cables and other communications trunk line networks," improvement of "international communications connectivity," and improvement of "spatial (satellite) information passageways to expand information exchanges and cooperation."

In July 2016, the General Office of the Chinese Communist Party and the State Council jointly issued the document *Outline of National Informatization Development Strategy*. This document also formed the basis for another document, *13th Five-Year Plan for Informatization (2016-2020)*, released in December 2016. Both documents were prepared under the guidance of the authoritative Central Leading Group for Cybersecurity and Informatization (renamed as Central Cyberspace Affairs Commission in 2018), and served as the main strategic guidelines for the comprehensive development of China into a "major power in the cyberspace" (*wangluo qianguo*). Both documents pointed out the need for increasing the competitiveness of China's information and communications technologies, products and internet services, and

used the term “Online Silk Road” to highlight the digital dimension of the BRI.

The term “Digital Silk Road” eventually was adopted uniformly as the expression of the digital dimension of the BRI. The term was used in the speech by Xi Jinping at the opening ceremony of the First Belt and Road Forum in Beijing on May 14, 2017. In the speech, Xi said that BRI countries should “pursue innovation-driven development, intensify cooperation in frontier areas such as the digital economy, artificial intelligence, nanotechnology and quantum computing, and advance the development of big data, cloud computing, and smart cities, so as to turn them into a digital Silk Road of the 21st Century” (Xi, 2017: 561). In the Second Belt and Road Forum on April 26, 2019, Xi spoke about the need to “keep pace with the Fourth Industrial Revolution, jointly seize opportunities created by digital, networked and smart development, explore new technologies and new forms and models of business, foster new growth drivers and explore new development pathways, and build the digital Silk Road and the Silk Road of innovation” (Xi, 2020: 569).

In November 2020, in the opening speech to the 17th China-ASEAN Expo and China-ASEAN Business and Investment Summit, Xi highlighted “smart city, 5G, AI, e-commerce, big data, blockchain and telemedicine... protection of data security and policy communication and coordination” as areas of cooperation as China “works with ASEAN on the China-ASEAN Information Harbor to advance digital connectivity and build a digital Silk Road.” A month later, China’s State Councilor and Foreign Minister Wang Yi, in a speech delivered to the Advisory Council of the Belt and Road Forum, mentioned that “the BRI partners are actively developing Silk Road e-commerce, digital transport corridors, cross-border fiber optic cables for information transmission and the China-ASEAN Information

Harbor.” He further suggested that the DSR is now a “priority area for BRI cooperation in the next stage,” particularly in the backdrop of the ongoing pandemic. China, according to Wang, “has put forth the Global Initiative on Data Security designed to contribute to data security and development and cooperation of digital economy, and promote collective efforts toward a cyberspace featuring peace, security, openness and cooperation. Issues related to technology have been politicized by certain countries who are attempting to preserve their monopolistic position in high tech areas....What has happened shows that extensive consultation, joint contribution and shared benefits represents the right way toward better global digital governance” (Wang 2020).

Hence, similar with its parent concept the BRI, the DSR is an expansive and flexible notion. Adopting the “five areas of connectivity” framework, the DSR can be conceptualized as having a broad and multifaceted agenda (see Table 1).

For many developing countries looking to overcome their weaknesses in digital infrastructure and to tap into the vast economic opportunities unlocked by a digital revolution, the DSR certainly has its appeal (Chan, 2019; Arcesati, 2020). But the more predominant interpretation, especially in the developed world, is that the DSR is about geopolitical-technological competition, the success of which will have long-term, and mostly negative, ramifications to the existing world order. First, at the normative level there is a strong concern that the DSR is a venue where China could export its “digital authoritarianism” to the developing countries with weak democratic foundations. High-tech surveillance technologies could be exported to support fellow authoritarian regimes to monitor and suppress political opponents. A related implication is China’s concept of “internet

Table 1: Five Aspects of Digital Silk Road

Areas of Connectivity	Relevance to Digital Silk Road
Policy Coordination	<ul style="list-style-type: none"> ▪ Dialogues and forums on digital cooperation among policymakers ▪ MOUs on digital cooperation ▪ Digital diplomacy ▪ Internet governance and norms
Facilities Connectivity	<ul style="list-style-type: none"> ▪ Fiber optic cables ▪ 5G telecommunication infrastructure ▪ Beidou satellite ▪ Smart cities ▪ Data center ▪ Advanced technologies (big data, cloud computing, facial recognition, etc.)
Trade Facilitation	<ul style="list-style-type: none"> ▪ E-commerce platforms ▪ Logistics supporting and facilitating digital trade
Financial Integration	<ul style="list-style-type: none"> ▪ Cashless payment systems ▪ Financial services technology
People-to-People Exchanges	<ul style="list-style-type: none"> ▪ Training and exchanges of digital knowledge and talents ▪ Dialogues and forums on digital cooperation among think tanks, business leaders, non-governmental organizations ▪ Telemedicine

sovereignty” will gain more tractions and support among the developing world, leading to the development of a more illiberal world order (Cheney, 2019; Kurlantzick, 2020; Hemmings, 2020).

Second, the vast digital infrastructure built by Chinese companies will offer plenty of opportunities for China to surveil on others and compromise the information security of not only the host countries but also China’s strategic competitors such as the US and Japan (Patrick and Feng, 2018). An analyst even alarmingly suggests that DSR may turn out to be “the largest intelligence-collection network ever constructed” (Hemmings 2020: 17) in human history.

Third, the DSR could further entrench the already formidable technological and commercial prowess of China’s high-tech companies, and enhance their abilities to set and export their technologies and standards. This will

further “advance China’s bid for technological independence at home while moving it toward the center of global networks” (Hillman, 2021). This prospect is seen as fundamentally detrimental to not only the strategic but also the commercial and economic interests of the developed West.

Regardless of the developmental or the geopolitical interpretations of the DSR, its prominence certainly will continue to grow. COVID-19 has strained the financial resources and capabilities of many developing countries to undertake mega infrastructure projects, but cooperation on the DSR remains viable, timely, and full of potentials. As stated in the aforementioned speech by Chinese Foreign Minister Wang Yi, the DSR is the “priority area for BRI cooperation in the next stage.” It is with this backdrop that this research report examines China-ASEAN Information Harbor (CAIH), a frequently mentioned DSR project that connects southwestern China and Southeast Asia.

Guangxi-ASEAN Relations & China-ASEAN Information Harbor

To properly understand the origins of CAIH, it is necessary to situate the whole project in the external engagement strategy of Guangxi Zhuang Autonomous Region (Guangxi hereafter), a provincial-level entity in southwest/mid-south China bordering Vietnam and having a coastline facing the Gulf of Tonkin/Beibu Gulf (see Figure 1).²

In much of the 1990s, compared to its neighboring provinces (Yunnan and Guangdong), Guangxi had been slow and indifferent in engaging Southeast Asia despite its geographical proximity to the region. This changed in the 2000s, after China joined the WTO and signed

up for the China-ASEAN Free Trade Area (CAFTA), which presented an opportunity for Guangxi to broaden its role and become a key anchor in developing China-Southeast Asia relations. In 2003, Guangxi outbid its main rival Yunnan in winning the hosting right of the first China-ASEAN Expo (CAEXPO) and the related China-ASEAN Business Investment Summit (CABIS). Since then, CAEXPO and CABIS have remained the most prominent platforms for Guangxi's engagement with ASEAN countries (Lee, 2020). With these two main platforms as the foundation, Guangxi has developed a multitude of mechanisms to foster cooperation with ASEAN or selected ASEAN countries (see Table 2).

