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Bello**

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The Digital Silk Road Initiative:

Wiring Global IT and Telecommunications to Advance Beijing's
Global Ambitions





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Contents

- 04** Executive Summary
- 06** DSR Implementation Structure
- 07** The Digital Silk Road: Beijing’s Play for Global Digital and Telecommunications Power
- 07** *Key Drivers of Beijing’s DSR Initiative*
- 09** *Top PRC Organizations Lead All-of-Government Design and Implementation of DSR*
- 15** Implementing DSR: The “Going-Out” of PRC Information Technology Companies, Standards
- 17** *PRC Companies Integrating DSR into Global Strategies, Driving ICT Infrastructure Construction*
- 19** *Beijing Prioritizes Expansion of Fiber Optic Cable, Satellite Systems*
- 24** *Forming DSR Industry Alliances, Boosting PRC Government-Industry Coordination*
- 26** *Setting Standards, Altering the Competitive Landscape*

Contents (continued)

- 30** Case Study: Beijing Hands-on Guidance, Support of DSR—China-ASEAN Information Harbor Co. , Ltd.
- 41** Appendix A: Map and Table of Select DSR Projects
- 51** Appendix B: China Unicom Global Network Capabilities Map
- 52** Appendix C: Timeline of PRC Technical Standards Proliferation
- 55** Appendix D: Timeline of Selected DSR-Related Events and Announcements

Executive Summary

The Digital Silk Road Initiative (DSR; 数字丝绸之路) serves as a key pillar under Beijing’s “One Belt, One Road” (OBOR; 一带一路) strategy by promoting the construction and interconnection of the People’s Republic of China’s (PRC) information and communications technology (ICT) globally.

Its overarching objectives parallel and reinforce other terminology in vernacular Chinese commonly used to describe the PRC’s technology ambitions including “Information Silk Road” [信息丝路], “Network Power” [网络强国], and “Science and Technology Power” [科技强国].

Bottom Line

- ▶ Leveraging expanding global digitization and emerging technologies, the initiative—rolled out in a March 2015 multi-ministry white paper—provides PRC government and corporate entities a blueprint for aligning their activities with Beijing’s aim to increase the PRC’s position as a global ICT power.
- ▶ Led by top state bodies such as the NDRC, MOFA, MOFCOM, MIIT, and CAC, the DSR’s all-of-government design and implementation relies on the “going-out” of PRC ICT companies to take control of global ICT systems and standards and re-orient them to be reliant on PRC technology and digital domains.
- ▶ The PRC’s big three central state-owned telecommunications firms—China Telecom, China Unicom, and China Mobile—play an important role in the development of OBOR by focusing on building transnational land and submarine cable systems, a key component of an integrated IT and communications technology system, which has become an urgent priority of Beijing’s DSR initiative during the past three years.

- ▶ The emergence and development of Guangxi provincial state-owned enterprise (SOE) China-ASEAN Harbor Information Co., Ltd. (CAIH; 中国—东盟信息港股份有限公司) as a base for the slice of DSR facing Southeast Asia illustrates the critical role PRC government-controlled commercial entities play in implementing Beijing's DSR priorities.

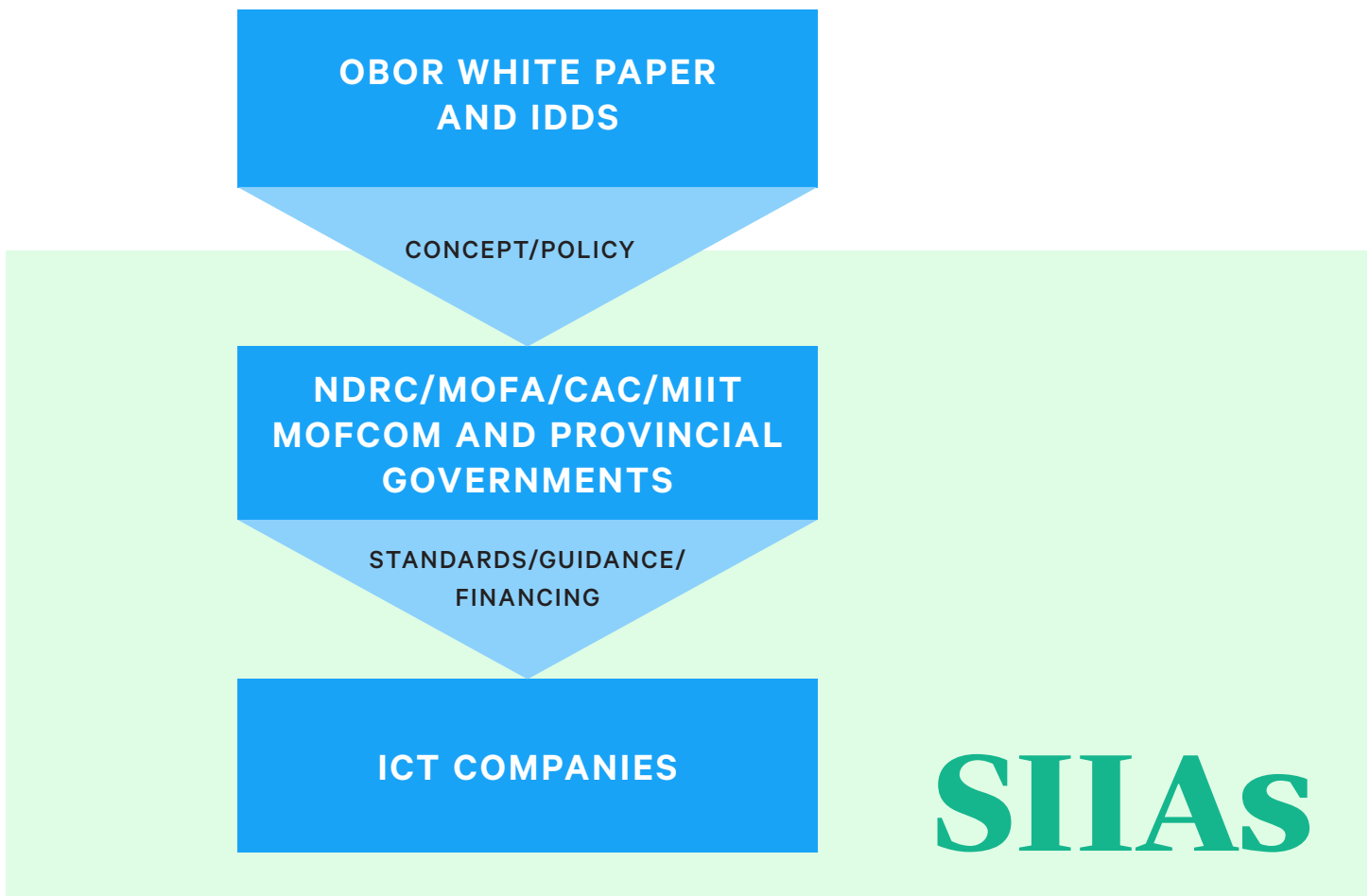
Risk Implications

The dominant role that PRC entities have and will continue to play in DSR presents risks to global markets and political stability, as PRC companies often leverage preferential financing creating anti-competitive scenarios when completing infrastructure projects overseas. Furthermore, PRC-built and operated high-technology infrastructure such as fiber optic cables, navigation satellites, and smart cities likely grant Beijing firmer control over the global flow of data, enabling PRC entities to communicate more securely by evading U.S.' and allies' intelligence and law enforcement, obtaining sensitive proprietary information, and deny ICT access to U.S. and allied users when it serves Beijing's objectives to do so.

DSR Implementation Structure

The below chart provides an overview of the guiding PRC policies and entities, which are covered in more detail in this report, that work to advance DSR. DSR is a pillar initiative of China's "One Belt, One Road" plan but it also serves to advance the PRC's Innovation Driven Development Strategy (IDDS), which looks to elevate China's innovation position in the world. These in turn provide the basis for DSR's implementation by key PRC government agencies, including the National Development Reform Commission (NDRC), Ministry of

Industry and Information Technology (MIIT), Ministry of Commerce (MOFCOM), Ministry of Foreign Affairs (MOFA), and the Cyberspace Administration of China (CAC). These agencies then relay the relevant guidance, standards, and financial support to ICT companies, both state-owned and private to include military contractors, to go out and actually build DSR through fiber optic, satellite, and other related projects worldwide. State-Industry Innovation Alliances (SIIAs) provide a platform for all of these actors to coordinate DSR efforts.



01

The Digital Silk Road: Beijing's Play for Global Digital and Telecommunications Power

Key Drivers of Beijing's DSR Initiative

THE DIGITAL SILK ROAD INITIATIVE (DSR; 数字丝绸之路) serves as a key pillar under Beijing's "One Belt, One Road" (OBOR; 一带一路) strategy aimed at expanding the PRC's control of global information and communications technology (ICT) through the construction of digital infrastructure globally. DSR encompasses ICT ranging from satellite communications and smart cities to fiber optic networks and e-commerce. While it has quickly become a catch all for advancing the overseas activities of PRC technology companies, its objectives go beyond opening markets and expanding trade.

- ▶ The initiative, which dovetails with other key PRC strategies (e. g. Internet+), provides PRC government and corporate entities a blueprint for aligning their activities with Beijing's objectives to promote the PRC's role in the digital transformation of developed

and developing countries.¹ It seeks to establish the PRC as a leader through expanding broadband access, upgrading the quality of digital technology and infrastructure, and increasing global connectivity to the PRC.²

- ▶ DSR serves as the lead implementation mechanism of Beijing's efforts to become a global ICT leader. A speech by General Secretary Xi Jinping [习近平] in April 2018 at the National Cybersecurity and Informatization Work Conference [全国网络安全和

1 Official PRC government documents cast DSR as a means for assisting in the economic development of emerging economies. For example, see "One Belt, One Road Data View: Report says the level of informatization development along One Belt, One Road is uneven and that the "digital divide" has become a prominent issue in the "North-South Imbalance" problem ["一带一路"数据观: 报告称"一带一路"沿线信息化发展水平不均 "数字鸿沟"成"南北失衡"问题突出表现]," State Information Center website, (April 18, 2018), accessed January 15, 2019 at <http://www.sic.gov.cn/News/614/9735.htm>

2 "Seven countries jointly launched initiatives to open a new chapter in 'Digital Silk Road' cooperation [7国共同发起倡议开启"数字丝绸之路"合作新篇章]," China Belt and Road Network [中国一带一路网], (December 4, 2017), accessed on November 28, 2018 at <https://www.yidaiyilu.gov.cn/xwzx/gnxw/38281.htm>

While rolled out under the OBOR initiative, DSR appears to also be one of the chief tools for implementing Beijing's broader vision of elevating the PRC's role in global innovation and information connectivity as captured in its Innovation Driven Development Strategy (IDDS; 创新驱动发展战略).

信息化工作会议] in Beijing made the DSR the centerpiece of a clear strategy on improving the PRC's digital prowess by promoting China as a leader in the global digital economy and contributing to PRC-led international cyberspace governance.³

- ▶ The DSR's underlying concept of constructing and improving digital infrastructure connectivity was included in the "Vision and Action to Promote the Construction of the Silk Road Economic Belt and the 21st Century Maritime Silk Road" [推动共建丝绸之路经济带和21世纪海上丝绸之路的愿景与行动], hereinafter referred to as 2015 OBOR White Paper, calling for the "construction of cross-border optical cables and other communications trunk line networks" and improving satellite information passage-ways to create an "Information Silk Road."⁴
- ▶ The May 2017 joint communique from the "Belt and Road Forum" also calls for promoting digital infrastructure connecting OBOR countries to "put in place an international infrastructure network over time."⁵
- ▶ Similar to its depiction of OBOR's broader infrastructure development activities, Beijing portrays DSR as leading the collaborative provision of global "public goods"

by addressing legitimate digital infrastructure deficiencies across Asia, Africa, and the Middle East.⁶

While rolled out under the OBOR initiative, DSR appears to also be one of the chief tools for implementing Beijing's broader vision of elevating the PRC's role in global innovation and information connectivity as captured in its Innovation Driven Development Strategy (IDDS; 创新驱动发展战略).⁷ For example, China's 13th Five-Year Plan [十三五计划] outlines specific priorities for building and improving fiber optic networks and global telecommunications services, accelerating the deployment of PRC-built satellites, and promoting the development and application of next-generation information technologies (IT) such as fifth-generation (5G) mobile communications, cloud computing, autonomous operating systems, and artificial intelligence (AI).⁸

- ▶ IDDS is the keystone of China's technology policy under General Secretary Xi Jinping. It not only enshrines successful tools developed

3 "International community actively discusses Xi Jinping's National Internet Work Conference Speech: Digital Silk Road gives "One Belt, One Road" new substance [国际人士热议习近平全国网信工作会议讲话：数字丝绸之路赋予“一带一路”以崭新内容], People's Daily [人民日报], rehosted on the Belt and Road Portal [中国一带一路网], (April 23, 2018), accessed on December 4, 2018 at <https://www.yidaiyilu.gov.cn/ghsl/hwks/53698.htm>

4 "Vision and Actions on Jointly Building Silk Road Economic Belt and 21-st Century Maritime Silk Road," National Development and Reform Commission website, (March 28, 2015), accessed on December 31, 2018 at http://en.ndrc.gov.cn/newsrelease/201503/t20150330_669367.html

5 "Full text: Joint communique of leaders roundtable of Belt and Road forum," Xinhua News website, (May 15, 2017), accessed on December 31, 2018 at http://www.xinhuanet.com/english/2017-05/15/c_136286378.htm

6 Wang Xiaofeng [汪晓凤], "The Digital Silk Road and Collaborative Supply of Public Goods [数字丝绸之路与公共产品的合作供给]" Fudan International Relations Review [复旦国际关系评论], (2015), Issue 16 pages 171-184, accessed on January 14, 2019 at <http://www.cas.fudan.edu.cn/picture/2474.pdf> and <http://www.cas.fudan.edu.cn/view.php?id=2511> (Abstract: "The development momentum of the Digital Silk Road comes from the outward extension of China's development strategy and the objective needs of the development of the information society in the region. The construction of the Digital Silk Road puts forward the demand for regulatory public goods such as market openness and financing facilities in the field of information communication and networking, such as the development of public goods, information and network security, and other public goods and cyberspace governance concepts. At the current stage, China, as the sponsor of the initiative, should provide pilot support for the construction of the digital Silk Road, and at the same time promote the cooperation of large countries, regional cooperation platforms and inter-regional international mechanisms to supply public goods.")

7 "Central Committee of the Communist Party of China and the State Council Release the Outline of the Innovation-Driven Development Strategy [中共中央国务院印发《国家创新驱动发展战略纲要》], Xinhua News Agency, (May 19, 2016), accessed on December 12, 2018 at http://www.xinhuanet.com/politics/2016-05/19/c_1118898033.htm

8 Section 25 of "Outline of the Thirteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China [中华人民共和国国民经济和社会发展第十三个五年规划纲要], State Council of the People's Republic of China [中华人民共和国国务院], (March 17, 2016), accessed on November 30, 2018 at http://www.gov.cn/xinwen/2016-03/17/content_5054992.htm

through existing PRC science and technology programs but also advances new policy guidance to more effectively channel state capital supporting the acquisition of foreign technology and the “going out” of PRC information technology companies.

- ▶ Other national industrial strategies such as the 13th Five-Year Plan on National Informatization [十三五国家信息化规划] and the National 13th Five-Year Plan for the Development of the Information and Communication Industry [信息通信行业发展计划] call for achieving systematic breakthroughs in “indigenously innovated core technologies” by 2020 and promoting the integration of information and communication industries to better position PRC Internet of Things (IoT) companies to compete globally, respectively.⁹

Top PRC Organizations Lead All-of-Government Design and Implementation of DSR

THE OVERARCHING CONCEPT OF DSR was publicly introduced in the 2015 policy paper “Vision and Action on Jointly Building the Silk Road Economic Belt and 21st-Century Maritime Silk Road” (2015 OBOR White Paper; [推动共建丝绸之路经济带和21世纪海上丝绸之路的愿景与行动]) jointly issued by the National Development and Reform Commission (NDRC; 国家发展和改革委员会), Ministry of Foreign Affairs (MOFA; 外交部) and Ministry of Commerce (MOFCOM;

商务部).¹⁰ These three State Council [国务院] agencies along with the Cyberspace Administration of China (CAC; 国家互联网信息办公室) and the Ministry of Industry and Information (MIIT; 中华人民共和国工业和信息化部), play leading roles in DSR implementation and promotion.¹¹ At the same time, the elevation of OBOR and with it DSR to a national strategy has led many levels of PRC government, including local levels, and enterprises to take on leadership components of DSR.