Figure 1: Location of Guangxi



Source and image credit: [http://country.eiu.com/\(F\(C3OskqWXcMj1ASYLEHwfgulYzY9rkVOuS0qJbBo9KBEhgkKi7cON6biv-joYp6L9ch4FCZHH7rGewydFoKNNPa375slTIZOXPOG9kEnfClg7vNv34-yVOvzy4JLdWy3nMcSnxKu9f_UB2L7JJXVyWyr6EHx-OHCK7WrhqtUSjlkTiiNO\)\)/China/Guangxi](http://country.eiu.com/(F(C3OskqWXcMj1ASYLEHwfgulYzY9rkVOuS0qJbBo9KBEhgkKi7cON6biv-joYp6L9ch4FCZHH7rGewydFoKNNPa375slTIZOXPOG9kEnfClg7vNv34-yVOvzy4JLdWy3nMcSnxKu9f_UB2L7JJXVyWyr6EHx-OHCK7WrhqtUSjlkTiiNO))/China/Guangxi)

Table 2: Major Platforms and Mechanisms of Guangxi's Engagement with ASEAN and ASEAN Countries

Platform/Mechanism	Level of engagement	Year
China-ASEAN Expo (CAEXPO)	Multilateral	2004
China-ASEAN Business Investment Summit (CABIS)	Multilateral	2004
Greater Mekong Subregion (GMS) cooperation	Regional	Joining in 2005
Pan-Beibu Gulf Economic Cooperation Zone (PBGECZ)	Regional	2007
China-Vietnam "Two Corridors, One Circle" Initiative	Bilateral	2015
Brunei-Guangxi Economic Corridor	Bilateral	2014
Guangxi China-Thailand Chongzuo Industrial Park	Bilateral	2012
Malaysia-China "Two Countries, Twin Parks"	Bilateral	2012
China-Singapore Nanning Logistics Park	Bilateral	2020

All these platforms or mechanisms are not exclusive to each other. They mutually reinforce each other, and together form a dense network of structures supporting China's (Guangxi's) interactions with ASEAN. Furthermore, some of them serve to sponsor a more elaborate set of subcomponents or programs interfacing with various aspects of China-ASEAN relations. For example, with the support of the central government, CAEXPO and CABIS are no longer purely business platforms but have become venues for governmental/semi-governmental dialogues on various subjects, such as China-ASEAN Ministers' Forum on Entry-Exit Inspection and Quarantine Cooperation, China-ASEAN Women's Forum, China-ASEAN High-End Forum for Logistics, China-ASEAN Forum of Energy for Rural Areas, and CAFTA Legal Forum (Lee, 2020: 159).

In 2015, Xi Jinping further boosted Guangxi's status by giving it "three primary positions," namely "building an international corridor opening to the ASEAN region, creating new strategic anchors for the opening-up and development of the southwest and mid-south regions of China, and forming an important gateway connecting the Silk Road Economic

Belt and the 21st-Century Maritime Silk Road" (Huang, 2020). With all these central support and provincial activism, Guangxi's connections with ASEAN indeed grew substantially. For instance, in terms of maritime connectivity, Guangxi Beibu Gulf International Port Group has opened 27 foreign trade routes, achieving full coverage of major ASEAN ports, while connecting landlocked Chinese provinces.³ It has also invested in both the Kuantan Port of Malaysia (adjacent to the Malaysia-China Kuantan Industrial Park⁴) and the Muara Port of Brunei.

It was within this context that the idea of CAIH emerged as another frontier for Guangxi's engagement with ASEAN. It was proposed jointly by the Guangxi government and the Cyberspace Administration of China (CAC), during the First China-ASEAN Cyberspace Forum at the 11th CAEXPO in September 2014 (Wang, 2016). At that time when terms such as "Digital Silk Road" or "Information Silk Road" were still at the embryonic stage, CAIH was already conceptualized as the digital dimension of the BRI in the context of China-ASEAN cooperation. It essentially embodied what the DSR was about before the term DSR was widely known.

China-ASEAN Information Harbor: Developments from 2014 to the Present

Development of CAIH can be roughly divided into three phases: preparation, foundation, and comprehensive development.

Preparatory Phase (September 2014-April 2016)

Following the introduction of the idea of CAIH in September 2014, the Chinese official media began to publicize CAIH and it entered the lexicon of China's cooperation agenda with ASEAN.⁵ Xi reportedly endorsed the idea in November 2014, giving it the “good-to-go” signal. In September

2015, the then Vice Premier Zhang Gaoli officially announced the launching of CAIH in his speech at the 12th CAEXPO/CABIS. There were three main aspects of this preparation phase.

First, formulation and planning of CAIH was undertaken by the Guangxi government, which prepared the masterplan document *Construction Plan for China-ASEAN Information Harbor*. The development of CAIH is guided by a series of documents issued by central, Guangxi and local governments (see Table 3). The *Construction Plan* defined CAIH as a project “based in Guangxi,

Table 3: Selected Important Documents Guiding Development of China-ASEAN Information Harbor

Document	Year	Issuing Body
<i>Construction Plan for China-ASEAN Information Harbor</i>	2016	Guangxi
<i>Action for China-ASEAN Information Harbor Construction (2016-2017)</i>	2016	Guangxi
<i>Guangxi Government's Work Targets on China-ASEAN Information Harbor 2018</i>	2018	Guangxi
<i>Overall Plan for China-ASEAN Information Harbor Construction</i>	2019	Guangxi and Central government
<i>Implementation Plan for China-ASEAN Information Harbor (2019-2021)</i>	2019	Guangxi
<i>Construction Plan for CAIH Nanning Base Area (2019-2021)</i>	2019	Nanning
<i>Implementation Plan for Qinzhou Associate CAIH Center (2019-2021)</i>	2019	Qinzhou
<i>Development Planning for Digital Silk Road Facing ASEAN (Guangxi)</i>	Under planning	Guangxi
<i>Three-Year Action Plan for Guangxi's Digital Silk Road Facing ASEAN (2021-2023)</i>	Under planning	Guangxi
<i>Construction Plan for CAIH Nanning Base Area (2022—2024)</i>	Under planning	Nanning

serving China’s southwestern and mid-south regions, and facing ASEAN.” The document first laid out the “five-platform” framework to guide CAIH development. The “five platforms” refer to infrastructure, information sharing, technology cooperation, economic and trade service, and people-to-people exchanges (Zhou, 2020: 26). The document also proposed that a specially created joint-stock company for the construction of CAIH and that the company will operate on the market principle (Huang, 2016). This company is China ASEAN Information Harbor Co. Ltd (CAIH Co.).

The second aspect was getting this company set up. China Unicom, a major state-owned enterprise in the telecommunication sector, was in the very early on identified as the leading actor to spearhead the formation of CAIH Co. In 2010, China Unicom set up its fourth international operational base in Nanning (capital of Guangxi), after Beijing, Shanghai, and Guangzhou, exactly with the purpose of building information connectivity with Southeast Asian countries. China Unicom subsequently made several major investments in Guangxi, including a cloud computing center, an e-commerce platform, the infrastructure in support of cross-border internet data traffic, and a data storage center.⁶

Lu Dongliang, the founding (and still serving) chairman and president of CAIH Co., was the Nanning manager of China Unicom. Other than China Unicom, the other major shareholders of CAIH Co. include the investment arm of Nanning Wuxiang New Area (a new development zone in southern part of Nanning) and Qianxun Spatial Intelligence, a high-tech company cofounded by Alibaba and Norinco (a major enterprise in China’s defense industry).⁷ Minor shareholders include China-Malaysia Qinzhou Industrial Park, Guangxi International Expositions Group, and Guangxi Beibu Gulf Investment (see Table 3).

The third aspect was the physical construction of a specifically designed spatial zone to host CAIH Co. and other CAIH-related projects. Before CAIH emerged, Nanning already developed a high-tech zone in the northwestern part of the city, which stood a chance to host this project. But eventually this spatial zone, called “CAIH Nanning Core Base (CNCB),” was located within Wuxiang New District (which is also part owner of CAIH Co., as shown in Table 4) in southern Nanning. CNCB occupies a total land area of 35.92 km² and consists of two segments, a core hub of 3.03 km² where CAIH Co. headquarters and the regional headquarters of China Unicom are located, and a larger industrial area of 32.89

Table 4: Shareholding Structure of China ASEAN Information Harbor Co.

Shareholder	Percentage	Capital (million yuan)
China Unicom	45	90
Nanning Wuxiang New District Investment	30	60
Qianxun Spatial Intelligence Inc.	10	20
China-Malaysia Qinzhou Industrial Park (Guangxi) Investment Holding Group	5	10
Guangxi International Expositions Group	5	10
Guangxi Beibu Gulf Investment Group	5	10

Source: <https://www.zhipin.com/gongsi/I04032680.html>

km². Total investment into CNCB was estimated to be 20.9 billion yuan.⁸ CNCB was designed to attract digital and high-tech industries, to achieve the maximum effect of industrial concentration, scale and clustering (Wu and Zheng, 2019). Digitally-related ventures and projects in and around CNCB, whether pre-planned independently from CAIH or otherwise, and whether initiated from the private sector of public sector, all were to be enveloped into CAIH. Hence, while CAIH Co. is the main vehicle to drive the development of CAIH, it should not be equated with CAIH itself.

Foundation Phase (April 2016 to February 2019)

The second phase was marked by the formal approval by the State Council of the *Construction Plan* on April 29, 2016. The document was jointly reissued by five central agencies: the National Development and Reform Commission (NDRC), the CAC, MIIT, Ministry of Foreign Affairs (MFA), and Ministry of Commerce (MOFCOM), marking the highest-level endorsement and support for CAIH. Three days earlier, CAIH Co. also convened its first shareholder and board meetings in Nanning. In late 2016, CAIH was included in the above-mentioned *Outline of National Informatization Development Strategy and 13th Five-Year Plan for Informatization (2016-2020)*.

In order to implement the *Construction Plan*, Guangxi government in June 2016 issued an interim *Action Plan for China-ASEAN Information Harbor Construction (2016-2017)*. This *Action Plan*, based on the “five platform” framework, identified 106 projects as the first batch of CAIH projects. It also proposed a more expansive spatial conception of CAIH as consisting of “one base, one center, one axis, and two attachments.” The “one base” refers to CNCB, the “one center” refers to China-Malaysia Qinzhou Industrial Park, and the “one axis” refers an “information axis”

consisting of cities from north to south, namely Nanning, Guilin, Beihai, Qinzhou, Liuzhou. The “two attachments” refer to the supportive role played by western and eastern areas surrounding the corridor (see Figure 2).⁹ Another interim document was *Guangxi Government’s Work Targets on China-ASEAN Information Harbor 2018*, which served to further clarify the short-term objectives in measuring the progress of CAIH.

In April 2017, Xi Jinping visited Guangxi and inspected the progress of CAIH Co. Two more leaders from the Politburo Standing Committee visited and inspected CAIH Co. afterwards: Wang Yang (in June 2017) and Han Zheng (September 2018). In November 2018, Guangxi government established a big data development bureau that doubles as the CAIH Office, a specialized office in charge of directing and coordinating all matters related to CAIH development. The director of the CAIH Office is a deputy general secretary of Guangxi government.¹⁰

From 2016 to 2018, among the first batch of CAIH projects mentioned above, 30 were completed and operational, while 50 were in various stages of progress, with the rest facing different sorts of issues (see Figure 2). A substantial number of these projects were pre-existing projects that were eventually included under CAIH. Table 5 provides selected cases of these projects.

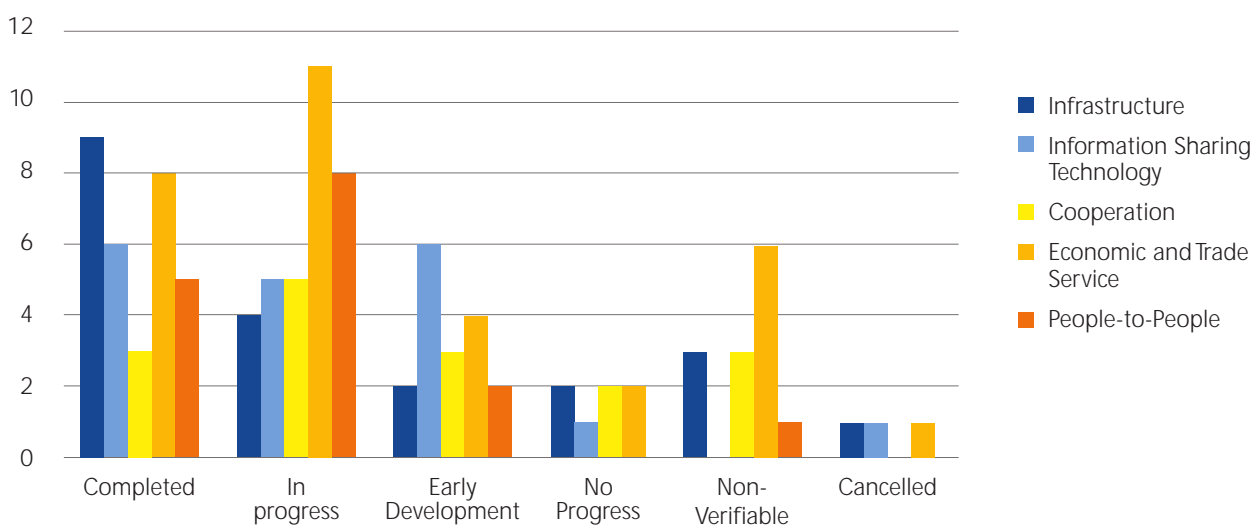
Figure 2: “One Base, One Center, One Corridor, and Two Attachments” of CAIH



Source and Image Credit: <http://www.nanning.gov.cn/ywzx/zzqyw/t3283755.html>

Note: The red circle refers to CNCB in Nanning. The yellow rectangle refers to China-Malaysia Qinzhou Industrial Park. The green line refers to the “information axis.” The two dotted oval shapes refer to the two “attachments.” The pink dotted arrow lines to the impact radiated from CAIH in China’s southern regions.

Figure 3: Progress of CAIH-related Projects, 2016-2018



Source: Modified from Zhou, 2020: 27

Table 5: Selected Projects of China-ASEAN Information Harbor, 2016-2018

Project	Project Implementer	Platform	Status
China-Myanmar Cross-Border Optical Cable System	China Mobile, China Unicom	Infrastructure	Completed
Asia-Pacific-Gateway Submarine Cable System	China Mobile, China Unicom	Infrastructure	Completed
Beidou Application Demonstration Project	Guilin University of Electronic Technology	Infrastructure	In Progress
China Mobile Data Center (Guangxi)	China Mobile	Information Sharing	Completed
China-ASEAN Industrial Base for Cybersecurity	China-Malaysia Qinzhou Industrial Park	Information Sharing	In Progress
CAIH Town	China Unicom, CAIH Co.	Information Sharing	Early Development
China-ASEAN Smart City Technology Innovation Center	CAIH Co.	Technology Cooperation	Completed
China-ASEAN High-Tech Service Cluster for Inspection and Certification	Various bodies	Technology Cooperation	In Progress
China-ASEAN Smart City Water Resources Service Platform	Guangxi University, Guangxin Nanning Waterwork Co.	Technology Cooperation	Early Development
Nanning Cross-Border E-Business Service Platform	Various bodies	Economic and Trade Services	Completed
Beibu Gulf Commodity Exchange Center	Beibu Gulf International Port Group Co.	Economic and Trade Services	Completed
China-ASEAN Logistics Information Service Platform	CAIH Co.	Economic and Trade Services	In Progress
China-ASEAN University Think Tank Alliance	Guangxi University	People-to-People	Completed
China-ASEAN Audio-Visual Industry Base	Guangxi Radio and TV Info Co.	People-to-People	In Progress
China-ASEAN Digital Publishing Base	Guangxi Culture Investment Group Co.	People-to-People	Early Development

Source: <http://dmxxg.gxzf.gov.cn/zwgk/sjfb/t5307129.shtml>

Note: Table 4 provides only a small sample of the 103 projects. For a complete list and more detailed information about these projects, see: <http://dmxxg.gxzf.gov.cn/zwgk/sjfb/t5307129.shtml>

Comprehensive Development Phase (February 2019 to the present)

The third phase was marked by the central government's approval of another seminal document, *Overall Plan for China-ASEAN Information Harbor Construction*, in February 2019. This document provides the roadmap for CAIH development from 2018 to 2025. Interestingly, while Guangxi government initiated the formulation of this document back in 2017, its final form was jointly written by six central agencies (the five agencies that approved the 2016 document plus Ministry of Finance) and passed down to Guangxi government from the top,¹¹ an indication of the high-level attention now being paid to CAIH.