- ▶ NDRC maintains a principal and administrative role in the Leading Small Group for “Belt and Road” Construction Promotion [推进“一带一路”建设工作领导小组], the PRC State Council’s main promotion and coordination office for OBOR related activities, judging by the personnel leading the Small Group and its General Office (see tables on next page).
- ▶ NDRC Director and Party Secretary He Lifeng [何立峰] acts as both a deputy head of the Leading Small Group as well as the Director of the Leading Small Group Office, which is housed within NDRC.¹²






9 “Notice of the State Council on Printing and Distributing the National Informatization Plan of the 13th Five-Year Plan [国务院关于印发“十三五”国家信息化规划的通知],” State Council of the People’s Republic of China [中华人民共和国国务院], (2016), accessed on December 11, 2018 at http://www.gov.cn/zhengce/content/2016-12/27/content_5153411.htm; and “Information and Communication Industry Development Plan (2016-2020) [信息通信行业发展规划 (2016-2020年)],” Ministry of Industry and Information Technology of the People’s Republic of China [中华人民共和国工业和信息化部], (March 29, 2017), accessed on December 13, 2018 at <http://netsecinfo.com/html/372951349.html>

10 “Vision and Action on Jointly Building the Silk Road Economic Belt and 21st-Century Maritime Silk Road [推动共建丝绸之路经济带和21世纪海上丝绸之路的愿景与行动],” NDRC [国家发展和改革委员会], MOFA [外交部], MOFCOM [商务部], issued by the State Council [经国务院授权发布], (March 2015), accessed on January 14, 2018 at <http://www.mofcom.gov.cn/article/i/dxfw/jlyd/201601/20160101243342.shtml>; and “China’s ‘Belt and Road’ Plan officially announced (full text) [中国“一带一路”规划正式公布 (全文)],” State Council Information Office of the People’s Republic of China [中华人民共和国国务院新闻办公室], (May 4, 2016), accessed on December 12, 2018 at <http://www.scio.gov.cn/xwfbh/yg/2/Document/1476317/1476317.htm>; and English version available at: “Vision and Action on Jointly Building the Silk Road Economic Belt and 21st-Century Maritime Silk Road,” Issued by the National Development and Reform Commission, Ministry of Foreign Affairs, and Ministry of Commerce of the People’s Republic of China with State Council authorization, (March 2015), accessed on December 12, 2018 at: http://en.ndrc.gov.cn/newsrelease/201503/t20150330_669367.html




11 “State Council Departments [国务院组成部门],” The Central People’s Government of the People’s Republic of China [中华人民共和国中央人民政府], (undated), accessed on December 4, 2018 at http://www.gov.cn/gjjj/2008-04/25/content_7969.htm

12 “Belt and Road” Construction Promotion Leading Small Group convened an office director meeting [推进“一带一路”建设工作领导小组办公室召开办公室主任会议],” National Development and Reform Commission [中华人民共和国国家发展和改革委员会], (July 6, 2018), accessed on December 4, 2018 at http://www.ndrc.gov.cn/xwzx/xwfb/201808/t20180828_896317.html

Leadership of the Leading Small Group for “Belt and Road” Construction Promotion

	POSITION	NAME	OTHER AFFILIATION
	Leader	Han Zheng [韩正]	Vice Premier
	Deputy Head	Yang Jiechi [杨洁篪]	State Councilor; Director of the Central Foreign Affairs Commission
	Deputy Head	Hu Chunhua [胡春华]	Vice Premier
	Deputy Head	Xiao Jie [肖捷]	Secretary-General of the State Council
	Deputy Head	He Lifeng [何立峰]	Director/Chairman of the NDRC

Leadership of the General Office of the Leading Small Group for “Belt and Road” Construction Promotion

	POSITION	NAME	OTHER AFFILIATION
	Director	He Lifeng [何立峰]	Director of the NDRC
	Deputy Director	Qian Keming [钱克明]	Vice Minister of Commerce
	Deputy Director	Ning Jizhe [宁吉喆]	Deputy Director of the NDRC; Director of National Bureau of Statistics

In addition to the Leading Small Group for Belt and Road Construction Promotion, NDRC's International Cooperation Center (ICC; 国际合作网) implements projects between the NDRC and other international organizations, enterprises, and foreign governments.¹³

- ▶ ICC Director Huang Yong [黄勇] in June 2018 gave the keynote address at the China Urban Credit Construction Summit in Fuzhou where he discussed the significance of the ICC's Foreign Credit Identification System [外商信用识别系统], a big data platform that may allow the PRC government to assign credit ratings to foreign businesses based on their willingness to abide by PRC law, judging from the structure of Beijing's domestic Social Credit System. Yong noted that the Foreign Credit Identification System, alongside other PRC-built social credit monitoring systems, will gradually be applied to OBOR projects to assist both PRC and international organizations in assessing risk.¹⁴
- ▶ NDRC's National Information Center [国家信息中心] is the PRC's national decision-making advisory body and national e-government service platform tasked with economic analysis, forecasting, and information and big data applications.¹⁵ It is responsible for providing macro-level decision-making support to the Communist Party Central Committee, the State Council,

NDRC, and other government departments at all levels.¹⁶ The center also maintains a database of DSR construction progress.¹⁷

MOFA continues to co-govern DSR-related foreign affairs and utilizes diplomatic relationships to promote DSR as a component of PRC diplomatic strategy, to include posting information technology attaches in embassies, and public diplomacy to create access for PRC entities working on DSR projects in foreign countries.¹⁸ MOFA representatives have participated in and organized events aimed at showcasing PRC companies and promoting PRC policies in key strategic nations, as evidenced by an October 2017 Silk Road Digital Interconnection Round Table in Rome, Italy.

- ▶ The PRC Embassy in Rome participated in the Silk Road Digital Interconnection Round Table that brought together diplomatic leaders from Italy and the PRC, including the PRC Ambassador to Italy Li Ruiyu [李瑞宇]. The meeting also convened representatives from large PRC firms such as Huawei, Tencent,

13 "Introduction to the International Cooperation Center of the National Development and Reform Commission [国家发展改革委员会国际合作中心简介]," International Cooperation Center of the National Development and Reform Commission, (undated), accessed on December 12, 2018 at http://www.icc-ndrc.org.cn/center_Profile.jsp

14 "Constructing a new pattern of 'Belt and Road' credit work to create a digital silk road for the new era [构建“一带一路”信用工作新格局打造新时代数字丝绸之路]," International Cooperation Center [国际合作中心], (June 11, 2018), accessed on December 12, 2018 at http://www.icc-ndrc.org.cn/news_detail.jsp?id=600962

15 NDRC's Information Center is also referred to as the "National E-Government Extranet Management Center" [国家电子政务外网管理].

16 "Introduction to the National Information Center [国家信息中心简介]," National Information Center [国家信息中心], (undated), accessed on December 12, 2018 at <http://www.sic.gov.cn/Column/94/0.htm>

17 "Digital Silk Road Construction [数字丝路建设]," National Information Center's Big Data and Digital China [国家信息中心 大数据与数字中国], (undated), accessed on December 12, 2018 at <http://www.sic.gov.cn/Column/614/0.htm>

18 Chen Hui and Dong Jianjun, "Accelerating the Promotion of the One Belt, One Road Information and Communication Industry Going Out [加快推进“一带一路”信息通信业走出去]," CAICT website, (November 14, 2018), accessed on January 9, 2018 at http://www.caict.ac.cn/kxyj/caictgd/201811/t20181114_188712.htm; and "In 2017, the concept of 'One Belt, One Road' is deeply rooted in the hearts of the people [2017年“一带一路”理念深入人心建设成果丰硕世界瞩目]," PRC official news agency Xinhua's Silk Road website, (January 8, 2018), accessed on January 15, 2019 at <http://silkroad.news.cn/2018/0108/78362.shtml>. (Text: "... On December 18, 2017, the National Development and Reform Commission, the Ministry of Commerce, the People's Bank of China, the Ministry of Foreign Affairs and the National Federation of Industry and Commerce issued the "Code of Conduct for Overseas Investment and Management of Private Enterprises", and carried out overseas investment and management of private enterprises from five aspects: improving the management system. Guide and specification. . .")

and Alibaba.¹⁹ Ambassador Li at the October 2017 roundtable stated that China and Italy should form a strategic partnership to collaborate on the development of new technologies and expand digital economic cooperation.²⁰

- ▶ At the roundtable, Lu Yiji [鲁乙己] Chairman of the Ministry of Civil Affairs-registered China-Europe Digital Association (ChinaEU;

中欧数字协会)²¹ ²² stressed that China and the European Union (EU) must collaborate to promote the development of next-generation technologies. Mr. Lu highlighted that companies such as Alibaba and Huawei are actively seeking new markets in Europe and aim to not only localize operations in Italy, but also present themselves as model examples of successful Sino-Italian cooperation.²³

Mr. Lu highlighted that companies such as Alibaba and Huawei are actively seeking new markets in Europe and aim to not only localize operations in Italy, but also present themselves as model examples of successful Sino-Italian cooperation.

19 “People from all walks of life in China and Italy: The Sino-Italian ‘Digital Silk Road’ has broad prospects for construction [中意各国人士：中意“数字丝绸之路”建设前景广阔],” Economic Daily [经济日报], (October 30, 2017), accessed on December 12, 2018 at <https://www.yidaiyilu.gov.cn/xwzx/hwxw/32098.htm>; and “The Embassy in Italy hosted the ‘Silk Road Digital Interconnection’ Round Table [驻意大利使馆举办“丝绸之路·数字互联互通”院周会],” Ministry of Foreign Affairs of the People’s Republic of China [中华人民共和国外交部], (October 26, 2017), accessed on December 12, 2018 at https://www.fmprc.gov.cn/web/zwbdt673032/gzhd_673042/t1504740.shtml

20 “People from all walks of life in China and Italy: The Sino-Italian ‘Digital Silk Road’ has broad prospects for construction [中意各国人士：中意“数字丝绸之路”建设前景广阔],” Economic Daily [经济日报], (October 30, 2017), accessed on December 12, 2018 at <https://www.yidaiyilu.gov.cn/xwzx/hwxw/32098.htm>; and “The Embassy in Italy hosted the ‘Silk Road Digital Interconnection’ Round Table [驻意大利使馆举办“丝绸之路·数字互联互通”院周会],” Ministry of Foreign Affairs of the People’s Republic of China [中华人民共和国外交部], (October 26, 2017), accessed on December 12, 2018 at https://www.fmprc.gov.cn/web/zwbdt673032/gzhd_673042/t1504740.shtml; and “New era, new opportunities, speeding up digital interconnection [新时代·新机遇·提速数字互联互通],” Ministry of Foreign Affairs of the People’s Republic of China [中华人民共和国外交部], (October 26, 2017), accessed on December 13, 2018 at https://www.mfa.gov.cn/web/dszlsjt_673036/ds_673038/t1504738.shtml

21 “China-EU Digital Association (ChinaEU) [中欧数字协会]” China Internet Development Foundation [中国互联网发展基金会], (undated), accessed on January 15, 2019 at http://www.cidf.net/2015-11/10/c_1117090534.htm (Text: “The China-EU Digital Association (ChinaEU) is the first business-oriented China Europe International Association to promote strategic dialogue and high-level dialogue between industry leaders, financial institutions and senior government representatives in the ICT sector in China and Europe. Develop and implement a concrete and positive agenda through collaboration. ChinaEU has offices in Brussels and Beijing. The association aims to strengthen cooperation, trade and investment in digital products and services while promoting the establishment of common standards for ICT (information, communication, technology). ChinaEU is ICT’s most advanced public-private partnership, connecting major members of the Internet industry in China and Europe, telecom operators, high-tech companies with Chinese government agencies, as well as senior EU officials and inspection agencies. It is also an incubator for project cooperation and digital entrepreneurship between Chinese and European companies.”)

22 “Introduction to the China Internet Development Foundation [中国互联网发展基金会简介],” China Internet Development Foundation [中国互联网发展基金会], (undated), accessed on January 15, 2019 at <http://www.cidf.net/jjhj.htm> (Text: “. . . The China Internet Development Foundation (CIDF) is a national public fundraising foundation approved by the State Council and registered with the Ministry of Civil Affairs . . .”)

23 “People from all walks of life in China and Italy: The Sino-Italian ‘Digital Silk Road’ has broad prospects for construction [中意各国人士：中意“数字丝绸之路”建设前景广阔],” Economic Daily [经济日报], (October 30, 2017), accessed on December 12, 2018 at <https://www.yidaiyilu.gov.cn/xwzx/hwxw/32098.htm>; and “The Embassy in Italy hosted the ‘Silk Road Digital Interconnection’ Round Table [驻意大利使馆举办“丝绸之路·数字互联互通”院周会],” Ministry of Foreign Affairs of the People’s Republic of China [中华人民共和国外交部], (October 26, 2017), accessed on December 12, 2018 at https://www.fmprc.gov.cn/web/zwbdt673032/gzhd_673042/t1504740.shtml

DSR Memorandums of Understanding (MOUs)

The chart below provides insight into MOUs signed between the PRC and foreign governments for cooperation on and participation in DSR activities.

YEAR	COUNTRY
2016	Cyprus
2016, 2017	Serbia
2016	Poland
2016, 2017	Turkey
2016, 2017	Saudi Arabia
2016	Czech Republic
2016	Cuba
2017	Egypt
2017	Laos
2017	Thailand
2017	United Arab Emirates

Sources: Belt and Road Portal, Xinhua News Agency, People's Daily, National Development and Reform Commission

MOFCOM promotes opportunities for PRC firms to trade and engage in e-commerce with foreign demand in strategic OBOR/DSR markets.

- ▶ MOFCOM in conjunction with the Fujian Provincial Government in December 2018 hosted the “One Belt, One Road” Cross-Border E-Commerce International Cooperation Summit [“一带一路”跨境电商国际合作高峰论坛]. Deputy Director of MOFCOM’s Foreign Trade Department Zhang Li noted at the event that Russia, the Middle East, South Asia, and Southeast Asia have become new growth points for PRC cross-border e-commerce companies.²⁴
- ▶ MOFCOM’s China Service Trade Guidance Network in June 2018 released the first

cross-border e-commerce innovation research report in Hangzhou, demonstrating the positive impacts and developments in China’s e-commerce industry. According to MOFCOM, Hangzhou’s foreign e-commerce transactions increased by 23.8% from January to May of 2018, demonstrating how Hangzhou is working towards becoming a DSR hub city.²⁵

- ▶ Vice Minister of Commerce Qian Keming is heavily involved in matters relating to OBOR and DSR initiatives, having been active in promoting the economic benefits of the two initiatives at several domestic and international forums, according to official PRC media

²⁴ “Create a cross-border e-commerce ‘digital silk road’ [打造跨境电商“数字丝路”],” Economic Daily [经济日报] rehosted on PRC official government website [中华人民共和国中央人民政府], (December 3, 2018), accessed on December 13, 2018 at http://www.gov.cn/xinwen/2018-12/03/content_5345311.htm

²⁵ “The first ‘cross-border e-commerce innovation research report’ was released in Hangzhou [首个《跨境电子商务创新研究报告》在杭发布],” China Service Trade Guidance Network [中国服务贸易指南网], (June 29, 2018), accessed on December 13, 2018 at <http://tradeinservices.mofcom.gov.cn/article/news/gnxw/201806/64258.html>

The CAC has shared a leading role in advocating PRC dominance in the global digital economy, as well as a need for increased PRC governance and management over cyberspace and global data.

reporting.²⁶ He is concurrently the Deputy Director of the Leading Small Group for “Belt and Road” Construction Promotion Office.²⁷

CAC leadership appears to have contributed to the conceptualization of DSR, judging by public statements surfacing as early as 2015. Since the initiative was laid out in 2015 and officially promoted by Xi Jinping in 2017, the CAC has shared a leading role in advocating PRC dominance in the global digital economy, as well as a need for increased PRC governance and management over cyberspace and global data.

- ▶ CAC’s then-chairman Lu Wei [鲁炜] at the China-ASEAN Information Harbor Forum in September 2015 noted the increasing importance and power of digital economy to China’s growth.²⁸ Plans and accomplishments listed by Lu and others at the 2015 Forum include:²⁹
- ▶ PRC-proposed deepening of cyberspace cooperation and development with ASEAN;

- ▶ China Unicom’s construction of an overseas submarine cable link with Myanmar;
- ▶ A special PRC government fund for internet and telecommunications infrastructure to link China to ASEAN;
- ▶ The signing of a bilateral MoU on Cyberspace Cooperation and Development by the PRC and Laos; and
- ▶ PRC-ASEAN talks on an upgraded version of the China-ASEAN Free Trade Area.