In accordance with the requirements made in the *Overall Plan*, Guangxi and two municipal governments (Nanning and Qinzhou) each came out with their own implementation plan (see Table 3 above). Apparently the *Overall Plan* elevated the position of Qinzhou as the second core area or associate center (*fu zhongxin* 副中心) in CAIH construction. All these documents suggested the beginning of a third, more ambitious phase. Guangxi government's *Implementation Plan for China-ASEAN Information Harbor (2019-2021)* reaffirms the spatial layout of its previous *Action Plan (2016-2017)*, and lists a very detailed 62 work tasks in the coming two years (see Appendix 1). Nanning government's *Construction Plan for CAIH Nanning Base Area (2019-2021)*, on the other hand, conceptually redefined the geographical CNCB from its existing are to the *whole* of Nanning city. The original spatial zone of CNCB still exists, but now its broader conception will include other high-tech or information-related zones and industries within the city.¹²

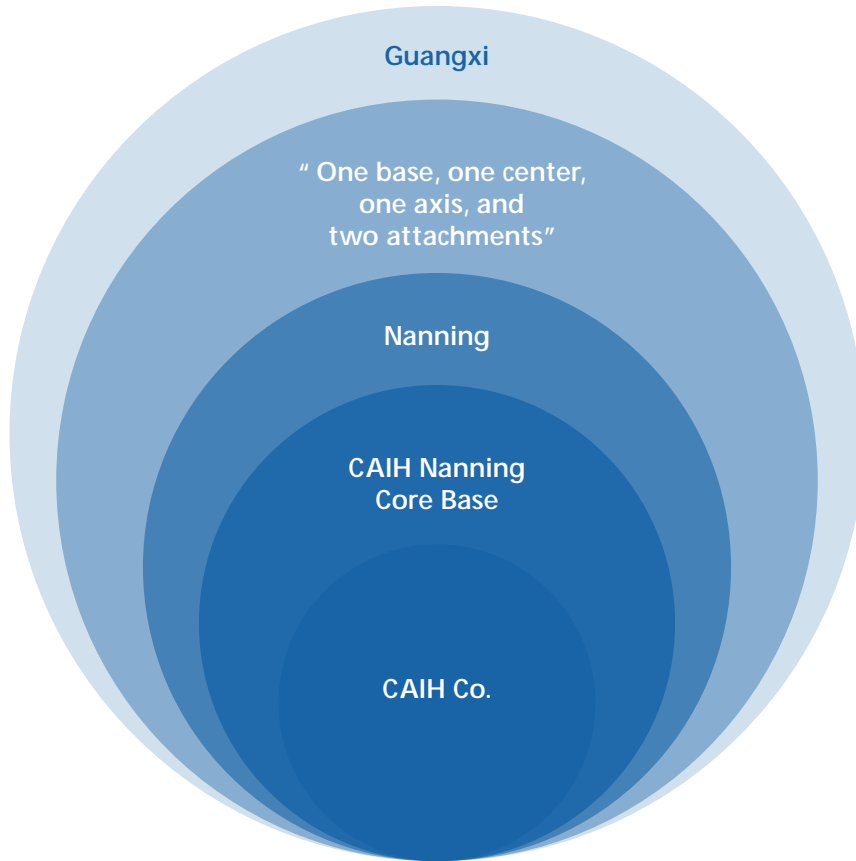
Qinzhou's *Implementation Plan for Qinzhou Associate CAIH Center (2019-2021)*, on the other hand, designated a Huawei-funded digital area as

the core area, and the China-Malaysia Qinzhou Industrial Park as the "demonstration area". The core area is designated to serve industries related to big data, innovation incubation, gaming, auto-translation, while the demonstration area is to focus more on technology transfer, manufacturing of digital equipment, new energy, Beidou navigation services, cyber-security and telemedicine.¹³ The elevation of Qinzhou also sparked other cities along the "axis" to rebrand or realign their development model to digital industries. Beihai leveraged on the China Electronic Corporation Beibu Gulf Information Harbor as the basis for its participation in CAIH, while both Guilin and Liuzhou emphasized on robotics and smart factories.¹⁴ As of the time of the writing of this report, the various projects still in development and categorized as parts of CAIH total 165, distributed throughout Guangxi.¹⁵

Hence, the development of CAIH, just like concepts such as the BRI or DSR, is never confined to a specific area or a particular project, but is dynamic, flexible and evolving. Spatially however, it can be understood to have a concentric structure (see Figure 4), with CAIH Co. as the center, and from there it radiates out to CNCB, Nanning, and other cities along the "one axis", and the rest of Guangxi (*White Paper*, 2020: 4-5).

In 2021, the Guangxi government has begun the preparation of the next set of documents guiding the next stage of development, *Development Planning for Digital Silk Road Facing ASEAN (Guangxi)* and *Three-Year Action Plan for Guangxi's Digital Silk Road Facing ASEAN (2021-2023)*,¹⁶ while Nanning has also started formulating *Construction Plan for CAIH Nanning Base Area (2022—2024)*.¹⁷ The future direction will aim for both greater actual (as opposed to symbolic) involvement of ASEAN countries and enterprises, and for aligning with the domestic development of Digital Guangxi.

Figure 4: Spatial Concentric Structure of China-ASEAN Information Harbor



China-ASEAN Information Harbor Forum

The China-ASEAN Information Harbor Forum (CAIH Forum) succeeded the China-ASEAN Cyberspace Forum and beginning in 2015, it became a regular feature of the annual CAEXPO/CABIS (see Table 6) except in the years 2017 and 2019. CAIH Forum serves as the umbrella summit for CAIH, attended by government officials, entrepreneurs, and think tank analysts from both

China and ASEAN countries. CAIH is organized collectively by CAC, Guangxi government, MIIT, and NDRC, supported by the secretariat of CAEXPO and CAIH Co. Since the First CAIH Forum was held, progressively it has become larger, with growing attendance, expanding agenda, greater media coverage, and higher level of official participation from ASEAN countries.

Table 6: China-ASEAN Information Harbor Forum

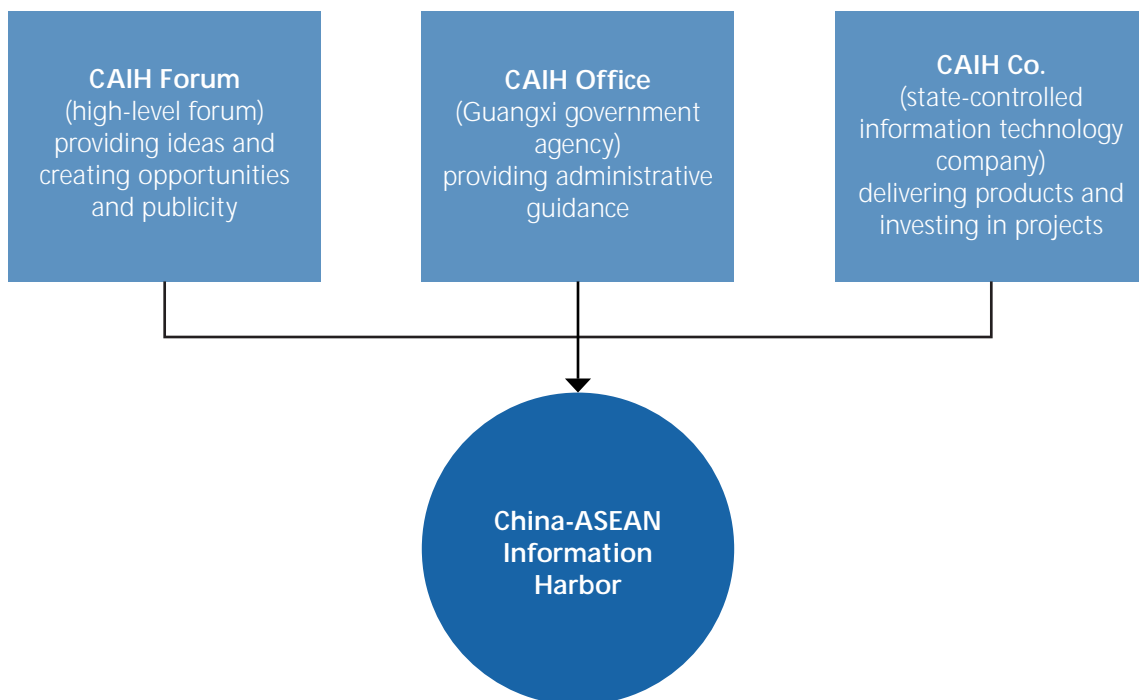
Forum	Chinese Officials and Enterprises	ASEAN Countries Officials and Enterprises	Sessions, sub-forums, related developments
<p>First CAIH Forum (2015, 12th CAEXPO/CABIS)</p> <p>Theme: <i>Initiate an Internet+ Maritime Silk Road with Cooperation, Mutual Benefits and Win-win Result</i></p> <p>Total participants: 283</p>	<p>Officials:</p> <ul style="list-style-type: none"> ▪ Lu Wei (Director of CAC) ▪ Peng Qinghua (Guangxi Party Secretary) ▪ Lin Nianxiu (Vice Minister of NDRC) <p>Enterprises:</p> <ul style="list-style-type: none"> ▪ China Unicom ▪ HyalRoute ▪ Alibaba ▪ Tencent ▪ Suning ▪ Others 	<p>Officials:</p> <ul style="list-style-type: none"> ▪ Hiem Phommachanh (Minister of Post and Telecommunications of Laos) ▪ Kyaw Zwa Soe (Director General of Department of Technology Promotion and Coordination, Myanmar) ▪ Chheang Bunthen (Deputy Director General of General Department of Information Telecommunication Technology, Ministry of Posts and Telecommunications of Cambodia) <p>Enterprises:</p> <ul style="list-style-type: none"> ▪ Ascend Group (Thailand) ▪ SI Group (Cambodia) 	<ul style="list-style-type: none"> ▪ Sessions on cross-border e-commerce, internet culture, tackling of cybercrime ▪ CAC signed MOU with Laos Ministry of Post and Communications on cyberspace cooperation
<p>Second CAIH Forum (2016, 13th CAEXPO/CABIS)</p> <p>Theme: <i>Establish the China-ASEAN Information Harbor Forum with Co-building, Sharing and Win-win Result</i></p> <p>Total participants: 519</p>	<p>Officials:</p> <ul style="list-style-type: none"> ▪ Chen Wu (Guangxi Governor) ▪ Zhuang Rongwen (Deputy Director of CAC) ▪ Lin Nianxiu (Vice Minister NDRC) ▪ Chen Zhaoxiong (Vice Minister of MIIT) <p>Enterprises:</p> <ul style="list-style-type: none"> ▪ Perfect World Games ▪ CAIH Co. ▪ Others 	<p>Officials:</p> <ul style="list-style-type: none"> ▪ Khieu Kanharith (Minister of Information, Cambodia) ▪ Henry Subiakto (Senior advisor at Ministry of Communication and Informatics, Indonesia) 	<ul style="list-style-type: none"> ▪ Two sub-forums on E-Commerce and satellite navigation cooperation Release of <i>White Paper on China-ASEAN Information Technology Development and Cooperation 2016</i>

Forum	Chinese Officials and Enterprises	ASEAN Countries Officials and Enterprises	Sessions, sub-forums, related developments
<p>Third CAIH Forum (2018, 15th CAEXPO/CABIS)</p> <p>Theme: <i>Build a Digital Silk Road to Share the Digital Economy</i></p> <p>Total participants: 2000 plus</p>	<p>Officials:</p> <ul style="list-style-type: none"> ▪ Chen Wu (Guangxi governor) ▪ Yang Xiaowei (deputy director of CAC) <p>Enterprises:</p> <ul style="list-style-type: none"> ▪ Hualu Group ▪ China Mobile ▪ Datang ▪ JD.com ▪ Suning ▪ Ant Financial ▪ iFlytek, ▪ Kingdee ▪ Inspur ▪ Huawei ▪ CAIH Co. ▪ Others 	<p>Officials:</p> <ul style="list-style-type: none"> ▪ Ros Sorakha (Secretary of State of the Ministry of Post and Communications, Cambodia) ▪ Bounsaleumsay Khennavong (Deputy Minister of Post and Communications, Laos) ▪ Ong Kian Ming (Deputy Minister of International Trade and Industry, Malaysia) ▪ Chit Wai (Secretary at the Ministry of Transport and Communication, Myanmar) ▪ Tan Li San (Permanent Secretary at the Ministry of Communication and Information, Singapore) <p>Enterprises:</p> <ul style="list-style-type: none"> ▪ redOne (Malaysia) ▪ CrimsonLogic Pte (Singapore) 	<ul style="list-style-type: none"> ▪ Nine sub-forums: Cyber Humanity Development Forum, 5G Technology and Application Forum, Satellite Industry Cooperation Forum, E-commerce Forum, Digital Economy Forum, Digital Silk Road and Industrial Cooperation Forum, Smart City Forum, New Generation Information Technology Industry Innovation and Development Forum, and Huawei Global Logistics Summit.
<p>Fouth CAIH Forum (2020, 17th CAEXPO/CABIS)</p> <p>Theme: <i>Digital Technology Connects ASEAN, Intelligence Creates the Future</i></p> <p>Total participants: 200 plus for physical attendance in addition to virtual attendance</p>	<p>Officials:</p> <ul style="list-style-type: none"> ▪ Liu Liehong (Vice Minister of MIIT) ▪ Qin Rupei (Guangxi deputy governor) <p>Enterprises:</p> <ul style="list-style-type: none"> ▪ ZTE ▪ NetEase ▪ JD.com ▪ CAIH Co. ▪ Others 	<p>Officials:</p> <ul style="list-style-type: none"> ▪ John Gerald Plate (Minister of Communication and Informatics, Indonesia) ▪ Thansamay Kommasith (Minister of Post and Telecommunications, Laos) ▪ Saifuddin Abdullah (Minister of Minister of Communication and Multimedia, Malaysia) ▪ Thant Sin Maung (Minister of Transport and Communications, Myanmar) ▪ S. Iswaran (Minister of Communication and Information, Singapore) <p>Enterprises:</p> <ul style="list-style-type: none"> ▪ Green Packet (Malaysia) ▪ Ralali.com (Indonesia) 	<ul style="list-style-type: none"> ▪ Two sub-forums on E-Commerce and satellite navigation cooperation Release of <i>White Paper on China-ASEAN Information Technology Development and Cooperation 2016</i>

Source: Compiled from the following websites:
https://www.chinadaily.com.cn/bizchina/informationharbor/2015-09/13/content_21848206.htm,
<http://news.cctv.com/special/2016dmlt/index.shtml>,
<http://ihf.caexpo.com/index.php?m=content&c=index&a=show&catid=16&id=80>

The CAIH Forum positions itself as the high-level platform where ideas are suggested and exchanged, niche areas identified, partnerships sought, and consensus forged. However, the most substantive impact perhaps is publicity, where the overall atmospherics of China-ASEAN cooperation in the digital sector is amplified.¹⁸ In this sense, CAIH Forum complements the CAIH Office and CAIH Co. in pushing forward the development of CAIH (See Figure 5).

Figure 5: CAIH Forum, CAIH Office, and CAIH Co.



China-ASEAN Information Harbor Co.

CAIH Co. defines itself as a “state-controlled info-tech platform company.” The company has a double-headquartered structure (in both Nanning and Beijing), two research and development centers in Guilin and Shenzhen, various branch offices throughout Guangxi, an office in Yunnan, and two fully-owned subsidiaries in Malaysia and Indonesia. From an initial modest size of about 70 employees, CAIH Co. has now grown to a size of over a thousand employees. While still small by the standard of China’s technology giants, within Guangxi, CAIH Co. however is considered a “champion,” a leading technology company that will carry the hope of digital development of the relatively backward region.

CAIH Co. offers a wide range of digital products and services. It categorizes them into five main business fields: Digital Government and Enterprise (*shuzi zhengqi* 数字政企), Digital Industry (*shuzi chanye* 数字产业), Information Technology Application Innovation Industry (*xin Chuang chanye* 信创产业), Financial Technology (*jinrong keji* 金融科技), and New Generation of Communication Technology (*xin xing tong xin* 新型通信) (see Table 7). While terms such as “Digital Governance and Enterprise,” “Financial Technology,” and “New Generation of Communication Technology” are straight forward, others perhaps need more explication here. “Digital Industry” refers to the construction of digital platforms that integrate information related to production, transaction, circulation, warehousing, logistics and so forth for a particular industry. An example of this is the CAIH Sugarcane Trading Platform (as illustrated in Figure 6).

“Information Technology Application Innovation Industry,” an obtusely rendered translation of the Chinese term *xin Chuang chanye*, is a new concept that emerged in China in the past two years (CAIH Co. added this as one of its core business fields around 2019-2020). It refers to China’s efforts to build its own indigenous (secure and reliable) internet ecology (composing of both hardware and software products) especially in the context of growing sanctions against China’s technology firms from the West.¹⁹ A data storage facility built by CAIH Co. in Beihai city is an example of such undertaking.