▶ DSR appeared prominently in the title and text of a keynote presentation to the 15th China Online Media Forum in Zhanjiang, presented by the forum master of ceremonies Ren Xianliang [任贤良], then-deputy director of the National Internet Information Office (the CAC), which is mirrored by the CPC Office of the Central Cyberspace Affairs Commission.³⁰

As discussed in the following section, in November 2018, MIIT’s Science and Technology Department issued implementation guidance for the 2018-2020 standards action plan in support of OBOR.³¹ In the same month, senior researchers from MIIT’s China Academy of Information and Communications Technology (CAICT) introduced a range of actions to accelerate the “going out” of PRC ICT firms and construction of DSR.³²

26 “Speech by Vice Minister Qian Keming at the ‘Belt and Road’ Forum in Tbilisi [钱克明副部长在比第比利斯“一带一路”论坛上的致辞],” Ministry of Commerce of the People’s Republic of China: Vice Minister Qian Keming [中华人民共和国商务部副部长钱克明], (November 28, 2017), accessed on December 13, 2018 at <http://qiankeming.mofcom.gov.cn/article/speeches/201712/20171202681184.shtml>; and “The State Council Information Office held a five-year progress and outlook conference for the joint construction of the ‘Belt and Road’ [国新办举行共建“一带一路”5年进展及展望发布会],” State Council Information Office [国务院新闻办公室], (August 27, 2018), accessed on December 13, 2018 at <http://www.scio.gov.cn/xwfbh/xwfbh/wqfbh/37601/38866/index.htm>; and “China’s five-year cargo trade volume along the Belt and Road initiative exceeds US\$5 trillion [中国与一带一路沿线国家五年货物贸易额超五万亿美元],” State-Owned Assets Supervision and Administration Commission of the State Council [国务院国有资产监督管理委员会], (April 16, 2018), accessed on December 13, 2018 at <http://www.sasac.gov.cn/n2588025/n2588119/c8870509/content.html>

27 “The State Council Information Office held a five-year progress and outlook conference for the joint construction of the ‘Belt and Road’ [国新办举行共建“一带一路”5年进展及展望发布会],” State Council Information Office [国务院新闻办公室], (August 27, 2018), accessed on December 13, 2018 at <http://www.scio.gov.cn/xwfbh/xwfbh/wqfbh/37601/38866/index.htm>

28 “China-ASEAN Information Harbor Forum September 13-14, 2015,” China Daily, (September 2015), accessed on December 11, 2018 at <http://www.chinadaily.com.cn/business/informationharbor/index.html>

29 “China-ASEAN Information Harbor Forum September 13-14, 2015,” China Daily, (September 2015), accessed on December 11, 2018 at <http://www.chinadaily.com.cn/business/informationharbor/index.html>

30 “Ren Xianliang delivered a keynote speech: Building a ‘Digital Silk Road’ [任贤良发表主旨演讲：共建“数字丝绸之路”],” China Daily [中国日报], (July 17, 2015), accessed on December 17, 2018 at http://forum2015.chinadaily.com.cn/2015-07/17/content_21308339.htm

31 See “industrial communications” implementation guidance for the 2018-2020 standards action plan in support of OBOR issued by the Science and Technology Department of the Ministry of Industry and Information Technology (MIIT): “Implementation Opinions of the Ministry of Industry and Information Technology on the Harmonization of Industrial Communication Industry Standards in Service of Construction of the ‘Belt and Road’ [工业和信息化部关于工业通信业标准化工作服务于“一带一路”建设的实施意见],” Key Work [重点工作] webpage of MIIT’s official website, (November 12, 2018), accessed on January 10, 2019 at <http://www.miit.gov.cn/n1146290/n4388791/c6480447/content.html>

32 Chen Hui and Dong Jianjun, “Accelerating the Promotion of the One Belt, One Road Information and Communication Industry Going Out [加快推进“一带一路”信息通信业走出去],” CAICT website, (November 14, 2018), accessed on January 9, 2018 at http://www.caict.ac.cn/kxyj/caictgd/201811/t20181114_188712.htm

02

Implementing DSR: The “Going-Out” of PRC Information Technology Companies, Standards

UNDER THE GUIDANCE OF PRC government agencies and financial institutions, PRC telecommunications, Internet and advanced technology companies—whether central state-owned enterprises (SOEs), provincial SOEs, or otherwise—are leading forces advancing Beijing’s DSR initiative.³³ These entities’ overseas activities are guided and enhanced by a growing suite of PRC government policy, diplomatic, and financial support measures, especially in key emerging markets where PRC companies are competing with Western ICT firms.

PRC government efforts to support DSR construction are ramping up and increasingly focused on driving progress in key sectors, such as telecommunications. PRC government agencies and financial institutions are introducing new policies to support PRC companies implement DSR initiatives.

▶ NDRC and China Development Bank announced on 17 September 2018 the signing of the “Comprehensive Support for Developing the Digital Economy and Developmental Finance Cooperation Agreement”

[全面支持数字经济发展开发性金融合作协议] pledging over RMB 100 billion (\$14.57 billion) in investment over the next five years to support big data, IoT, cloud computing, construction of new smart cities, and overall DSR construction.³⁴

- ▶ In November 2018, senior CAICT researchers introduced a range of actions to accelerate the “going out” of PRC ICT firms and construction of DSR.³⁵
- ▶ Proposed actions include developing new assessment policies for PRC telecom companies (e.g. network layout and market share) and removing profit as a key indicator to encourage PRC firms to enter and occupy key



▲
Announcement of the September 2018 “Comprehensive Support for Developing Finance Cooperation Agreement” signed between NDRC and China Development Bank.
Source: China News

³³ “Digital China Construction Development Report (2017) [数字中国建设发展报告（2017年）],” *Economic Daily* [经济日报], (May 14, 2018), accessed on December 17, 2018 at http://www.sohu.com/a/231552993_118392

³⁴ “NDRC and China Development Bank sign Comprehensive Support for Developing the Digital Economy and Developmental Finance Cooperation Agreement [国家发展和改革委员会与国家开发银行签署《支持数字经济发展开发性金融合作协议》],” PRC State Council website, (September 19, 2018), accessed on January 2, 2019 at http://www.gov.cn/xinwen/2018-09/19/content_5323492.htm

³⁵ Chen Hui and Dong Jianjun, “Accelerating the Promotion of the One Belt, One Road Information and Communication Industry Going Out [加快推进“一带一路”信息通信业走出去],” CAICT website, (November 14, 2018), accessed on January 9, 2018 at http://www.caict.ac.cn/kxyj/caictgd/201811/t20181114_188712.htm

markets as part of China's foreign strategy, especially where there is competition with Western countries to secure the dominant position in cyberspace.³⁶

- ▶ Additional measures outlined by CAICT include strengthening financial policy support for information and communication

industry overseas investments, strengthening government and industry level coordination, and adding more information technology officers at PRC embassy's around the world to incorporate the "going out" of PRC ICT companies into Beijing's diplomatic strategy.

CAICT Proposed Actions for Accelerating the "Going Out" of the ICT Industry

PROPOSED ACTIONS [措施建议]	DESCRIPTION
Specialized assessment policy for overseas investment of telecommunications industry [专门对电信运营业海外投资给予特殊的考核政策]	Establish new assessment indicators at the national strategic level for the "going out" of the telecom industry to include overseas network layout and market share and no longer assess profit; encourage enterprises to enter and occupy the market, even if it is difficult to achieve economic benefit, especially in the competition with Western countries for the dominant strategic position in cyberspace
Strengthen financial policy support for information and communication industry overseas investments [加强对信息通信业海外投资的金融政策支持]	Establish guidance funds to support the "going out" of telecom industry; tilt towards providing concessional loans to ICT construction, equipment manufacturing, and Internet application projects; support ICT companies to receive financing for foreign projects from international financial institutions such as AIIB, Silk Road Fund, and BRICS Bank
Strengthen government and industry level coordination [加强政府及行业层面协同力度]	Government to take the lead to unite enterprises, establish cross-industry coordination mechanism; build industry "going out" information database; promote cross-border construction of communication infrastructure and low cost and rapid construction of strategic facilities such as backbone fiber optic cables and submarine cable stations
Increase the number of information technology officers in embassy commerce offices [在使馆商务处增加信息技术官职位]	Incorporate the ICT industry "going out" strategy into the PRC's diplomatic strategy; boost number of information technology officers in embassy commercial offices; collect information on host country's ICT industry

Source: CAICT

36 Chen Hui and Dong Jianjun, "Accelerating the Promotion of the One Belt, One Road Information and Communication Industry Going Out [加快推进"一带一路"信息通信业走出去]," CAICT website, (November 14, 2018), accessed on January 9, 2018 at http://www.caict.ac.cn/kxyj/caictgd/201811/t20181114_188712.htm (Original text: 建议从国家战略高度出发, 针对电信运营业"走出去"肩负的国家工作任务, 确立新的考核指标, 如境外网络布局和市场占有率等, 不再仅以盈利为考核。特别是对于我国和西方国家争夺网络空间主导权的战略要地, 即使较难获得经济效益, 也应鼓励企业进入, 占据市场, 支撑我国的对外战略。)

PRC state-owned telecommunication firms China Unicom, China Telecom, and China Mobile, as well as CITIC Telecom, are particularly active in DSR ICT projects, as are Internet giants Baidu, Alibaba, Huawei, and ZTE.

PRC Companies Integrating DSR into Global Strategies, Driving ICT Infrastructure Construction

PRC COMPANIES ARE IMPLEMENTING DSR priorities into their overseas strategies, constructing telecommunications, fiber optic networks, satellite, and other digital and telecommunications infrastructure in key OBOR regions and elsewhere around the world (see appendix A for map of select DSR projects worldwide). Many PRC-led M&A transactions also appear to be driven by efforts to secure access to ICT infrastructure and enhance network layouts in foreign countries. PRC state-owned telecommunication firms China Unicom, China Telecom, and China Mobile, as well as CITIC Telecom, are particularly active in DSR ICT projects, as are Internet giants Baidu, Alibaba, Huawei, and ZTE.

▶ Huawei press releases announcing partnerships with Deutsche Telekom and Finland's Cinia tout these projects' role in advancing DSR links.³⁷ Huawei projects include constructing a fiber optic cable connecting Pakistan to Kenya via Djibouti³⁸, a smart city project in Yanbu Saudi Arabia³⁹ to deliver

37 "Huawei and Deutsche Telekom work on 'Digital Silk Road,'" Deutsche Telekom website, (September 14, 2015), accessed on January 14, 2019 at <https://www.telekom.com/en/media/media-information/archive/huawei-and-deutsche-telekom-work-on--digital-silk-road--362052>; and "Cinia selects Huawei to Build Direct Digital Silk Road between Asia and Europe," Huawei website, (March 16, 2016), accessed on January 14, 2019 at <https://carrier.huawei.com/en/relevant-information/all-cloud-network/build-direct-digital-silk-road>

38 "PEACE Cable Project Enters into Cable and Material Manufacturing Stage," Huawei Technologies, (October 22, 2018), accessed on January 26, 2019 at <https://www.huawei.com/en/press-events/news/2018/10/huawei-peace-cable-project>

39 "Yanbu: A Smart Industrial Oil Kingdom City," Huawei Technologies, (undated), accessed on January 26, 2019 at https://e.huawei.com/us/publications/global/ict_insights/201708310903/manufacturing/201712061133

surveillance cameras to the Mauritian government,⁴⁰ and leading research on 5G in Europe.⁴¹

▶ According to PRC state media, OBOR countries are a priority for Alibaba's strategic development.⁴² A member of the Digital (Online) Silk Road International Industrial Alliance, which is discussed in more detail below, Alibaba promotes the construction of DSR through its "Global E-Commerce Platform" (eWTP), which has been launched in Kuala Lumpur and Hangzhou, as well as expansion of its logistics capabilities across OBOR countries.⁴³

▶ Alibaba has recently stepped up efforts in Russia, announcing the formation of a new social commerce joint venture with The Russian Direct Investment Fund—Russia's sovereign wealth fund—MegaFon, and Mail.Ru to accelerate Russia's digital economy.⁴⁴

▶ DSR-related activities by ZTE include a smart city project in Bangladesh,⁴⁵ a national optical backbone project in South Africa

40 "Safe Mauritius, the Inspiration for Heaven," Huawei Technologies, (undated), accessed on January 26, 2019 at <https://e.huawei.com/us/case-studies/global/2018/201807241004>

41 "5G Europe," Huawei Technologies, (undated), accessed on January 26, 2019 at <https://huawei.eu/focus/5g-europe>

42 Wang Zhen [王振], Zhao Fuchun [赵付春], and Wang Yingbo [王莹波], "Experts: Developing the Digital Economy and Promoting the Development and Transformation of the Countries Related to the 'Belt and Road' [专家：发展数字经济推动“一带一路”相关国家发展转型]," People's Daily [人民日报] rehosted on the Belt and Road Portal [中国一带一路网], (May 22, 2017), accessed on December 17, 2018 at <https://www.yidaiyilu.gov.cn/gnsl/gnztjgd/14183.htm>

43 "Alibaba promotes the construction of the 'Digital Silk Road' [阿里巴巴推广建设“数字丝绸之路”]," Xinhua News [新华社], (April 18, 2017), accessed on December 17, 2018 at http://www.xinhuanet.com/world/2017-04/18/c_1120832453.htm

44 "RDIF, Alibaba Group, MegaFon, and Mail.Ru Group Launch New Social Commerce Joint Venture in Russia and the CIS," MegaFon website, (September 11, 2018), accessed on January 15, 2019 at https://corp.megafon.com/investors/news/capital_market_releases/20180911-0936.html

45 Zhang Ying, "Transforming Dhaka into a Smart City," ZTE website, (undated), accessed on January 15, 2019 at https://www.zte.com.cn/global/about/magazine/zte-technologies/2017/4/en_737/464727

where ZTE was the sole supplier,⁴⁶ as well as construction of fiber optic cables in Pakistan and Afghanistan, in cooperation with Huawei.⁴⁷

▶ Additionally, in December 2016, ZTE acquired a 48% stake in Turkish ICT systems integrator and software solutions firm Netas Telecommunications, a major architect in executing Turkey's digital priorities, strengthening "ZTE's ability to capture opportunities generated by the Chinese government's "One Belt, One Road" initiative."⁴⁸

46 "FibreCo Builds a National Optical Backbone in South Africa," ZTE website, (undated), accessed on January 15, 2019 at <https://www.zte.com.cn/global/cases/201305/397535>

47 "Afghanistan and China Sign Optic Fiber Agreement," Regional Economic Cooperation Conference of Afghanistan website, (April 26, 2017), accessed on January 15, 2019 at <http://recca.af/?p=2387>; and "ZTE Broadens Digital Silk Road [中兴通讯拓宽"数字丝路"]," People's Daily, (May 18, 2017), accessed on January 15, 2019 at http://paper.people.com.cn/. . . /nw.D110000renmrb_20170518_3-13.htm

48 "ZTE to acquire 48% stake in Netas to support growth in Turkey and Eurasia," ZTE website, (December 6, 2016), accessed on January 15, 2019 at <https://www.zte.com.cn/global/about/press-center/news/20180600001/201807140803/201612ma/1206>

Beijing Prioritizes Expansion of Fiber Optic Cable, Satellite Systems

PRC GOVERNMENT DOCUMENTS AND A body of reporting in PRC media strongly indicate that cross-border fiber optic communications cable network construction by PRC telecom equipment firms—seen as a key component of an integrated IT and communications technology system to provide Beijing with greater global reach—has become an urgent DSR priority during the past three years. The development highlights PRC top leaders’ recognition—which has strengthened and focused as the IT revolution unfolds—that digital collection, movement, and control of information are the wealth, currency, and medium of future economic and geostrategic power.

- ▶ The first priority of DSR construction is to solve the problem of infrastructure connectivity, according to a 5 January 2017 report by the CAICT.⁴⁹
- ▶ The report points out that the 2015 OBOR White Paper calls for “jointly promoting the construction of communication trunk networks such as cross-border optical cables to improve international communication, interoperability level, and a smooth online Silk Road.”⁵⁰

49 “Create ‘Online Silk Road’ and Promote the Development of ‘One Belt, One Road’—Part Four of the Interpretation of ‘The National Informatization Plan of the 13th Five-Year Plan’ [打造“网上丝绸之路”·推进“一带一路”发展——《“十三五”国家信息化规划》解读之四].” Website of the China Academy of Information and Communications Technology (CAICT) of the Ministry of Industry and Information Technology (MIIT), (January 5, 2017), accessed on January 7, 2019 at http://www.caict.ac.cn/kxyj/caictgd/201804/t20180428_159428.htm

50 “Vision and Action on Jointly Building the Silk Road Economic Belt and 21st-Century Maritime Silk Road [推动共建丝绸之路经济带和21世纪海上丝绸之路的愿景与行动].” NDRC [国家发展和改革委员会], MOFA [外交部], MOFCOM [商务部], issued by the State Council [经国务院授权发布], (March 2015), accessed on January 14, 2018 at <http://www.mofcom.gov.cn/article/i/dxfw/jlyd/201601/20160101243342.shtml>

▶ The same CAICT report calls for an acceleration of “the overall layout of overseas information infrastructure” to “. . . vigorously promote the interconnection and intercommunication with the national network infrastructures along OBOR and to provide a basic guarantee for extensive information and economic cooperation.”⁵¹

▶ The first priority actions are: 1) open the “Belt and Road” information channel, connecting the land information channels of Pakistan, Myanmar, and other countries to the Indian Ocean and Russia to Central and Eastern Europe and 2) promote the construction of submarine cables for the Americas, Europe, Southeast Asia and Africa, and improve the maritime information channel; 3) encourage enterprises to deploy application facilities such as data centers and cloud computing platforms in the node cities along the “Belt and Road.”⁵²

▶ The second step is to accelerate the internationalization of the Beidou satellite navigation system and its application industry in conjunction with the OBOR countries, improve several Beidou overseas application demonstration projects, and enhance the international service capabilities of Beidou Navigation.”⁵³

51 “Vision and Action on Jointly Building the Silk Road Economic Belt and 21st-Century Maritime Silk Road [推动共建丝绸之路经济带和21世纪海上丝绸之路的愿景与行动].” NDRC [国家发展和改革委员会], MOFA [外交部], MOFCOM [商务部], issued by the State Council [经国务院授权发布], (March 2015), accessed on January 14, 2018 at <http://www.mofcom.gov.cn/article/i/dxfw/jlyd/201601/20160101243342.shtml>

52 “Vision and Action on Jointly Building the Silk Road Economic Belt and 21st-Century Maritime Silk Road [推动共建丝绸之路经济带和21世纪海上丝绸之路的愿景与行动].” NDRC [国家发展和改革委员会], MOFA [外交部], MOFCOM [商务部], issued by the State Council [经国务院授权发布], (March 2015), accessed on January 14, 2018 at <http://www.mofcom.gov.cn/article/i/dxfw/jlyd/201601/20160101243342.shtml>

53 “Vision and Action on Jointly Building the Silk Road Economic Belt and 21st-Century Maritime Silk Road [推动共建丝绸之路经济带和21世纪海上丝绸之路的愿景与行动].” NDRC [国家发展和改革委员会], MOFA [外交部], MOFCOM [商务部], issued by the State Council [经国务院授权发布], (March 2015), accessed on January 14, 2018 at <http://www.mofcom.gov.cn/article/i/dxfw/jlyd/201601/20160101243342.shtml>

PRC's Beidou Satellite System Going Global

The Beidou Satellite Navigation System [北斗卫星导航系统] serves as a PRC alternative to the United States' GPS system by supplying global positioning, satellite imagery, and digital infrastructure connectivity capabilities first to partner nations to enhance PRC global connectivity, with the ultimate goal of achieving worldwide deployment. According to an interview with Beidou government spokesperson Ran Chengqi [冉承其], Beijing in 2017 pledged to provide priority Beidou service to countries "along the Belt and Road" region.⁵⁴

- ▶ The Beidou system has already been deployed to Pakistan⁵⁵ and Thailand⁵⁶, and the first Beidou overseas center was inaugurated in Tunisia in April 2018.⁵⁷ The PRC is also engaged in satellite collaborations to improve Beidou's interoperability with Russian, European and U.S. satellite systems and space technology.⁵⁸
- ▶ The Beidou Satellite Navigation System in December 2018 achieved basic global coverage with the launch of Beidou 3, according to PRC official media and government press releases.⁵⁹ The Beidou 3 system is expected to reach full global coverage in 2020.⁶⁰

54 "Beidou priority service offered to countries along the 'Belt and Road' [北斗优先服务“一带一路”沿线国家]," Beidou official website, (December 6, 2017), accessed on January 25, 2019 at http://www.beidou.gov.cn/yw/xwzx/201712/t20171207_6372.html

55 "China's 'Beidou' has a good response in Pakistan [中国“北斗”在巴基斯坦试运反响良好]," Military-Civilian Joint Promotion Department [军民结合推进司], (November 2, 2012), accessed on January 25, 2019 at <http://www.miit.gov.cn/n1146285/n1146352/n3054355/n3057613/n3057624/c3613625/content.html>; and Sabena Siddiqui, "Pakistan benefits from China's Sat-Nav system," China News, (May 23, 2017), accessed on January 25, 2019 at http://www.china.org.cn/business/2017-05/23/content_40873203.htm; and "Pakistan's reliance on US GPS ends as China's Beidou Navigation Satellite System has started to cover entire Pakistan," Times of Islamabad, (February 13, 2018), accessed on January 25, 2019 at <https://timesofislamabad.com/13-Feb-2018/pakistan-s-reliance-on-us-gps-ends-as-china-s-beidou-navigation-satellite-system-has-started-to-cover-entire-pakistan>; and "Pakistan becomes first nation to benefit from China's BeiDou system," Pakistan Today, (May 18, 2017), accessed on January 25, 2019 at <https://www.pakistantoday.com.pk/2017/05/18/pakistan-becomes-first-foreign-nation-to-benefit-from-chinas-beidou-system/>

56 Li Ning [李宁], "Beidou satellite application technology settled in Thailand [北斗卫星应用技术落户泰国]," People's Daily [人民日报], (March 31, 2013), accessed on January 25, 2019 at <http://scitech.people.com.cn/n/2013/0331/c1007-20975471.html>; and Li Ying [李颖], "China's Beidou is expected to navigate for Thai fishing boats [中国北斗有望为泰国渔船导航]," Xinhua News Agency [新华网], (March 3, 2015), accessed on January 25, 2019 at http://www.xinhuanet.com/world/2015-03/03/c_1114508289.htm

57 "UniStrong fully supports the construction of the first overseas Beidou center to help Beidou spread around the world [合众思壮全力支持首个海外北斗中心建设助力北斗走向世界]," X Beijing UniStrong Co. [北京合众时装科技股份有限公司], (March 3, 2015), accessed on January 25, 2019 at http://www.unistrong.com/news/NewsShow_2700.aspx

58 "Beidou Satellite Navigation System Development Report (Version 3.0) [北斗卫星导航系统发展报告 (3.0版)]," China Satellite Navigation System Management Office [中国卫星导航管理办公室], (December 2018), accessed on January 25, 2019 at <http://www.beidou.gov.cn/xt/gfzx/201812/P020181227529525428336.pdf>

59 "The launch conference of the Beidou No. 3 basic system and provision of global services was held" [北斗三号基本系统建成及提供全球服务情况发布会召开]," Beidou official website, (December 27, 2018), accessed on January 24, 2019 at http://beidou.gov.cn/yw/xwzx/201812/t20181227_16864.html

60 "Beidou Satellite Navigation System Development Report (Version 3.0) [北斗卫星导航系统发展报告 (3.0版)]," China Satellite Navigation System Management Office [中国卫星导航管理办公室], (December 2018), accessed on January 25, 2019 at <http://www.beidou.gov.cn/xt/gfzx/201812/P020181227529525428336.pdf>

Data from MIIT's Electronic Information Division indicate that as of late 2017 the PRC had 34 cross-border land cables and several international submarine cables in 12 countries along the "Belt and Road", which are directly connected to Asia, Africa, Europe, and other parts of the world.⁶¹ The PRC's three key central state-owned telecom operators (China Telecom, China Mobile, and China Unicom) play an important role in the development of OBOR by focusing on building multiple transnational land and submarine cable systems.⁶²

▶ China Telecom in 2017 planned to invest at least \$1 billion over the coming 3-5 years to construct a major regional information highway interconnecting OBOR countries. This effort will focus on implementing three regional strategies and four key pilot projects.⁶³

▶ Greater Eurasia Strategy [大欧亚战略]: Develop national information and smart city projects by opening key strategic

channels, become the ICT leader in Eurasia, and complete construction of the Eurasian Information Silk Road.⁶⁴

▶ New Mekong River Strategy [新湄公河战略]: Construct a pan-Asian information network, develop smart and informatization project opportunities, implement cross-border information operations, compete to be co-builder of a greater Mekong River "information society."⁶⁵

▶ New Africa Strategy [新非洲战略]: Focus on East and Northeast Africa. Develop, build, and operate major national informatization and smart city projects. Develop investment and M&A opportunities, boost Africa region to a new level of development. Goal is to become a major player

61 "China and Arab countries use the 'Online Silk Road' to expand cooperation 'E space' [中国与阿拉伯国家借"网上丝绸之路"拓展合作"E空间], Xinhua News, (September 6, 2017), accessed on January 9, 2019 at http://www.xinhuanet.com/2017-09/06/c_1121617893.htm

62 "Belt and Road' International Cooperation Summit: Building a 21st Century Digital Silk Road [“一带一路”国际合作高峰论坛：共建21世纪数字丝绸之路], Official website of "Communication Industry News" [通信产业报社], a publication managed by the Ministry of Industry and Information Technology (MIIT), (May 14, 2017), accessed on January 9, 2019 at <http://www.ccidcom.com/yaowen/20170514/JVD3TBNiX8LHuWL6Y14vrtfkrbvdg.html>.

Note that collaborating/partnering entities listed on the homepage of "Communication Industry News", include China Telecom, China Mobile, China Unicom, China Tower (中国铁塔), Huawei, ZTE, Intel, FiberHome, YOFC, Trigiant, NNO, Qualcomm, HBC, as accessed on January 9, 2019 at <http://www.ccidcom.com/>

63 "China Telecom's "One Belt, One Road" Plan: Investing \$1 billion to Build Information Silk Road [中国电信"一带一路"规划：投入10亿美元打造"信息丝路"], People's Daily website, (April 26, 2017), accessed on January 9, 2019 at <http://tc.people.com.cn/n1/2017/0426/c183008-29237851.html>; and "China Telecom Practices One Belt, One Road; Global Layout and Construction of the Information Silk Road [中国电信践行"一带一路"倡议：全球布局建设"信息丝路"], China Telecom website, (May 11, 2017), accessed on January 9, 2019 at http://www.chinatelecom.com.cn/news/06/ydyl/xw/201706/t20170621_33927.html

64 "China Telecom's "One Belt, One Road" Plan: Investing \$1 billion to Build Information Silk Road [中国电信"一带一路"规划：投入10亿美元打造"信息丝路"], People's Daily website, (April 26, 2017), accessed on January 9, 2019 at <http://tc.people.com.cn/n1/2017/0426/c183008-29237851.html>; and "China Telecom Practices One Belt, One Road; Global Layout and Construction of the Information Silk Road [中国电信践行"一带一路"倡议：全球布局建设"信息丝路"], China Telecom website, (May 11, 2017), accessed on January 9, 2019 at http://www.chinatelecom.com.cn/news/06/ydyl/xw/201706/t20170621_33927.html (Original text: 其目标是通过打通关键战略通道，开发国家信息化、智慧城市项目，成为欧亚信息沟通的主导者，完成欧亚信息丝绸之路建设). Plans to construct a Eurasian Information Silk Road appear to have been outlined by China Telecom around 2006, when it set up China Telecom (Europe) Co. in London. The Eurasian Information Silk Road includes the Euro-Asia Network Solution consisting of six fiber optic terrestrial cables and interconnected POPs from Asia to Europe. The land line was constructed in cooperation with Russian telecom operators. See "Euro-Asia Network Solution," China Telecom Europe website, (undated), accessed on January 10, 2019 at http://cteuropa.net/wp-content/uploads/ChinaTelecom_Euro-Asia-network-solution.pdf; and Sun Yaping, "Building the Eurasian Information Silk Road" [构建欧亚信息丝绸之路], China Radio International website, (October 17, 2011), accessed on January 10, 2019 at <http://news.cri.cn/gb/27824/2011/10/17/110s3404654.htm>

65 "China Telecom's "One Belt, One Road" Plan: Investing \$1 billion to Build Information Silk Road [中国电信"一带一路"规划：投入10亿美元打造"信息丝路"], People's Daily website, (April 26, 2017), accessed on January 9, 2019 at <http://tc.people.com.cn/n1/2017/0426/c183008-29237851.html>; and "China Telecom Practices One Belt, One Road; Global Layout and Construction of the Information Silk Road [中国电信践行"一带一路"倡议：全球布局建设"信息丝路"], China Telecom website, (May 11, 2017), accessed on January 9, 2019 at http://www.chinatelecom.com.cn/news/06/ydyl/xw/201706/t20170621_33927.html (Original text: 其目标是通过构建泛亚信息网络，开发智慧及信息化项目机会，实施跨境信息运营，争当湄公河区域信息社会的共建者)

The PRC's three key central state-owned telecom operators (China Telecom, China Mobile and China Unicom) play an important role in the development of OBOR by focusing on building multiple transnational land and submarine cable systems.

in the Africa informatization process, construct strategic routes between Africa, Europe, and America, and build East and Northeast Africa network backbone.⁶⁶

China Unicom [中国联合网络通信集团有限公司] reported 4 April 2018 that it implements “national strategic measures such as network superpower and the “Belt and Road” initiative.”⁶⁷ In August 2016, China Unicom unveiled its Global Center in Hong Kong, the first and largest overseas integrated telecommunications facility to function “as an important information infrastructure hub of “One Belt One Road”.”⁶⁸

- ▶ The Global Center, through the “Suigang Land Cable Transmission System”, connects to China’s backbone network and through the Asia-America Gateway Cable System. It also connects to the Asia Pacific Gateway, Asia Africa Europe-1, and other submarine cables systems linking to North America, Europe, Africa, the Middle East, and Southeast Asia, according to the August 2016 report.⁶⁹
- ▶ The same report said that China Unicom is constructing both land and submarine cable systems to expand its network layout

across OBOR countries. It is building its own China-Myanmar international land cable system around the economic corridors of China-Southeast Asia-India-Myanmar and expanding cable capacity along the China-Mongolia-Russia-Europe cable circuit. Along the coast, China Unicom initiated the construction of Asia-Africa Europe No. 1 submarine cable with 19 countries and cooperated with developers of the Southeast Asia-Middle East-Western Europe No. 5 submarine cable.⁷⁰ (See Appendix B: China Unicom Global Network Capabilities Map)

China Mobile⁷¹ has built a global communications infrastructure network system, actively promoted the construction of key projects such as cross-border optical cables, and plans to build new submarine cables and new international communications business gateways in Asia, Europe, and the United States.⁷²

- ▶ China Mobile in a May 2017 report described its role in the construction of telecommunications infrastructure and cross-border land and submarine fiber optic cables, as well as its acquisition of telecommunications companies in Pakistan and Thailand, to highlight its efforts towards creating an “information and economic corridor.”⁷³

66 “China Telecom’s “One Belt, One Road” Plan: Investing \$1 billion to Build Information Silk Road [中国电信“一带一路”规划：投入10亿美元打造“信息丝路”].” People’s Daily website, (April 26, 2017), accessed on January 9, 2019 at <http://tc.people.com.cn/n1/2017/0426/c183008-29237851.html>; and “China Telecom Practices One Belt, One Road: Global Layout and Construction of the Information Silk Road [中国电信践行“一带一路”倡议：全球布局建设“信息丝路”].” China Telecom website, (May 11, 2017), accessed on January 9, 2019 at http://www.chinatelecom.com.cn/news/06/ydyl/xw/201706/t20170621_33927.html (Original text: 以东非、东北非为重点，开发国家信息化、智慧城市、建营一体的重大项目，开发投资并购机会，促进非洲区域发展再上新台阶，目标是成为非洲信息化进程的主要参与者，建设非洲与欧美战略通道，建设东非及东北非骨干网)

67 “Annual Report 2017” China Unicom, Hong Kong Stock Exchange, (April 4, 2018), accessed on January 14, 2019 at <http://www3.hkexnews.hk/listedco/listconews/SEHK/2018/0404/LTN201804041065.pdf>

68 “China Unicom (Hong Kong) Global Center Grand Opening,” China Unicom website, (August 16, 2016), accessed on January 14, 2019 at <http://www.chinaunicom.com.sg/news-detail/7/>

69 “China Unicom (Hong Kong) Global Center Grand Opening,” China Unicom website, (August 16, 2016), accessed on January 14, 2019 at <http://www.chinaunicom.com.sg/news-detail/7/>

70 “‘Belt and Road’ International Cooperation Summit: Building a 21st Century Digital Silk Road [“一带一路”国际合作高峰论坛：共建21世纪数字丝绸之路].” Official website of “Communication Industry News” [通信产业报社], a publication managed by the Ministry of Industry and Information Technology (MIIT), (May 14, 2017), accessed on January 9, 2019 at <http://www.ccidcom.com/yaowen/20170514/JVD3TBNIX8LHuWL6Y14vrtfkrbvdg.html>.