The customers of CAIH Co. remain overwhelmingly domestic, especially the public sector in Guangxi (Huang, 2018: 15). It had built several platforms to enable “digital governance” for various public offices of Guangxi and the municipal governments. *Gui Jian Tong*, a migrant labor management system for the construction industry, was adopted by the housing bureau of Guangxi government for all public construction projects.²⁰ During the pandemic, CAIH Co. was also tasked by Guangxi government to developing a health code app.²¹

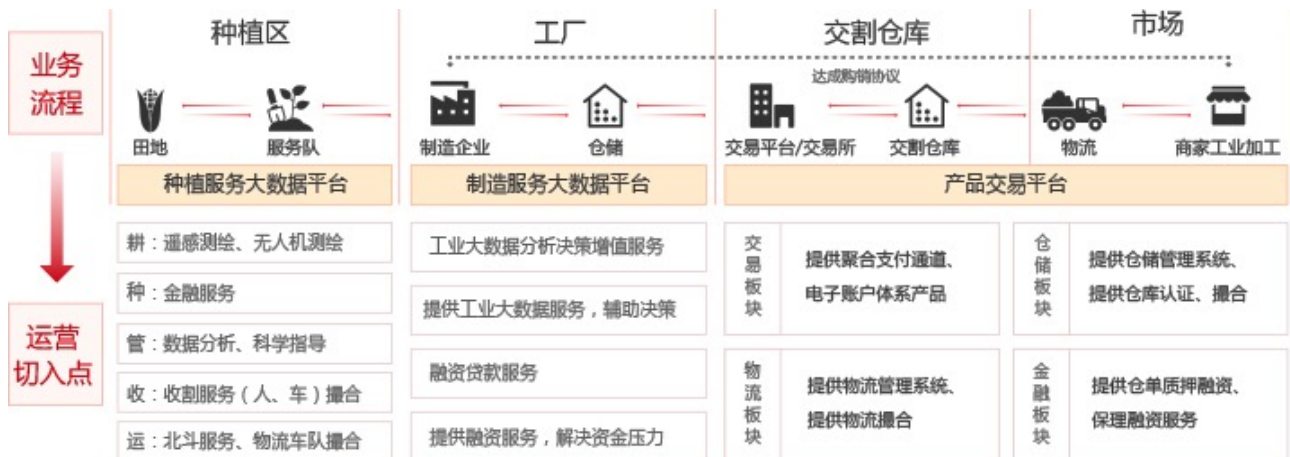
But CAIH Co. is also a company with a specific mission to build “digital connectivity” with Southeast Asian countries. The various levels of economic and digital development in Southeast Asia offer CAIH Co. opportunities to cater to each country in terms of the kind of investment or business opportunities it offers. In the less developed countries (Laos, Cambodia, Myanmar), CAIH Co. focuses on building digital

Table 7: Five Business Fields of CAIH Co.

Business Fields	Selected Relevant Areas	Selected Examples of Products
Digital Government and Enterprise <ul style="list-style-type: none"> to enable digital transformation and offer e-solutions for customers 	<ul style="list-style-type: none"> Smart office Smart custom management Smart government Smart city Smart logistics Smart community management Social credit 	<ul style="list-style-type: none"> Wuzhou General Services Platform Guangxi Trade Promotion Big Data Platform CAIH Container Cloud Office Platform for Guangxi Beibu Gulf Office Single Window Cooperation Platform for International Trade (Guangxi)
Digital Industry <ul style="list-style-type: none"> to build integrated information platforms for industries 	<ul style="list-style-type: none"> Construction industry Sugarcane industry Healthcare 	<ul style="list-style-type: none"> Gui Jian Tong (management system for migrant labor in construction industry) Zhe Tang Tong (sugarcane-related trading platform) Hui Kang Yang healthcare system
Information Technology Application Innovation Industry <ul style="list-style-type: none"> to build a secure and reliable indigenous ecology for internet development 	<ul style="list-style-type: none"> Hardware Software 	<ul style="list-style-type: none"> CAIH Data Storage Facility CAIH Multipurpose Kiosk
Digital Finance <ul style="list-style-type: none"> to empower financial services with technology 	<ul style="list-style-type: none"> Digital payment Investment fund Financial management technology Credit management Supply chain financing 	<ul style="list-style-type: none"> CAIH E-Credit Platform CAIH Digital Economy Fund
New Generation of Communication Technology <ul style="list-style-type: none"> to offer one-stop smart communication services 	<ul style="list-style-type: none"> Internet of Things Electronic sim card (e-sim) Cloud communication 	<ul style="list-style-type: none"> Elinking app (e-sim) CAIH Cloud Communication Platform Cloud Messaging Platform Privacy Number Intelligent Call Center

Source: Compiled from the information provided by the company's website www.caih.com.

Figure 6: CAIH Sugarcane Trading Platform



Source and image credit: http://www.caih.com/subpage_121.html?lang=zh_CN;
http://www.caih.com/subpage_121.html?lang=en_US

Notes: The two images here illustrate a system where information related to planting, factory production, warehousing, logistics, market are all collected, integrated, and presented in a single platform.

infrastructure and offering digital solutions to government offices. In Laos, CAIH Co. developed, in partnership with Lao Asia Pacific Satellite Co., Ltd., a cloud computing center, which aims to “contribute to the development of digital projects including smart city, cloud computing, big data and IoT in Laos.”²² In Myanmar, it was in talks with Asia World Group for a smart port project before the coup.

In the more developed economies such as Malaysia and Indonesia, CAIH Co. concentrates on offering communication products and services. One example of which is Elinking, the e-sim app developed by CAIH Co., which is first being tested out most fully in the Malaysian market but is planned to be eventually launched in other ASEAN countries. In Indonesia the company aims to participate in the IPTV market while in the Philippines it works with the Philippines telecommunication company Smart in offering a multimodal messaging system.²³ CAIH Co.’s sugarcane industry platform also attracts attention from Thailand. Mitr Phol Group, the largest sugar producer in Thailand, has a project with CAIH Co. in utilizing digital application for the sugar industry.²⁴ While in Singapore, the most developed and digitally advanced country in ASEAN, CAIH Co. finds that it is hard to penetrate the market there. Instead it partners with CrimsonLogic, a Singapore company, in constructing a single-window trade platform utilizing block-chain technology.²⁵ By the end of 2020, CAIH Co., has according to own information conducted over 20 cooperation projects with 9 ASEAN countries (Brunei as the only missing country) in such areas as digital government, digital business, digital industry and new telecommunication to build a China-ASEAN Digital Silk Road.²⁶

Other than these bilateral engagements with individual ASEAN countries, CAIH Co. is also mandated by Guangxi government to lead China-ASEAN Information Harbor Digital Economy

Alliance, China-ASEAN BigData Exchange Alliance, and China-ASEAN Information Harbor Think Tank Alliance (Huang, 2018: 17). These are industry alliances aim to find and forge common grounds of cooperation. Members of the alliances are enterprises, professional associations and research institutes (in the digital sector) from China and ASEAN countries (but with the involvement of a few non-China and non-ASEAN companies such as Qualcomm).²⁷

Overall however, the footprints of CAIH Co. in Southeast Asia remain rather light so far. Compared to other Chinese technology companies, CAIH Co. has only very limited penetration in Southeast Asian markets. However, CAIH Co. does have its own potentials and advantages. Guangxi’s level of development is not superior to the wealthier group of countries in Southeast Asia but is ahead of countries such as Laos and Cambodia, and the technologies and services that CAIH Co. offers could be very much suitable and affordable to these countries. On the other hand, manufacturers in the region also have a growing demand for smart factories and Internet-of-Things application, especially in the context of the ongoing pandemic. CAIH Co.’s experiences in offering catered digital solutions to its domestic customers could very well match this growing demand.²⁸

Finally, it should be reminded here again that CAIH Co., while being the most important government-backed company for the construction of CAIH, it is not the exclusive one. Other enterprises based in Nanning (and Guangxi), as long as they serve the purpose of enhancing digital connectivity with ASEAN countries, can be conceptualized as part of CAIH. For example, in order to foster a bilateral e-commerce industry chain, Guangxi Tus-Innovation Cross Border E-commerce Co Ltd has cooperated with Alibaba to build Lazada cross-border Eco-Innovation Service Center (Nanning) since 2019.²⁹

CAIH and Digital Guangxi

Echoing the call from central leadership to embrace greater use of digital technology, and also being inspired by its neighboring province Guizhou (which leapfrogged Guangxi to become a technology hub in western China from an even more backward level), the leadership of Guangxi has identified digital transformation as the way forward for its future development. However, Guangxi's technological base has been comparatively weak. As two researchers affiliated with Guangxi government acknowledge, Guangxi has suffered from a lack of technology powerhouses, under-investment of digital infrastructure, slow digitalization of traditional industries, strong competition from neighboring provinces, and insufficient digital talents (Peng and Zhang, 2019: 49-51).