71 China Mobile is listed number 24 on the directory of central state-owned enterprises administered by the State Council’s State-owned Assets Supervision and Administration Commission (SASAC [国务院国有资产监督管理委员会]) as observed 17 December 2018 at root URL: <http://www.sasac.gov.cn>

72 “Briefing on China Mobile’s Participation in Jointly Building the “Belt and Road,” China Mobile Communications Corporation, (May 8, 2017), accessed on December 17, 2018 at http://www.china.com.cn/zhibo/zhuanti/ch-xinwen/2017-05/08/content_40767089.htm

73 “Briefing on China Mobile’s Participation in Jointly Building the “Belt and Road,” China Mobile Communications Corporation, (May 8, 2017), accessed on December 17, 2018 at http://www.china.com.cn/zhibo/zhuanti/ch-xinwen/2017-05/08/content_40767089.htm

- ▶ In April 2017, China Mobile announced it was lowering roaming charges for OBOR countries, which would “facilitate Chinese enterprises’ investment and construction along the Belt and Road.”⁷⁴

Other PRC telecommunications companies are also involved in improving ICT interconnectivity among OBOR countries and beyond. For example, CITIC Telecom, a subsidiary of state-owned investment firm CITIC Group [中信集团],⁷⁵ in 2017 acquired Netherlands-based Linx Telecommunications becoming “one of the first Asian ICT service provider to own PoPs with extensive coverage in countries along with “One Belt One Road” route” providing “a first-mover advantage in “Digital Silk Road”” and foundation for seizing opportunities in Russia, Eastern Europe, and Central Asia.⁷⁶

- ▶ Beginning as early as March 2016, PRC based Kuang-Chi Group-connected HyalRoute Communications Group [HyalRoute; 海容通信集团]⁷⁷, a leading provider of

ICT infrastructure in Asia Pacific, initiated agreements leading to it constructing and operating nationwide fiber optic networks in both Myanmar and Cambodia.⁷⁸

- ▶ According to the company and CAICT, HyalRoute’s work “serves” China’s “One Belt, One Road” initiative and is an important part of building a 21st century digital silk road as the company pursues the construction of an international fiber-optic network spanning more than 1 million km linking 50 countries.⁷⁹

Highlighting Beijing’s geostrategic power objectives, PRC undersea technology equipment and defense contractor Zhongtian Technology Submarine Cable Co. (“ZTT”; 中天科技海缆有限公司)⁸⁰ touts its contribution to Military-Civil Fusion (MCF) objectives, according to a 19 May 2017 report posted on the official

74 Meng Jie, “China Mobile to cut roaming charges along Belt and Road,” Xinhua News, (April 26, 2017), accessed on January 14, 2019 at http://www.xinhuanet.com/english/2017-04/26/c_136238169.htm

75 CITIC Group is controlled by the Ministry of Finance of the People’s Republic of China.

76 “Annual Report 2017,” CITIC Telecommunications International Holdings Limits, Hong Kong Stock Exchange, (March 28, 2018), accessed on January 13, 2019 at <http://www3.hkexnews.hk/listedco/listconews/SEHK/2018/0328/LTN20180328660.pdf>. Following the acquisition, Linx Telecommunications was consolidated into CPC Europe Group whose virtual private network services, TrueCONNECT MPLS VPN covers more than 130 countries and regions.

77 HyalRoute is a member of Shenzhen-based Kuang-Chi Group’s “Global Community of Innovation.” A military-civil fusion enterprise, Kuang-Chi supports PLA RD&A programs, including programs on stealth materials and near space ISR.

78 “Cambodia grants rights to Chinese firm to build submarine cables, landing station,” People’s Daily, (March 2, 2016), accessed on January 25, 2019 at <http://en.people.cn/n3/2016/0302/c90883-9024154.html>; and “Government signs \$70m deal for submarine internet cable,” The Cambodian Daily, (March 3, 2016), accessed on January 25, 2019 at <https://www.cambodiadaily.com/news/government-signs-70m-deal-for-submarine-internet-cable-109325/>; and “Cambodia signs US\$70 million deal of submarine cable construction,” Agence Kampuchea Presse (AKP), (March 4, 2016), accessed on January 25, 2019 at <http://www.akp.gov.kh/wp-content/uploads/wp-post-to-pdf-cache/1/cambodia-signs-us70-million-deal-of-submarine-cable-construction.pdf>; and “World Bank’s MIGA backs \$100m, 4,500km fibre optic rollout,” Frontier Myanmar, (January 31, 2017), accessed on January 25, 2019 at <https://frontiermyanmar.net/en/world-banks-miga-backs-100m-4500km-fibre-optic-rollout>; and “HyalRoute Fiber Optic Cable Network,” Private Participation in Infrastructure Database,” The World Bank, (2017), accessed on January 25, 2019 at <https://ppi.worldbank.org/snapshots/project/HyalRoute-Fiber-Optic-Cable-Network-9164>

79 Xin Xing and Yao Jinzhou, “In the 21st Century Digital Silk Road, Private Companies Have a lot to Offer [21世纪数字丝绸之路·民营企业大有可为],” CAICT website, (November 14, 2018), accessed January 13, 2019 at http://www.caict.ac.cn/kxyj/caictgd/201811/t20181114_188713.htm; and “Kuang-Chi Science Announces Singapore-Based Innovation HQ,” Kuang-Chi press release via PRNewswire, (May 31, 2016), accessed on January 25, 2019 at <https://www.prnewswire.com/news-releases/kuangchi-science-announces-singapore-based-innovation-hq-300276731.html>

80 ZTT is a National Torch Program key high-tech enterprise [国家火炬计划重点高新技术企业] located in the national level Nantong Economic and Technology Development Zone. It also leads the 863 Programs on deep sea ROVs [深海ROV] and armored cables [铠装缆]. See company website at: <http://zthl.chinaztt.cn/>

Other PRC telecommunications companies are also involved in improving ICT interconnectivity among OBOR countries and beyond.

website of MIIT-managed publication “Communication Industry News.”⁸¹

- ▶ ZTT has participated in the construction of all underwater observation networks in China and specializes in underwater network design, equipment manufacturing, construction and maintenance.⁸²
- ▶ The company’s deep-sea cable expertise has been successfully applied to China’s first domestically-made relayed submarine cable. The communication system reportedly has been running stably for more than a year, providing a strong guarantee for instant defense communications.⁸³

General Secretary Xi Jinping during a 3 July 2017 visit to Moscow said that China and Russia are actively promoting construction of “One Belt, One Road,” in cooperation with the Eurasian Economic Union, and that both sides will jointly develop and utilize Arctic waterways to create an “Ice Silk Road [冰上丝绸之路].”⁸⁴ DSR is driving PRC expansion into the Arctic according to a 7 February 2018 report posted on Xinhua

81 “Zhongtian Technology advances into the 10,000-meter deep-sea area [中天科技向万米级海域进军],” Official website of “Communication Industry News” [通信产业报社], a publication managed by the Ministry of Industry and Information Technology (MIIT), (May 19, 2017), accessed on January 9, 2019 at <http://www.ccidcom.com/company/20170519/yW3WLEFRayB7zkn7y14w6vmp6cfn8.html>

82 “Zhongtian Technology advances into the 10,000-meter deep-sea area [中天科技向万米级海域进军],” Official website of “Communication Industry News” [通信产业报社], a publication managed by the Ministry of Industry and Information Technology (MIIT), (May 19, 2017), accessed on January 9, 2019 at <http://www.ccidcom.com/company/20170519/yW3WLEFRayB7zkn7y14w6vmp6cfn8.html>

83 “Zhongtian Technology advances into the 10,000-meter deep-sea area [中天科技向万米级海域进军],” Official website of “Communication Industry News” [通信产业报社], a publication managed by the Ministry of Industry and Information Technology (MIIT), (May 19, 2017), accessed on January 9, 2019 at <http://www.ccidcom.com/company/20170519/yW3WLEFRayB7zkn7y14w6vmp6cfn8.html>

84 “July 4, 2017: Xi Jinping: Creating the “Ice Silk Road [2017年7月4日：习近平：打造“冰上丝绸之路”],” Belt and Road Portal, (July 4, 2017), accessed on January 14, 2019 at <https://www.yidaiyilu.gov.cn/slxwzy/201751.htm>. (Original text: 习近平表示，中俄两国正在积极推进“一带一路”建设同欧亚经济联盟对接合作。在对接合作框架内，双方正在积极商谈中国同欧亚经济联盟经贸合作协议和对接合作项目清单。希望双方共同开发和利用海上通道特别是北极航道，打造“冰上丝绸之路”)

Silkroad, an OBOR-focused website managed by the PRC’s official wire service Xinhua, and attributed to the “Australian Roy International Policy Institute.”⁸⁵

Forming DSR Industry Alliances, Boosting PRC Government-Industry Coordination

DURING 2017-2018, BEIJING ENCOURAGED the formation of state-industry innovation alliances (SIAs, aka industrial innovation alliances; 产业创新联盟) within key target sectors to bolster its Innovation Driven Development Strategy, providing a platform for government departments, scientific research institutes, academia, military industrial groups, SOEs, and private enterprises to interface in the PRC. SIAs also facilitate overseas collaboration towards the rapid development of targeted technology sectors and state security and military-civilian fusion applications, jointly improving industry-related norms and standards and encouraging and aligning sectoral investment with Beijing’s objectives. Similar alliances are being formed to advance DSR and include both PRC and foreign companies.

- ▶ In November 2017, Inspur Group, a PRC cloud computing and big data services provider, along with Cisco, IBM, Diebold Nixdorf, and Ericsson, formed the “One Belt, One Road”

85 “Arctic submarine cable to build data ‘Silk Road’ [北极海底光缆搭建数据“丝绸之路”],” Xinhua Silkroad [新华丝路, an OBOR-focused website managed by the PRC’s official wire service Xinhua) attributed to the Australian Roy International Policy Institute, (February 7, 2018), accessed on January 7, 2019 at <http://silkroad.news.cn/2018/0207/83602.shtml>



November 2017 launch ceremony for the “One Belt, One Road” Digital Economy Strategic Alliance
Source: China News

Digital Economy Strategic Alliance [“一带一路”数字化经济战略联盟] in the Inspur Jinan Science and Technology Park.⁸⁶

- ▶ The OBOR Digital Economy Strategic Alliance aims to form an integrated global technology and financial resources platform to deliver IT construction and capital to OBOR countries. The members plan to set up joint products and solutions and initially focus on providing “data center + cloud services,” as well as integrated technology solutions such as smart cities in Thailand, Bangladesh, Malaysia, Nigeria, Ethiopia, Tunisia, Tanzania, Zambia, and Kenya to create a series of model projects.⁸⁷
- ▶ China Exim Bank [中国进出口银行], China Development Bank [中国国家开发银行], and China Export Credit Insurance Corporation [中国出口信用保险公司] are providing financial support to the alliance.⁸⁸

Zhejiang province is also coordinating DSR priorities among provincial commercial entities, offering another example of how alliances enable PRC government actors, state financial institutions, and companies to coordinate their activities to advance national priorities around developing the digital economy. The Zhejiang Provincial Government, under direction from the NDRC National Internet Information Office, in September 2018 established the Digital (Online) Silk Road International Industrial Alliance (“DSR Industrial Alliance;” 数字（网上）丝绸之路国际产业联盟) to serve as a mecha-

nism for jointly “promoting the development of the digital economy, constructing the digital silk road, and promoting the digital economy between OBOR countries.”⁸⁹

- ▶ The DSR Industrial Alliance was formed during the first “International Conference on Digital Economy and Digital Silk Road” [数字经济暨数字丝绸之路国际会议], which was held 17-19 September in Hangzhou, Zhejiang Province.⁹⁰
- ▶ The conference focuses on DSR construction cooperation and provides a venue for international exchanges and dialogue focusing on e-commerce, smart cities, AI and big data, smart logistics, and smart manufacturing.⁹¹ Foreign government officials from Malaysia, Laos, Serbia, Bangladesh, Czech Republic, Cuba, Kazakhstan, and South Korea were in attendance.⁹²
- ▶ To date, more than 40 companies have joined the DSR Industrial Alliance including Alibaba, Tencent, WeChat, iFlytek, Sugon,

86 Li Ruan, “One Belt, One Road” Digital Economy Strategic Alliance Established [“一带一路”数字化经济战略联盟成立],” China Securities Journal website, (November 2, 2017), accessed on January 8, 2019 at http://cs.com.cn/xwzx/201711/t20171102_5550065.html; and “Lu Wei Attends One Belt, One Road Digital Economy Strategic Alliance Establishment Ceremony [吕伟出席一带一路数字化经济战略联盟成立仪式],” Ministry of Commerce website, (November 3, 2017), accessed on January 8, 2019 at <http://www.mofcom.gov.cn/article/difang/201711/20171102665974.shtml>

87 “Inspur Initiates the Establishment of the One Belt, One Road, Digital Economic Strategic Alliance [浪潮发起成立一带一路数字化经济战略联盟],” Inspur Group via PRNewswire Asia website, (November 3, 2017), accessed on January 8, 2019 at <https://www.prnasia.com/story/193031-1.shtml>

88 “Inspur Initiates the Establishment of the One Belt, One Road, Digital Economic Strategic Alliance [浪潮发起成立一带一路数字化经济战略联盟],” Inspur Group via PRNewswire Asia website, (November 3, 2017), accessed on January 8, 2019 at <https://www.prnasia.com/story/193031-1.shtml>

89 “Digital Economy and Digital Silk Road International Conference Propose Joining Hands to Construct Digital Silk Road [数字经济暨数字丝绸之路国际会议提出携手共建数字丝路],” General Office of the Zhejiang Provincial Government website, (September 19, 2018), accessed on January 2, 2019 at http://www.zj.gov.cn/art/2018/9/19/art_41146_2291184.html (Original text: 推动数字经济发展和数字丝绸之路建设为核心目标，推进“一带一路”倡议下沿线国家之间的数字经济务实合作)

90 “International Conference on Digital Economy and Digital Silk Road [数字经济暨数字丝绸之路国际会议]” Official conference website, (September 2018), accessed on January 8, 2019 at <http://ficedsr.medmeeting.org/Content/103894>

91 “International Conference on Digital Economy and Digital Silk Road [数字经济暨数字丝绸之路国际会议]” Official conference website, (September 2018), accessed on January 8, 2019 at <http://ficedsr.medmeeting.org/Content/103894>

92 “International Conference on Digital Economy and Digital Silk Road [数字经济暨数字丝绸之路国际会议]” Official conference website, (September 2018), accessed on January 8, 2019 at <http://ficedsr.medmeeting.org/Content/103894>

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40 companies

have joined the DSR Industrial Alliance including Alibaba, Tencent, WeChat, iFlytek, Sugon, Inspur, Baidu, Bilibili, China Electronic Technology Group, and Zhejiang Robot Industry Group.

Inspur, Baidu, Bilibili, China Electronic Technology Group, and Zhejiang Robot Industry Group.⁹³

Setting Standards, Altering the Competitive Landscape

PRC FINANCING AND CONSTRUCTION OF digital and other technical infrastructure under DSR spearheads Beijing's offensive to export technological standards in ICT, cybersecurity, AI, robotics, smart technologies and applications, as well as new energy technologies and explosives, as well as power grids and transportation systems.⁹⁴ A body of reporting indicates that—at least as early as 2015⁹⁵—Beijing has aimed to promote PRC technology standards and policies to become the de facto benchmark across OBOR countries in central Asia, SE Asia, the Middle East, Africa,

South and Central America, and even peripherally in Europe and North America—not only to enable disproportionate PRC influence over international ICT regulation but also to gain advantage by increasing barriers to multinational trade and governance that will be difficult to reverse.

- ▶ As a result, the PRC's encouragements—or requirements—that OBOR participant countries adopt PRC technical standards as part of DSR and other infrastructure projects is already altering global competition, negatively impacting non-PRC companies' ability to compete in foreign markets.⁹⁶
- ▶ Proliferation of PRC standards under the OBOR rubric paves the way for projection of PRC military power by extending the reach of Beijing's "military-civil fusion" MCF programs in strategic regions.

93 "International Conference on Digital Economy and Digital Silk Road [数字经济暨数字丝绸之路国际会议]" Official conference website, (September 2018), accessed on January 8, 2019 at <http://ficdedsr.medmeeting.org/Content/103894>; and "Zhejiang Robot Industry Group invited to be founding member of the Digital (Online) Silk Road International Industrial Alliance [浙江机器人产业集团应邀成为数字（网上）丝绸之路国际产业联盟创始成员单位]," Guangxi Tus-Holding Co. website, (September 21, 2018), accessed on January 2, 2019 at <http://www.gxtuscity.com/news/group/20180921652.html>

94 See "industrial communications" implementation guidance for the 2018-2020 standards action plan in support of OBOR issued by the Science and Technology Department of the Ministry of Industry and Information Technology (MIIT): "Implementation Opinions of the Ministry of Industry and Information Technology on the Harmonization of Industrial Communication Industry Standards in Service of Construction of the "Belt and Road" [工业和信息化部关于工业通信业标准化工作服务于“一带一路”建设的实施意见]," Key Work [重点工作] webpage of MIIT's official website, (November 12, 2018), accessed on January 10, 2019 at <http://www.miit.gov.cn/n1146290/n4388791/c6480447/content.html>

95 "OBOR Standards Harmonization Action Plan (2015-2017) [标准联通, 一带一路'行动计划 (2015—2017)]," Belt and Road Portal [中国一带一路网], (February 15, 2017), accessed on January 10, 2019 at <https://www.yidaiyilu.gov.cn/wcm.files/upload/CMSydy/gw/201702/201702150616033.pdf>

96 For additional analysis on the anticompetitive impact of Beijing's OBOR technical standards offensive, see: Andrew Polk, "China is Quietly Setting Global Standards," Bloomberg News, (May 6, 2018), accessed on December 31, 2018 at <https://www.bloomberg.com/opinion/articles/2018-05-06/china-is-quietly-setting-global-standards>

DSR S&T Educational Exchange Programs: Getting the Message Out

The PRC government and ICT industry have developed educational exchange programs designed to cultivate international expertise on matters relating to OBOR and PRC digital innovation. Beijing's exportation of educational resources promotes PRC soft power, portraying the PRC as "bringing good" to countries worldwide. These programs are indicative of Beijing's goals to promote PRC technological skills, standards, culture, and ideology through OBOR.

▶ The Chinese Academy of Sciences (CAS; 中国科学院) in 2016 established the Digital Silk Road International Science Plan [数字丝路国际科学计划], referred to on its official website as the "Digital Belt and Road Program" (or DBAR).⁹⁷ DBAR's Engagement Committee is tasked with liaising with Belt and Road partners to ensure the promotion of the organization's strategic goals, including the transfer of appropriate technology, according to the Committee's official description.⁹⁸ Since its founding, DBAR has established

cooperation and education centers throughout Africa⁹⁹, Europe¹⁰⁰, and Asia¹⁰¹. DBAR in November 2018 inaugurated its Center of Excellence on the campus of the University of South Carolina, which provides researchers from the PRC's CAS with access to data from National Oceanic and Atmospheric Administration (NOAA), according to the official press release from DBAR.¹⁰²

▶ Huawei's "Seeds for the Future," first launched in 2008, invites students from across the world to study science, technology, and engineering in the PRC.¹⁰³ The objective is for these students to return and apply PRC systems and methods in their home countries, thus further propagating and standardizing foreign deployment of PRC technologies and methodologies. As of 2016, Huawei has seen participation from 96 countries and international organizations, and over 3,000 students from around the world have completed the program.¹⁰⁴

99 DBAR has established Centers of Excellence in Zambia, Uganda, and Tunisia. "DBAR Opens the Center of Excellence in Lusaka," Digital Belt and Road (DBAR) official website, (June 28, 2018), accessed on January 25, 2019 at <http://www.dbeltroad.org/index.php?m=content&c=index&a=show&catid=85&id=636>; and "Digital Belt and Road (DBAR)-Heritage and Institute of National Heritage (INP) Sign Cooperation Agreement," Digital Belt and Road (DBAR) official website, (December 20, 2017), accessed on January 25, 2019 at <http://www.dbeltroad.org/index.php?m=content&c=index&a=show&catid=85&id=400>; and "DBAR Makes its Debut in Africa," Digital Belt and Road (DBAR) official website, (October 29, 2016), accessed on January 25, 2019 at <http://www.dbeltroad.org/index.php?m=content&c=index&a=show&catid=85&id=365>

100 "DBAR Opens the Center of Excellence in Helsinki," Digital Belt and Road (DBAR) official website, (October 31, 2018), accessed on January 25, 2019 at <http://www.dbeltroad.org/index.php?m=content&c=index&a=show&catid=85&id=640>

101 "Third PEEK Science Conference Held in Moscow, MOU Signed to Boost DBAR-PEEK Collaboration," Digital Belt and Road (DBAR) official website, (October 19, 2017), accessed on January 25, 2019 at <http://www.dbeltroad.org/index.php?m=content&c=index&a=show&catid=85&id=389>; and "Digital Belt and Road Program Opens its First Centre of Excellence in Bangkok," Digital Belt and Road (DBAR) official website, (February 28, 2018), accessed on January 25, 2019 at <http://www.dbeltroad.org/index.php?m=content&c=index&a=show&catid=85&id=629>

102 "DBAR Opens the Center of Excellence in Columbia," Digital Belt and Road (DBAR) official website, (November 19, 2018), accessed on January 25, 2019 at <http://www.dbeltroad.org/index.php?m=content&c=index&a=show&catid=85&id=642>

103 "Seeds for the Future," Huawei Technologies, (2017), accessed on January 25, 2019 at http://www-file.huawei.com/-/media/CORPORATE/PDF/Sustainability/seeds-for-the-future-v1.pdf?source=corp_comm

104 "Seeds for the Future," Huawei Europe, (undated), accessed on January 25, 2019 at <https://huawei.eu/campaign/seeds-future>

97 "DSR international plan science program document promulgated globally [数字丝路国际计划科学规划书全球发布]," Chinese Academy of Sciences (CAS) official website rehosted from the Institute of Remote Sensing and Digital Earth [遥感与数据地球研究所], (December 7, 2017), accessed on September 17, 2018 at http://www.cas.cn/yx/201712/t20171207_4626139.shtml

98 "Engagement Committee," Digital Belt and Road (DBAR) official website, (undated), accessed on January 25, 2019 at <http://www.dbeltroad.org/index.php?m=content&c=index&a=lists&catid=66>

The PRC Standardization Administration's [国家标准化管理委员会] "Harmonization of Standards for Jointly Constructing 'One Belt and One Road' Action Plan (2018-2020) [标准联通共建"一带一路"行动计划, 2018-2020年]" proclaims Beijing's interest in promoting the application and implementation of PRC national standards throughout OBOR regions.¹⁰⁵ The policy states that by 2020, the PRC should develop a new pattern for international standardization through government-driven, market-led coordination.¹⁰⁶ Before launching into specific future standardization objectives, an MIIT implementation guidance document published in late 2018—Implementation Opinions of the Ministry of Industry and Information Technology on the Harmonization of Industrial Communication Industry Standards in Service of Construction of the "Belt and Road" [工业和信息化部关于工业通信业标准化工作服务于"一带一路"建设的实施意见]"—provides an overview of progress to date:

"More than 80 international standards have been formulated jointly with countries [participating in] OBOR, and more than 400 foreign language development plans have been deployed in the system; the

standard mutual recognition field has been expanded to form a batch of mutual recognition standards; a group of advanced Chinese standards are in OBOR."¹⁰⁷

Documents which comprise high-level guidance for all institutions in the PRC indicate that top PRC leaders intend to gain a strategic edge for the PRC by changing the standards and rules of global industry and commerce to enable disproportionate PRC influence over international regulation and to increase barriers to multinational trade and governance by other nations. In such documents, statements attributed to General Secretary Xi Jinping and other top leaders advocate changing the rules of the international order to facilitate the rise of PRC economic and geostrategic power and influence. For example, in 2014 Xi stated:

*"At present, major breakthroughs in scientific and technological innovation and accelerated application are likely to reshape global economic structure and transform the industrial and economic competition arena. In the traditional international development arena, the rules have been formulated by others, we can join in, but must follow the rules of competition already set, without rights to take more initiative. The major opportunity to seize the new round of scientific and technological revolution and industrial transformation is to join in the construction of the new arena of competition, and even lead some of the construction, so that we become an important determiner of the new rules of competition, and an important leader in the new arena of competition. If we don't have a fresh trick, or a few fresh tricks, and no ability to participate in or lead construction of the new arena, then we lack opportunities."*¹⁰⁸

105 "Harmonization of Standards for Jointly Constructing 'One Belt and One Road' Action Plan (2018-2020) [标准联通共建"一带一路"行动计划 (2018-2020年)]," Belt and Road Portal [中国一带一路网], (January 11, 2018), accessed on December 18, 2018 at <https://www.yidaiyilu.gov.cn/zchj/qwfb/43480.htm>; and "Harmonization of Standards for Jointly Constructing 'One Belt and One Road' Action Plan (2018-2020) Officially Released [标准联通共建"一带一路"行动计划 (2018-2020年)]," National Development and Reform Commission [NDRC; 中华人民共和国国家发展和改革委员会], (December 26, 2017), accessed on December 18, 2018 at http://www.ndrc.gov.cn/gzdt/201712/t20171226_871645.html

106 "Harmonization of Standards for Jointly Constructing 'One Belt and One Road' Action Plan (2018-2020) [标准联通共建"一带一路"行动计划 (2018-2020年)]," Belt and Road Portal [中国一带一路网], (January 11, 2018), accessed on December 18, 2018 at <https://www.yidaiyilu.gov.cn/zchj/qwfb/43480.htm>; and "Harmonization of Standards for Jointly Constructing 'One Belt and One Road' Action Plan (2018-2020) Officially Released [标准联通共建"一带一路"行动计划 (2018-2020年)]," National Development and Reform Commission [NDRC; 中华人民共和国国家发展和改革委员会], (December 26, 2017), accessed on December 18, 2018 at http://www.ndrc.gov.cn/gzdt/201712/t20171226_871645.html

107 "Implementation Opinions of the Ministry of Industry and Information Technology on the Standardization of Industrial Communication Industry Serving the Construction of the 'Belt and Road' [工业和信息化部关于工业通信业标准化工作服务于"一带一路"建设的实施意见]," Ministry of Industry and Information Technology, (November 2018), accessed on January 26, 2019 at <http://www.miit.gov.cn/n146295/n1652858/n1652930/n3757016/c6480388/content.html>

108 "Study in depth and implement Xi Jinping's thought on socialism with Chinese characteristics in the new era, Part 5: Implement an innovation-driven development strategy [深入学习领悟习近平新时代中国特色社会主义思想, 五、实施创新驱动发展战略]" observed at root URL theory.people.com.cn

The “Harmonization of Standards for Jointly Constructing ‘One Belt and One Road’ Action Plan (2018-2020)” specifies key target countries for the PRC’s standardization goals. This includes consolidating and improving standardization cooperation with countries in Europe, ASEAN, BRICS (Brazil, Russia, India, China and South Africa), Northeast Asia, North America, Africa and Oceania.¹⁰⁹ It also aims to extend regional standardization cooperation channels to countries in Central and Eastern Europe, Central Asia, West Asia and the Middle East.¹¹⁰

▶ According to a report by the PRC’s official news agency Xinhua, Beijing secured agreements from at least six countries—Laos, Saudi Arabia, Serbia, Thailand, Turkey, and United Arab Emirates—to promote international standardization cooperation relating to broadband access and quality, e-commerce, technological skills training, and information and communications technology investment promotion under the “One Belt, One Road” Digital Economy International Cooperation Initiative, which was launched in December 2017.¹¹¹

109 “Harmonization of Standards for Jointly Constructing ‘One Belt and One Road’ Action Plan (2018-2020) [标准联通共建“一带一路”行动计划（2018-2020年）]” Belt and Road Portal [中国一带一路网], (January 11, 2018), accessed on December 18, 2018 at <https://www.yidaiyilu.gov.cn/zchj/qwfb/43480.htm>

110 “Harmonization of Standards for Jointly Constructing ‘One Belt and One Road’ Action Plan (2018-2020) [标准联通共建“一带一路”行动计划（2018-2020年）]” Belt and Road Portal [中国一带一路网], (January 11, 2018), accessed on December 18, 2018 at <https://www.yidaiyilu.gov.cn/zchj/qwfb/43480.htm>

111 “7 countries jointly agreed to initiate a new chapter in ‘Digital Silk Road’ cooperation [7国共同发起倡议开启“数字丝绸之路”合作新篇章]” Xinhua News [新华社], (December 3, 2017), accessed on December 17, 2018 at http://www.xinhuanet.com/world/2017-12/03/c_1122050732.htm

03

Case Study: Beijing Hands-on Guidance, Support of DSR—China-ASEAN Information Harbor Co., Ltd.

BEGINNING AS EARLY AS 2014, TOP PRC leaders designated and provided guidance to the then-nascent Guangxi provincial SOE “China-ASEAN Information Harbor Co., Ltd., ([中国—东盟信息港股份有限公司], hereafter CAIH)—to support the promotion of PRC-based telecom and internet infrastructure in South and Southeast Asia. CAIH provides insight into how PRC policies, government agencies and enterprises coordinate and interact with each other to implement DSR projects.

▶ CAIH is a subsidiary of “Guangxi Beibu Gulf Investment Group Co., Ltd.” ([广西北部湾投资集团有限公司], hereafter BGIGC), a large state-owned enterprise wholly funded by the People’s Government of Guangxi Zhuang Autonomous Region (Guangxi).¹¹² It is comprised of industrial, finance investment, and service trade components with 13 wholly-owned subsidiaries, a “mother-ship fund,” and three “sub-funds” with more

than RMB 500 million (\$74 million) in assets, and a value exceeding RMB 2 billion (\$296 million).¹¹³

- ▶ The NDRC and CAC are referenced together with CAIH’s controlling entities—Guangxi Autonomous Region Government, and the key central state-owned telecom enterprise China Unicom Group Corporation—suggesting that NDRC and CAC have equity in or collaborate with CAIH.¹¹⁴
- ▶ CAIH holds a strategically important role as a “platform-based information technology company” approved by the State Council, and is the only “China” prefix enterprise head-

¹¹² “Group Introduction [集团介绍].” Official website of Guangxi Beibu Gulf Investment Group Co., Ltd., (undated), accessed on December 10, 2018 at <http://www.bgigc.com/about/21/1111/1.aspx>

¹¹³ “Company Profile [公司简介].” Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (undated), accessed on November 20, 2018 at <http://www.caih.com/newsView.html?id=628>

¹¹⁴ “China-ASEAN Information Harbor Co., Ltd. Founding Conference held in Nanning, Guangxi [中国—东盟信息港股份有限公司创立大会在广西南宁召开].” Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 30, 2016), accessed on November 19, 2018 at http://www.caih.com/newsView_257.html

CAIH serves to implement a China-ASEAN information and communication network system and information service hub in China's southwest and south-central regions with Guangxi as its fulcrum, outwardly facing ASEAN countries.

quartered in Guangxi.¹¹⁵ In the PRC, the use of geopolitical jurisdictions as the prefix of an organization's name generally indicates the level of government by which the organization is controlled and to which it reports.

The formation of CAIH began in September 2014 with Vice Premier Zhang Gaoli [张高丽] publicly announcing its official launch at the opening ceremony of the 12th China-ASEAN Expo in September 2015.¹¹⁶

CAIH serves to implement a China-ASEAN information and communication network system and information service hub in China's southwest and south-central regions with Guangxi as its fulcrum, outwardly facing ASEAN countries.¹¹⁷ Visits to CAIH by top PRC leaders, including General Secretary Xi Jinping, demonstrate the company's close ties to Beijing and importance in implementing a key DSR initiative.