To this end, CAIH is as much about Guangxi's own digital transformation and developmental agenda as building digital connectivity with Southeast Asia. CAIH is a brand where Guangxi can leverage to attract high-tech investment and to cultivate its own digital talents and resources. Most of the 165 projects under the watch of CAIH Office, in fact, do not yet have actual or substantive involvement from ASEAN countries, despite these projects often carry the label "China-ASEAN." For example, the China-ASEAN Smart City Innovation Center has no participation from any enterprise from ASEAN, nor the technologies developed from the Center have been used in the cities of ASEAN.³⁰ The label "ASEAN" often has remained aspirational rather than real.

In 2018, the Guangxi government launched another initiative, Digital Guangxi, which

closely parallels CAIH. Digital Guangxi has four focal areas: investment in digital infrastructure, digital government, digital economy, and digital society. Digital Guangxi and CAIH are Siamese twins, where the former serves as the domestic foundation of the latter, and the latter as the internationalization of the former. The *White Paper on the Construction of China-ASEAN Information Harbor and Digital Guangxi*, a report released in November 2020 and prepared jointly by the China Academy of Information and Communications Technology (CAICT, a think tank affiliated with MIIT), Guangxi Academy of Social Sciences, and the information center of Guangxi government, describes the relationship between Digital Guangxi and CAIH as an example of the application of the central government's "dual circulation" concept (*White Paper*, 2020: 15). In fact, the *White Paper* takes notes that 95 percent of the major projects listed under Digital Guangxi overlap with CAIH (*White Paper*, 2020: 12).

Despite starting from a low base, the combined initiatives of Digital Guangxi and CAIH do make Guangxi a stronger player in digital economy today. Nationally, the size of the digital economy of Guangxi is ranked 18th among all provinces. But among the provinces in western China, Guangxi is considered one of the leading provinces in developing the digital sector. From 2016 to 2019, the size of Guangxi's digital economy sector increased from 409.9 billion yuan (63.6 billion USD) to 659.3 billion yuan (101.93 billion USD) (*White Paper*, 2020: 43). The number of digital-related enterprises also increased from 3268 in 2015 (the year CAIH was launched) to 11008 in 2020 (*White Paper*, 2020: 44). The size of the traditional industries in Guangxi (metallurgy,

nonferrous metals, machinery, sugarcane, and others) that underwent “digitalization” increased from 349.1 billion yuan (53.97 billion USD) in 2016 to 572.5 billion yuan (88.51 billion USD) in 2019 (White Paper, 2020: 45). In the past few years, Guangxi has seen steady advances in smart manufacturing and smart agriculture, clusterization of technology enterprises, growth in digital service industries, upgrading of urban digital infrastructure and extension of digital infrastructure into remote and rural areas, and many other areas of progress.

Conclusion

The BRI with the Digital Silk Road as its evolving centerpiece is intended to help Beijing achieve its centennial aim of becoming a world's leader of value chains by establishing companies that have their own technological norms and standards and by reorganizing global supply chains. Ensuring a good return on investment in BRI and DSR projects means encouraging participating countries to adopt Chinese standards for infrastructure development, transportation, finance, industry, digital economy, urbanization and data management – under the direction of leading Chinese companies. CAIH, designed for enhancing digital connectivity between China and ASEAN, will also be crucial in distributing Chinese digital standards for the related sectors throughout the ASEAN region.

The actual construction of CAIH however, at least until so far, has been mostly, though not entirely, about Guangxi's own digital development. In fact, the natural candidates to build an officially endorsed DSR project like CAIH should be the coastal provinces such as Guangdong and Zhejiang, which host China's most powerful technology giants (Huawei, ZTE, Alibaba, etc.). On their own, technology enterprises from these provinces (and from others) already have invested extensively in Southeast Asia and penetrated deeply into the region's markets, and they are very much part and parcel of the DSR promoted by Beijing. (It is to be emphasized here that although CAIH receives high-level backing, the DSR between China and Southeast Asia is never confined to CAIH exclusively.) Even the neighboring Guizhou, which has unexpectedly developed into a tech-

hub and was chosen as the secure location for national vital storage and backup systems (Chen, 2021), stands a good chance to host the CAIH project.

Beijing's acceptance of Guangxi's leading role in CAIH perhaps reflected its agenda of balanced development of the whole country. Rather than utilizing the existing advantages of its coastal powerhouses, here Beijing perhaps agreed with Guangxi's rationale that CAIH could be the linchpin for Guangxi's own development and transformation. In this sense, CAIH has indeed resulted in the steady progress of Guangxi's own digital development in the past few years. Its role as a linchpin for digital connectivity with Southeast Asia has so far been realized more limitedly only, as the focus has been to build up the foundation within Guangxi.

Still, CAIH remains a project committed to Guangxi's external orientation, the digital component of Guangxi's role as the gateway to ASEAN for China's southwest and mid-south regions. The specially mandated company for CAIH construction, CAIH Co., is the leading vehicle to fulfill such mission. The comprehensiveness of CAIH Co.'s range of activities and businesses offers it opportunities to cater to and engage with ASEAN countries with different levels of economic development. Especially to the poorer mainland Southeast Asian countries, CAIH Co. could be the ideal partner for investment and technology cooperation.

The ongoing COVID-19 pandemic has created greater demands in the digital economy sector,

which is going to be reinforced by the coming inauguration of the Regional Comprehensive Economic Partnership (RCEP) in 2022. In 2020, ASEAN already overtook the European Union as China's top trading partner, which illustrates the rapid economic integration of the Asian economic powerhouses. With a stronger domestic foundation, CAIH stands a good chance to be an impactful DSR project in the coming years and to contribute to Beijing's aspiration of establishing an integrated China-ASEAN industrial region.

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Endnotes

The author would like to thank Dr Zhang Miao of Xiamen University and Dr Luo Chuanyu of Guangxi University for their assistance in collecting some of the materials.

1. For report about this MIIT document, see <http://finance.sina.com.cn/china/20141111/020820781108.shtml>.
2. Guangxi Zhuang Autonomous Region is technically not a “province” but an “autonomous region,” but in all practicality it is not much different from a standard province of China.
3. <https://www.chinadailyhk.com/article/147620>.
4. Malaysia-China Kuantan Industrial Park is the sister industrial park of China-Malaysia Qinzhou Industrial Park. Both parks are referred together as the “Two Countries, Twin Parks” project.
5. <http://finance.people.com.cn/n/2014/0921/c1004-25702715.html>.
6. <http://gx.sina.com.cn/news/jingji/2016-06-18/detail-iftfrrf0592050.shtml>.
7. http://www.xinhuanet.com/english/2018-02/08/c_136959899.htm.
8. https://china.chinadaily.com.cn/2015-09/10/content_21840386.htm.
9. http://www.gxzf.gov.cn/gxydm/jmwl_29789/t1219427.shtml.
10. For the leadership composition of CAIH Office, see <http://dmxxg.gxzf.gov.cn/zwgk/ldxx/>.
11. http://fgw.nanning.gov.cn/xxgk_706/zcjdft4152716.html.
12. http://www.gxzf.gov.cn/gxydm/yw_29788/t7914506.shtml.
13. <http://dsjfzj.gxzf.gov.cn/zgdmxxg/jhgh/t667980.shtml>.
14. <http://gx.people.com.cn/n2/2021/0220/c179409-34584712.html>.
15. These include 14 projects under Infrastructure platform, 45 under Information Sharing platform, 58 under Technology Cooperation platform, 24 under Economic and Trade Services platform, and 24 under People-to-People platform. The total list can be found here: <http://dmxxg.gxzf.gov.cn/xmjs/>.
16. http://www.gxzf.gov.cn/gxydm/yw_29788/t7914506.shtml.
17. http://www.gx.xinhuanet.com/newscenter/2021-03/29/c_1127266290.htm.
18. This was shared to the author by a former government official of an ASEAN country who attended the Forum. Identity withheld.
19. <https://new.qq.com/omn/20200718/20200718A0SM1F00.html>.
20. <http://www.lzgcjld.com/article/1576.htm>.
21. <http://www.gx.chinanews.com/kjwt/2020-03-07/detail-ifzufups9219335.shtml>.
22. <http://www.caih.com/index.html>.
23. Interview with a company official of CAIH Co. on 21 April. Identity withheld.
24. http://www.caih.com/newsView_1898.html.
25. <https://www.seatrade-maritime.com/asia/singapore-s-crimsonlogic-launches-new-blockchain-service>.
26. http://www.caih.com/newsView_2696.html.
27. For more information about these alliances, see <http://cadea.caih.com/res>.
28. Interview with a company official of CAIH Co. on 21 April. Identity withheld.
29. https://www.ccpitgx.org/webcpitgx/en/webcpitgx/2020/economy_1123/6884.html.
30. https://www.sohu.com/a/415661901_376996.