▶ During an investigation and study visit to in Nanning, Guangxi on 20 April 2017, CPC General Secretary Xi Jinping received a briefing from the president of CAIH Lu Dongliang reporting on the progress of CAIH with Xi "issuing important instructions" on its construction.¹¹⁸

▶ Lu explained that at the China-ASEAN Cyberspace Forum in September 2014, CAC and the Guangxi Autonomous Regional Party Committee Government jointly proposed to build CAIH in order to implement the national OBOR initiative and strengthen the interconnection between China and ASEAN countries.¹¹⁹ The proposal received a positive response from ASEAN countries in attendance.¹²⁰

▶ On 20 April 2017, General Secretary Xi Jinping instructed that CAIH is of great significance to the construction of OBOR, can effectively promote "policy communication, facility connectivity, smooth trade, financial communication and popular support" along the "Belt and Road" countries, and [Xi said he] "hopes that the pace of construction will speed up and that the historical mission entrusted to CAIH by the nation [emphasis added] will be completed at an early date."¹²¹

CAIH is "an important platform" for building a closer China-ASEAN community and the 21st Century Maritime Silk Road "in accordance with Beijing's OBOR strategy" and is also a key enabler of "the implementation of the 'three major positionings,'" ¹²² which consist of [1] serve as the PRC's international channel to ASEAN, [2] establish a new strategic hub for the opening and development of the PRC's

115 "Group Introduction [集团介绍]." Official website of Guangxi Beibu Gulf Investment Group Co., Ltd., (undated), accessed on December 10, 2018 at <http://www.bgigc.com/about/21/111/1.aspx>

116 "General Secretary Xi Jinping inspects the construction of China-ASEAN Information Harbor [平总书记考察中国—东盟信息港建设情况]." Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 5, 2017), accessed on November 20, 2018 at http://www.caih.com/newsView_93.html

117 "General Secretary Xi Jinping inspects the construction of China-ASEAN Information Harbor [平总书记考察中国—东盟信息港建设情况]." Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 5, 2017), accessed on November 20, 2018 at http://www.caih.com/newsView_93.html; and "Visit the 'Digital Silk Road': China-ASEAN Information Harbor [探访'数字丝绸之路': 中国—东盟信息港]." YunnanNet (website of the Yunnan Daily, official newspaper of the Yunnan province provincial party committee according to the site's profile [云南网简介], (October 25, 2018), accessed on December 12, 2018 at <http://m.yunnan.cn/system/2018/10/25/030101739.shtml>

118 "General Secretary Xi Jinping inspects the construction of China-ASEAN Information Harbor [平总书记考察中国—东盟信息港建设情况]." Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 5, 2017), accessed on November 20, 2018 at http://www.caih.com/newsView_93.html

119 "General Secretary Xi Jinping inspects the construction of China-ASEAN Information Harbor [平总书记考察中国—东盟信息港建设情况]." Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 5, 2017), accessed on November 20, 2018 at http://www.caih.com/newsView_93.html

120 "General Secretary Xi Jinping inspects the construction of China-ASEAN Information Harbor [平总书记考察中国—东盟信息港建设情况]." Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 5, 2017), accessed on November 20, 2018 at http://www.caih.com/newsView_93.html

121 "General Secretary Xi Jinping inspects the construction of China-ASEAN Information Harbor [平总书记考察中国—东盟信息港建设情况]." Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 5, 2017), accessed on November 20, 2018 at http://www.caih.com/newsView_93.html

122 "Company Profile [公司简介]." Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (undated), accessed on November 20, 2018 at <http://www.caih.com/newsView.html?id=628>

southwestern central and southern regions, and [3] form the organic integration of Beijing's "OBOR" strategy.¹²³

▶ CAIH is included in at least two national-level plans: [1] the "National 13th Five-Year Plan" (March 17, 2016), and [2] the "Outline of the National Informatization Development Strategy" (July 27, 2016).¹²⁴ The deployment of network connectivity between China and ASEAN (among other regions) is a goal of the

"National 13th Five-Year Plan for the Development of Information and Communication Industry."¹²⁵

▶ The "China-ASEAN Information Harbor Construction Plan," which was approved by the State Council in April 2016, clearly states that China Unicom Group Corporation will take the lead in setting up and building a multi-party, market-oriented China-ASEAN

123 "Guangxi: The new mission of 'three major positioning' leads the new pattern of reform and opening up [广西：“三大定位”新使命引领改革开放新格局].” Official website of the government of the PRC news webpage, (April 28, 2018), accessed on December 4, 2018 at http://www.gov.cn/xinwen/2018-04/28/content_5286717.htm. See also e.g. “. . . Establish smooth international communication facilities, optimize the layout of international communication networks, and improve the cross-border land and sea cable infrastructure. Build a China-Arab [world] online Silk Road, and accelerate the construction of the China-ASEAN Information Harbor. [建立畅通的国际通信设施，优化国际通信网络布局，完善跨境陆海缆基础设施。建设中国—阿拉伯国家等网上丝绸之路，加快建设中国—东盟信息港.]” in “Outline of the Thirteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China: Chapter 6, Expand the Internet economic space [中华人民共和国国民经济和社会发展第十三个五年规划纲要: 第六篇 拓展网络经济空间],” Xinhua News [新华社], (March 17, 2016), accessed on December 10, 2018 at http://www.xinhuanet.com/politics/2016h/2016-03/17/c_1118366322_7.htm; and “National Informatization Development Strategy Outline [国家信息化发展战略纲要], General Office of the State Council, (July 27, 2016), accessed on January 25, 2019 at <http://www.cicpa.org.cn/Column/hyxxhckzl/zcyxs/201708/W020170802569189682130.pdf>; and “Yunnan Daily: National Informatization Development Strategy Outline [云南日报: 国家信息化发展战略纲要],” Yunnan Daily, (July 28, 2016), accessed on December 10, 2018 at <http://yndaily.yunnan.cn/images/2016-07/28/04/2016072804.pdf>; and “Box 3: International Communication Network Project Deployment [专栏3：国际通信网络部署工程]” in “Information and Communication Industry Development Plan (2016-2020) [信息通信行业发展规划（2016-2020年）],” Ministry of Industry and Information Technology (MIIT), (March 29, 2017), accessed on December 10, 2018 at <http://netsecinfo.com/html/372951349.html>: (专栏3：国际通信网络部署工程目标：完善国际海陆缆和海外POP点布局，实现与更多运营商的互联互通。工程内容：一是国际海陆缆建设。建设我国通达北美、亚太、欧洲、非洲、拉美等方向的国际海缆项目，重点考虑中俄、中国-东盟、中国-南亚、中国-中亚等方向的跨境陆缆建设，继续与周边国家开展跨境光缆建设，并根据业务发展情况与有条件的国家和地区建立直达跨境光缆，适时扩容、优化现有跨境系统，探索开展跨境转接。二是海外POP点建设。重点在周边国家和地区以及欧洲、非洲、拉美国家部署海外POP点。)

123 “Guangxi: The new mission of 'three major positioning' leads the new pattern of reform and opening up [广西：“三大定位”新使命引领改革开放新格局].” Official website of the government of the PRC news webpage, (April 28, 2018), accessed on December 4, 2018 at http://www.gov.cn/xinwen/2018-04/28/content_5286717.htm

124 “Guangxi: The new mission of 'three major positioning' leads the new pattern of reform and opening up [广西：“三大定位”新使命引领改革开放新格局].” Official website of the government of the PRC news webpage, (April 28, 2018), accessed on December 4, 2018 at http://www.gov.cn/xinwen/2018-04/28/content_5286717.htm

Information Harbor Co., Ltd.,” according to the report about CAIH’s “founding conference.”¹²⁶

- ▶ The CPC Central Committee’s assignment of the “three major positionings” roles to Guangxi province is highlighted extensively in the 29 January 2016 “National economic and social development of the (Guangxi) autonomous region resolution of the Thirteenth Five-Year Plan” passed by the fifth meeting of the 12th People’s Congress of Guangxi Zhuang Autonomous Region posted on the website of the NDRC’s Development Planning Division [发展规划司].¹²⁷

The director of MIIT’s Cybersecurity Authority Zhao Zhiguo and the deputy director of the Guangxi Communications Administration Wang Shanzhu on 17 March 2018 visited CAIH for an exchange with CAIH Chairman Lu Dongliang and other executive personnel; Zhao affirmed that in terms of development CAIH is clearly “macro-positioned,” and is “meticulous at the micro level,” and encouraged CAIH to use its international business platform to gather

resources and play a full role in promoting local economic and social development.¹²⁸

- ▶ In addition, during a May 2018 visit to CAIH, Lu Xinshe—Secretary of the Communist Party of China Guangxi Provincial Committee—urged personnel to strive to accelerate the construction of CAIH into a powerful engine for information development with Guangxi as the base, outwardly facing ASEAN while serving as the communication network system and information service hub of China’s southwest and south-central regions, and playing a greater role in international exchange and cooperation.¹²⁹
- ▶ CAIH is currently focused on building five large platforms: an infrastructure platform, an information sharing platform, a technology cooperation platform, an investment and trade service platform, and a humanities exchange platform, and 11 major projects such as a construction of information and

126 “China-ASEAN Information Harbor Co., Ltd. Founding Conference held in Nanning, Guangxi [中国—东盟信息港股份有限公司创立大会在广西南宁召开].” Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 30, 2016), accessed on November 19, 2018 at http://www.caih.com/newsView_257.html

127 “The 13th Five Year Plan for National Economic and Social Development of Guangxi Zhuang Autonomous Region: Resolution of the Fifth Session of the 12th People’s Congress of Guangxi Zhuang Autonomous Region on the 13th Five Year Plan for National Economic and Social Development of the Autonomous Region [广西壮族自治区国民经济和社会发展第十三个五年规划纲要: 广西壮族自治区第十二届人民代表大会第五次会议关于自治区国民经济和社会发展第十三个五年规划纲要的决议].” Official Website of the National reform and Development Commission (NDRC) Development Planning Division [发展规划司] (January 29, 2016), accessed on December 7, 2018 at <http://ghs.ndrc.gov.cn/ghwb/dfztgh/201607/P020160713589724659626.pdf>; and “Guangxi: The new mission of ‘three major positioning’ leads the new pattern of reform and opening up [广西: “三大定位”新使命引领改革开放新格局].” Official website of the government of the PRC news webpage, (April 28, 2018), accessed on December 4, 2018 at http://www.gov.cn/xinwen/2018-04/28/content_5286717.htm; and “Peng Qinghua: Struggling to Take on the New Mission of ‘Three Major Positions’ to Realize a New Leap in Guangxi’s Open Development——Speech at the opening development conference in the whole district [彭清华: 奋力担当“三大定位”新使命 实现广西开放发展新跨越——在全区开放发展大会上的讲话].” Communist Party of China (CPC) news webpage of People’s Daily website, (June 24, 2018), accessed on November 29, 2018 at <http://cpc.people.com.cn/n1/2016/0624/c64102-28476916.html>

128 “Zhao Zhiguo, Director of the Network Security Administration of the Ministry of Industry and Information Technology, and Wang Shanzhu, Deputy Director of the Guangxi Communications Administration, visited China Unicom Guangxi Branch and China-ASEAN Information Harbor Co., Ltd. [工业和信息化部网络安全管理局局长赵志国、广西通信管理局副局长王山竹到中国联通广西分公司及中国-东盟信息港股份有限公司调研].” Official website of the Guangxi Communications Administration [广西自治区自治通信管理局], (March 27, 2017), accessed on December 10, 2018 at http://www.gxca.gov.cn/4/20170327172033_42.html

129 “Lu Xinshe, Party Secretary of the Autonomous Region, visits CAIH to conduct special research [自治区党委书记鹿心社莅临中国东信开展专题调研].” Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 29, 2018), accessed on November 20, 2018 at http://www.caih.com/newsView_643.html CAIH was formed on 26 April 2016 by its supporting and supervising entities the Guangxi Autonomous Region Government and China Unicom Group Corporation, which is a key central state-owned enterprise managed under the State Council of the PRC’s State-Owned Asset Supervision and Administration Commission (SASAC), according to an article posted on the official CAIH website vernacular Chinese: “China-ASEAN Information harbor Co., Ltd. Founding Conference held in Nanning, Guangxi [中国—东盟信息港股份有限公司创立大会在广西南宁召开].” Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 30, 2016), accessed on November 19, 2018 at http://www.caih.com/newsView_257.html

communication infrastructure connectivity project and a China-ASEAN information harbor base project.¹³⁰

- ▶ Specifically, CAIH projects include the China Surveying and Mapping Geographic Information System, the China-ASEAN Harbor City Cooperation Network Information Platform, Qinzhou Bonded Harbor, Smart

Harbor, Southbound Multimodal Transport Integrated Service Information Platform, Southbound Channel Single Window International Cooperation Platform, China-ASEAN Economic and Trade Big Data Platform Real-time Construction Operation, CAIH Sugarcom, as well as projects related to medical imaging, cloud communications, wireless cities, and cross-border trade settlement information services.¹³¹

130 “China-ASEAN Information harbor Co., Ltd. Founding Conference held in Nanning, Guangxi [中国—东盟信息港股份有限公司创立大会在广西南宁召开].” Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 30, 2016), accessed on November 19, 2018 at http://www.caih.com/newsView_257.html

131 “Lu Xinshe, Party Secretary of the Autonomous Region, visits CAIH to conduct special research [自治区党委书记鹿心社莅临中国东信开展专题调研].” Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 29, 2018), accessed on November 20, 2018 at http://www.caih.com/newsView_643.html

Timeline of PRC Leadership Visits to CAIH

26 APRIL 2016:

China-ASEAN Information Port Co., Ltd. (hereinafter referred to as “CAIH”) Founding Conference held in Nanning, Guangxi.¹³² “China Unicom is designated the lead in setting up a multi-party, market-oriented CAIH to carry out China-ASEAN information harbor construction.”¹³³



27 APRIL 2017:

CPC General Secretary Xi Jinping during an inspection tour in Nanning, Guangxi provides guidance and is briefed by CAIH President Lu Dongliang on CAIH construction and results.¹³⁴



¹³² China-ASEAN Information Harbor Co., Ltd. (CAIH) was formed on 26 April 2016 by its supporting and supervising entities the Guangxi Autonomous Region Government and China Unicom Group Corporation, which is a key central state-owned enterprise managed under the State Council of the PRC’s State-Owned Asset Supervision and Administration Commission (SASAC), according to this article: “China-ASEAN Information Port Co., Ltd. Founding Conference held in Nanning, Guangxi [中国—东盟信息港股份有限公司创立大会在广西南宁召开],” CAIH official website, (May 30, 2016), accessed on November 19, 2018 at http://www.caih.com/newsView_11.html

¹³³ China-ASEAN Information Harbor Co., Ltd. (CAIH) was formed on 26 April 2016 by its supporting and supervising entities the Guangxi Autonomous Region Government and China Unicom Group Corporation, which is a key central state-owned enterprise managed under the State Council of the PRC’s State-Owned Asset Supervision and Administration Commission (SASAC), according to this article: “China-ASEAN Information Port Co., Ltd. Founding Conference held in Nanning, Guangxi [中国—东盟信息港股份有限公司创立大会在广西南宁召开],” CAIH official website, (May 30, 2016), accessed on November 19, 2018 at http://www.caih.com/newsView_11.html

¹³⁴ “General Secretary Xi Jinping inspects the construction of China-ASEAN Information Harbor [平总书记考察中国—东盟信息港建设情况],” Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 5, 2017), accessed on November 19, 2018 at http://www.caih.com/newsView_257.html. China-ASEAN Information Harbor Co., Ltd. (CAIH) was formed on 26 April 2016 by its supporting and supervising entities the Guangxi Autonomous Region Government and China Unicom Group Corporation, which is a key central state-owned enterprise managed under the State Council of the PRC’s State-Owned Asset Supervision and Administration Commission (SASAC), according to this article: “China-ASEAN Information Port Co., Ltd. Founding Conference held in Nanning, Guangxi [中国—东盟信息港股份有限公司创立大会在广西南宁召开],” CAIH official website, (May 30, 2016), accessed on November 19, 2018 at http://www.caih.com/newsView_11.html

9 JUNE 2017:

Wang Yang, member of the Standing Committee of the Politburo of the CPC Central Committee and Vice Premier of the State Council, during an investigation tour in Guangxi inspects CAIH construction progress and provides guidance.¹³⁵



17 MARCH 2018:

Director of MIIT's Cybersecurity Authority Zhao Zhiguo and the deputy director of the Guangxi Communications Administration Wang Shanzhu visited CAIH.¹³⁶



135 Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH) in vernacular Chinese: “汪洋副总理考察中国—东盟信息港建设情况 [Vice Premier Wang Yang inspects the construction of China-ASEAN Information Harbor]” posted 12 June 2017, accessed 19 November 2018 at root URL: http://www.caih.com/newsView_105.html (CAIH) was formed on 26 April 2016 by its supporting and supervising entities the Guangxi Autonomous Region Government and China Unicom Group Corporation, which is a key central state-owned enterprise managed under the State Council of the PRC’s State-Owned Asset Supervision and Administration Commission (SASAC), according to this article: “China-ASEAN Information Port Co., Ltd. Founding Conference held in Nanning, Guangxi [中国—东盟信息港股份有限公司创立大会在广西南宁召开],” CAIH official website, (May 30, 2016), accessed on November 19, 2018 at http://www.caih.com/newsView_11.html

136 “Zhao Zhiguo, Director of the Network Security Administration of the Ministry of Industry and Information Technology, and Wang Shanzhu, Deputy Director of the Guangxi Communications Administration, visited China Unicom Guangxi Branch and China-ASEAN Information Harbor Co., Ltd. [工业和信息化部网络安全管理局局长赵志国、广西通信管理局副局长王山竹到中国联通广西分公司及中国—东盟信息港股份有限公司调研],” Official website of the Guangxi Communications Administration [广西区壮自治通信管理局], (March 27, 2017), accessed on December 10, 2018 at http://www.gxca.gov.cn/4/20170327172033_42.html

20 MAY 2018:

Vice Chairman of the National Committee of the Chinese People's Political Consultative Conference Ma Biao leads a special investigation group of the National Committee of the Chinese People's Political Consultative Conference to inspect CAIH.¹³⁷



137 "Vice Chairman of the National Committee of the Chinese People's Political Consultative Conference Ma Biao led a special investigation group of the National Committee of the Chinese People's Political Consultative Conference to Inspect CAIH [全国政协副主席马飏率全国政协专题调研组莅临中国东信考察]" Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (May 24, 2018), accessed on November 19, 2018 at <http://www.caih.com/newsView.html?id=628> China-ASEAN Information Harbor Co., Ltd. (CAIH) was formed on 26 April 2016 by its supporting and supervising entities the Guangxi Autonomous Region Government and China Unicom Group Corporation, which is a key central state-owned enterprise managed under the State Council of the PRC's State-Owned Asset Supervision and Administration Commission (SASAC), according to this article: "China-ASEAN Information Port Co., Ltd. Founding Conference held in Nanning, Guangxi [中国—东盟信息港股份有限公司创立大会在广西南宁召开]," CAIH official website, (May 30, 2016), accessed on November 19, 2018 at http://www.caih.com/newsView_11.html