Appendix 1

62 Work Tasks Identified in Guangxi government's *Implementation Plan for China-ASEAN Information Harbor (2019-2021)*

This list of 62 work tasks gives readers an idea of what CAIH construction is about. For each work task there are both leading agency(s) and supporting agency(s). Each work task will also be further divided into specific subprojects.

Number	Work Task
	Infrastructure Platform:
1	Comprehensively improve the international internet data channel 全面优化国际互联网数据专用通道
2	Speed up the construction of regional internet international exchange point 加快建设区域性互联网国际转接中心
3	Promote the construction of Beibu Gulf international cable station 推动北部湾国际海缆登陆站建设
4	Speed up the construction of the communication hub of China Telecom in Nanning's Wuxiang New Area 加快推进中国电信南宁五象新区国际性通信枢纽建设
5	Research and explore the construction of a new type of internet exchange point 研究探索新型互联网交换中心建设
6	Promote the construction of national level internet backbone structure in Nanning 推进南宁国家级互联网骨干直联点建设
7	Greatly promote the trial application and demonstration of 5G 大力推进5G（第五代移动通信技术）试商用网建设和应用示范
8	Continue to improve the construction and operation of Beidou network 持续优化北斗地基增强系统网络建设运营
9	Greatly promote the usage of Beidou towards ASEAN 大力推广面向东盟的北斗导航与位置服务的应用平台
10	Speed up the construction of a project on China-ASEAN Maritime Silk Road geospatial information and application demonstration 加快推进海上丝绸之路空间信息综合应用示范项目建设
11	Speed up the construction of an industrial park for Beidou navigation and geospatial information service 加快推进北斗卫星导航与地理信息服务产业园建设
12	Continue to expand on China-ASEAN international application and demonstration of the Beidou system 持续开展中国—东盟北斗国际化应用示范

Number	Work Task
Information Sharing Platform:	
13	Speed up and promote the construction of China-ASEAN big data center 加快推进中国—东盟信息港大数据中心建设
14	Speed up and promote the construction of China-ASEAN Information Town 加快推进中国—东盟信息港小镇建设
15	Steadily expand China-ASEAN cloud computing capabilities 稳步扩展中国—东盟信息港云计算服务能力
16	Greatly increase China-ASEAN big data service capabilities 大力提升中国—东盟大数据服务能力
17	Deepen the application of big data in existing industries 深入开展行业大数据应用服务
18	Push for the clustered development of cloud computing and big data industries 推动云计算、大数据产业集聚发展
19	Speed up the construction of a service platform for enterprises to “go out” 加快建设企业“走出去”公共服务平台
20	Speed up the construction of a China-ASEAN emergency response and command center 加快建设中国—东盟应急监测和决策指挥中心
21	Speed up the construction of a China-ASEAN animal and plant disease infection prevention control and data platform 加快建设中国—东盟动植物疫病疫情联合防控大数据平台
22	Proactively develop China-ASEAN cyber-security training 积极开展中国—东盟网络安全交流培训
23	Promote and develop joint China-ASEAN emergency exercises on cyber-security 推动开展中国—东盟网络安全联合应急演练
Technology Cooperation Platform:	
24	Speed up the construction of a China-ASEAN international technology transfer cluster zone 加快建设中国—东盟国际技术转移集聚区
25	Strengthen bilateral technology transfer centers and networks of cooperative construction 加强双边技术转移中心与协作网络建设
26	Explore the construction and operation of a China-ASEAN technology trading platform 探索推动中国—东盟技术交易平台建设运行
27	Speed up the construction of a China-ASEAN certification and inspection base 加快建设中国—东盟检验检测认证基地
28	Promote the construction of a China-ASEAN innovation incubator demonstration base 推动建设中国—东盟创业孵化示范基地
29	Proactively promote smart grid cooperation towards ASEAN 积极推动面向东盟的智能电网示范合作
30	Develop and grow a base for the digital and information industries 发展壮大一批电子信息产业基地

Number	Work Task
31	Cultivate and develop a base for headquarters of digital economy enterprises that are oriented towards ASEAN 培育发展一批面向东盟的数字经济总部基地
32	Speed up the development, technical innovation, and application of Internet-of-Things 加快发展物联网技术研发与特色应用示范
33	Proactively promote the future internet backbone construction in Nanning 积极推进未来网络南宁骨干节点建设
34	Greatly promote technology cooperation demonstration in China-Malaysia "Two Countries, Twin Parks" 大力推进中马“两国双园”技术合作示范
35	Positively develop smart manufacturing demonstration oriented towards ASEAN 积极开展面向东盟的智能制造示范
36	Speed up the construction of a China-ASEAN smart manufacturing industrial park 加快建设中国—东盟智能制造产业园
37	Deepen environmental technology and industry cooperation oriented towards ASEAN 深化面向东盟的环保技术与产业合作
38	Speed the construction of a modern agricultural information service platform 加快建设现代农业信息服务平台
39	Deepen the promotion of smart city demonstration park 深入推进智慧城市示范园区建设
40	Deepen and expand on pilot cooperation on smart city application 深化拓展智慧城市应用试点合作

Economic and Trade Platform:

- | | |
|----|--|
| 41 | Construct and improve on the virtual CAEXPO
建设完善网上中国—东盟博览会 |
| 42 | Continue the improvement of a cross-border e-commerce comprehensive service platform and its application
持续优化跨境电子商务综合服务平台应用发展 |
| 43 | Promote the construction of a China-ASEAN commodities exchange platform
推动建立中国—东盟大宗商品交易平台 |
| 44 | Deepen and promote the usage of Shang Mao Tong digital trading platform between China and ASEAN
深入推广中国—东盟“商贸通”数字平台应用 |
| 45 | Speed up the construction of a cross-border e-commerce cluster zone oriented towards ASEAN
加快建设面向东盟的跨境电商集聚区 |
| 46 | Continue the expansion of the usage of digital customs information platform
持续拓展电子口岸公共信息平台应用发展 |
| 47 | Speed up the construction of a Western Land-Sea New Corridor multi-purpose information service platform
加快建设西部陆海新通道多式联运综合信息服务平台 |
| 48 | Promote the upgrade of China-ASEAN Coastal City Cooperative Network
推动中国—东盟港口城市合作网络升级发展 |

Number	Work Task
49	Positively development an ASEAN-oriented regional logistics hub and its offshore warehouses 积极发展面向东盟的区域性物流集散中心和海外仓
50	Continue the construction of a China-ASEAN financial information platform 持续推进中国—东盟金融信息平台建设应用
51	Promote and improve on the cross-border cashless payment system between China and ASEAN 推动完善中国—东盟跨境支付体系
52	Build an ASEAN-oriented cross-border financial service district 打造面向东盟的跨境金融服务产业集聚区
People-to-People Platform:	
53	Speed up and promote the development of China-ASEAN e-sports industry 加快推进中国—东盟电子竞技产业发展
54	Deepen the development of creative industries oriented towards ASEAN 深入推进面向东盟的文化创意产业发展
55	Deepen China-ASEAN cooperation in internet audio-visual industries 深化中国—东盟网络视听产业基地产业合作
56	Continue to strengthen Guangxi's internet broadcast and service capabilities facing ASEAN 持续增强面向东盟的网络广播电视台服务能力
57	Speed up the construction of web-based translation platforms for cultural products 加快建设网络文化产品译制服务平台
58	Deepen the cooperation and development of telemedicine with ASEAN 深化面向东盟的远程医疗中心合作发展
59	Construct a China-ASEAN traditional medicine information service and trade platform 建设完善中国—东盟传统医药信息服务与交易平台
60	Strengthen China-ASEAN maritime emergency medicine and rescue cooperation and exchange 加强中国—东盟海上紧急医学救援合作交流
61	Promote China-ASEAN cooperation in vocational education 推进中国—东盟职业教育深入合作
62	Promote China-ASEAN cross-border tourism service platform 加快建设中国—东盟跨境旅游服务平台

Source: <http://dsjfzj.gxzf.gov.cn/zgdmxxg/jhgh/t667979.shtml>

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Imprint

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