138 “Lu Xinshe, Party Secretary of the Autonomous Region, visits CAIH to conduct special research [自治区党委书记鹿心社莅临中国东信开展专题调研]” posted 29 May 2018 on the Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH) in vernacular Chinese observed 20 November 2018 at root URL: http://www.caih.com/newsView_643.html. China-ASEAN Information Harbor Co., Ltd. (CAIH) was formed on 26 April 2016 by its supporting and supervising entities the Guangxi Autonomous Region Government and China Unicom Group Corporation, which is a key central state-owned enterprise managed under the State Council of the PRC’s State-Owned Asset Supervision and Administration Commission (SASAC), according to this article: “China-ASEAN Information Port Co., Ltd. Founding Conference held in Nanning, Guangxi [中国—东盟信息港股份有限公司创立大会在广西南宁召开],” CAIH official website, (May 30, 2016), observed 19 November 2018 at http://www.caih.com/newsView_11.html

12 SEPTEMBER 2018;

Han Zheng—member of the Standing Committee of the Political Bureau of the CPC Central Committee and vice premier of the State Council—visits CAIH.¹³⁹



22 NOVEMBER 2018:

Li Peixing—deputy governor of Gansu Province, accompanied by Xi Yang, deputy secretary general of the [Guangxi] autonomous region and director of the Big Data Development Bureau—visits CAIH.¹⁴⁰



139 “Han Zheng, member of the Standing Committee of the Political Bureau of the CPC Central Committee and vice premier of the State Council, visits China-ASEAN Information Harbor [中共中央政治局常委、国务院副总理韩正到中国东信调研],” Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (September 18, 2018), accessed on November 19, 2018 at <http://www.caih.com/newsView.html?id=819>. China-ASEAN Information Harbor Co., Ltd. (CAIH) was formed on 26 April 2016 by its supporting and supervising entities the Guangxi Autonomous Region Government and China Unicom Group Corporation, which is a key central state-owned enterprise managed under the State Council of the PRC’s State-Owned Asset Supervision and Administration Commission (SASAC), according to this article: “China-ASEAN Information Port Co., Ltd. Founding Conference held in Nanning, Guangxi [中国—东盟信息港股份有限公司创立大会在广西南宁召开].” CAIH official website, (May 30, 2016), accessed on November 19, 2018 at http://www.caih.com/newsView_11.html

140 “Li Peixing, deputy governor of Gansu Province visits CAIH for investigation [甘肃省副省长李沛兴到中国东信调研]” Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (November 22, 2018), accessed on November 26, 2018 at <http://www.caih.com/newsView.html?id=983#>. China-ASEAN Information Harbor Co., Ltd. (CAIH) was formed on 26 April 2016 by its supporting and supervising entities the Guangxi Autonomous Region Government and China Unicom Group Corporation, which is a key central state-owned enterprise managed under the State Council of the PRC’s State-Owned Asset Supervision and Administration Commission (SASAC), according to this article: “China-ASEAN Information Port Co., Ltd. Founding Conference held in Nanning, Guangxi [中国—东盟信息港股份有限公司创立大会在广西南宁召开].” CAIH official website, (May 30, 2016), accessed on November 19, 2018 at http://www.caih.com/newsView_11.html

5 DECEMBER 2018

Director of Anhui Data Resources Administration Wang Wei visits CAIH.¹⁴¹



21 JANUARY 2019:

Gansu Provincial NDRC Communist Party Committee Secretary and Director Kang Jun visits CAIH.¹⁴²



¹⁴¹ “Director of Anhui Data Resources Administration Wang Wei visits CAIH for study and exchange [安徽省数据资源管理局局长王崧到中国东信参观交流].” Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (December 5, 2018) accessed on January 25, 2019 at http://www.caih.com/newsView_1011.html

¹⁴² “Gansu Provincial NDRC Communist Party Committee Secretary and Director Kang Jun visits CAIH for study and exchange [甘肃省发展改革委党组书记、主任康军到中国东信参观交流].” Official website of the China-ASEAN Information Harbor Co., Ltd. (CAIH), (January 22, 2019), accessed on January 25, 2019 at http://www.caih.com/newsView_1087.html#

Appendix A

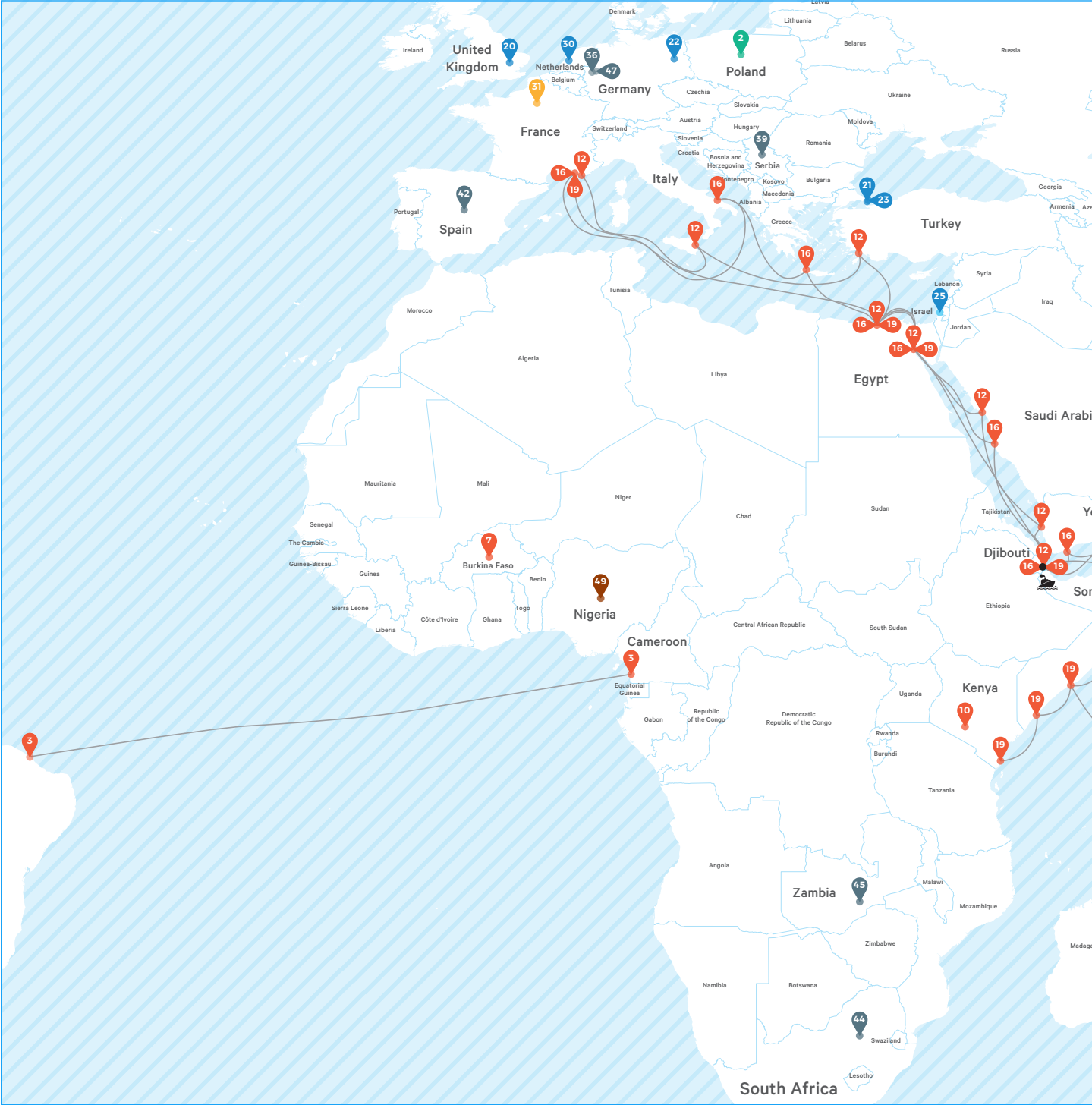
Map and Table of Select DSR Projects

- PLAN Base
- E-Commerce
- Fiber Optic Cable
- M&A
- Satellite Infrastructure
- Smart City
- Telecommunications



Appendix A (Continued)

-  PLAN Base
-  Satellite Infrastructure
-  E-Commerce
-  Smart City
-  Fiber Optic Cable
-  Telecommunications
-  M&A



Appendix A (Continued)

-  PLAN Base
-  Satellite Infrastructure
-  E-Commerce
-  Smart City
-  Fiber Optic Cable
-  Telecommunications
-  M&A



Appendix A (Continued)

-  PLAN Base
-  Satellite Infrastructure
-  E-Commerce
-  Smart City
-  Fiber Optic Cable
-  Telecommunications
-  M&A



Appendix A (Continued)

	NAME	LOCATION	ESTIMATED PROJECT VALUE (\$)	STATUS	PROJECT TYPE	DESCRIPTION	PRC ENTITY
1	MALAYSIA DIGITAL FREE TRADE ZONE (DFTZ)	Malaysia	\$34.9 million	Under Construction	E-Commerce	Alibaba launched the \$34.9 million Digital Free Trade Zone (DFTZ) project with the Malaysian government in March 2017 to offer logistics and fulfillment capabilities and an online services platform.	Alibaba Group
2	GLOBEBILL-ECARD S. A. COLLABORATION PROJECT	Poland	N/A	Completed	E-Commerce	I.Z.P. affiliate GlobeBill in 2014 signed a strategic cooperation agreement with Poland's eCard S. A. to jointly develop a cross-border e-commerce platform.	GlobeBill
3	CAMEROON-BRAZIL CABLE SYSTEM (SAIL)	Kribi, Cameroon/ Fortaleza, Brazil	\$525.5 million	Completed	Fiber Optic Cable	Huawei Marine in September 2018 completed the \$525.5 million Cameroon-Brazil Cable System (CBCS) with help from Cameroon's CamTel and Brazil's Telefónica and funding support from China EXIM Bank.	Huawei Marine/ China Unicom
4	HYALROUTE-CAMBODIA SUBMARINE CABLE	Sihanoukville, Cambodia	\$70 million	Completed	Fiber Optic Cable	Cambodia granted a 25-year contract to Cambodia Fibre Optic Communication Network, a subsidiary of HyalRoute Group, to construct and operate a \$70 million submarine cable and a landing station in southwestern Preah Sihanouk Province.	HyalRoute/ Cambodia Fibre Optic Communication Network (CFOCN)
5	ASIA-PACIFIC GATEWAY (APG) SUBMARINE FIBER OPTIC CABLE	China/Vietnam/ Malaysia/Japan/ South Korea/ Thailand/ Singapore/Taiwan/ Hong Kong	N/A	Completed	Fiber Optic Cable	The 10,900-km Asia-Pacific Gateway (APG) Submarine Cable is owned by a consortium of 13 members, including China Telecom, China Unicom, and China Mobile.	China Telecom/ China Unicom/ China Mobile
6	RAWALPINDI-KHUNJERAB FIBER OPTIC CABLE	Rawalpindi, Pakistan	\$44 million	Completed	Fiber Optic Cable	This 820-km fiber optic cable project from Rawalpindi, Pakistan to Khunjerab was completed by Huawei and Pakistan's Special Communication Organization (SCO) in July 2018 at a cost of \$44 million.	Huawei Technologies
7	BURKINA FASO FIBER OPTIC CABLE SYSTEM	Ouagadougou, Burkina Faso	\$20.5 million	Completed	Fiber Optic Cable	Huawei in July 2018 completed the \$20.5 million fiber optic backbone network connecting Burkina Faso's capital of Ouagadougou to Dakara Dakola.	Huawei Technologies
8	CHINA-AFGHANISTAN FIBER OPTIC NETWORK	Afghanistan/China	\$60 million	Under Construction	Fiber Optic Cable	ZTE and Huawei in April 2017 agreed to construct a \$60 million fiber optic cable connecting Kashgar, China to Afghanistan's Fayzabad, and ultimately on to Pakistan, India, Tajikistan, Iran, Uzbekistan, Turkmenistan and Europe.	Zhongxing Technologies (ZTE)/Huawei Technology
9	KUMUL SUBMARINE CABLE	Papua New Guinea	\$200 million	Under Construction	Fiber Optic Cable	Huawei and China EXIM Bank in August 2018 agreed to assist Papua New Guinea's PNG DataCo in the construction of the 5,400-km Kumul Submarine Cable, which will establish the country's national backbone transmission network.	Huawei Marine

Appendix A (Continued)

	NAME	LOCATION	ESTIMATED PROJECT VALUE (\$)	STATUS	PROJECT TYPE	DESCRIPTION	PRC ENTITY
10	KENYA NATIONAL OPTIC FIBRE BACKBONE (NOFBI)	Nairobi, Kenya	\$59.3 million	Under Construction	Fiber Optic Cable	Kenya in 2012 secured a concessional loan of \$59.3 million from the China EXIM Bank to construct a nationwide fiber optic network. The project's second phase commenced in 2014.	Huawei Technologies
11	MYANMAR FIBER OPTIC COMMUNICATION NETWORK	Myanmar	\$118.6 million	Completed	Fiber Optic Cable	The Myanmar Fiber Optic Communication Network (MFOCN), a subsidiary of HyalRoute Group, installed 4,500-km of fiber optic cable in central and southern Myanmar for an estimated \$118.6 million.	HyalRoute/ Myanmar Fiber Optic Communication Network (MFOCN)
12	SEA-ME-WE 5 SUBMARINE CABLE	Egypt/Yemen/Italy/ Djibouti/Indonesia/ United Arab Emirates/Pakistan/ Bangladesh/Turkey/ Sri Lanka/Malaysia/ Myanmar/Oman/ France/Singapore/ Saudi Arabia	\$70 million	Completed	Fiber Optic Cable	The Southeast Asia-Middle East-Western Europe 5 (SEA-ME-WE 5) fiber optic cable is a \$70 million, 20,000-km cable system that was constructed by a consortium of companies, including China Telecom, China Mobile, and China Unicom.	China Telecom/ China Unicom/ China Mobile
13	NATIONWIDE SUBMARINE CABLE OOREDOO MALDIVES (NASCOM)	Maldives	\$25 million	Completed	Fiber Optic Cable	Ooredoo Maldives and Huawei Marine in December 2016 inaugurated Ooredoo's Nationwide Submarine Cable. The \$25 million, 1,200-km cable aimed at connecting the Maldives' six main islands was deployed by Huawei Marine using its 100G technology.	Huawei Marine
14	STRATEGIC EVOLUTION UNDERWATER LINK (SEUL)	Belize	\$100 million	Completed	Fiber Optic Cable	Huawei in August 2017 completed Strategic Evolution Underwater Link (SEUL), an underwater cable system aimed to connect the Belize mainland to San Pedro Island.	Huawei Marine
15	MAURITIUS AND RODRIGUES SUBMARINE CABLE SYSTEM (MARS)	Mauritius	N/A	Under Construction	Fiber Optic Cable	The MARS fiber optic project, which will connect Mauritius to the Islands of Rodrigues, is being built by Mauritius Telecom, Hong Kong's PCCW Global and Huawei Marine.	Huawei Marine
16	ASIA AFRICA EUROPE-1 (AAE-1) SUBMARINE CABLE	Egypt/Yemen/ Oman/Italy/Hong Kong/Greece/ Djibouti/Qatar/ United Arab Emirates/Saudi Arabia/Pakistan/ Malaysia/France/ India/Myanmar/ Thailand/ Cambodia/Vietnam	N/A	Completed	Fiber Optic Cable	China Unicom, MFOCN, and CFOCN are members of a international consortium that helped to construct the Asia Africa Europe-1 submarine cable. The 25,000-km cable project was initiated in 2012 and was officially launched into service in 2017.	HyalRoute/China Unicom
17	SOUTHEAST ASIA-JAPAN CABLE 2 (SJC2)	Singapore/Japan/ Hong Kong/Taiwan/ China/South Korea/ Vietnam/Cambodia/ Thailand	N/A	Under Construction	Fiber Optic Cable	China Mobile is part of a consortium of companies working to build the Southeast Asia-Japan Cable 2 (SJC2). The 10,500-km cable is expected to be completed by the end of 2020.	China Mobile

Appendix A (Continued)

	NAME	LOCATION	ESTIMATED PROJECT VALUE (\$)	STATUS	PROJECT TYPE	DESCRIPTION	PRC ENTITY
18	BAY TO BAY EXPRESS CABLE SYSTEM (BTOBE)	United States/ Singapore/ Malaysia/Hong Kong	N/A	Under Construction	Fiber Optic Cable	China Mobile alongside Facebook, Amazon, and NEC is working to construct the Bay to Bay Express (BtoBE) Cable System, stretching from the Guangdong-Hong Kong-Macao region to San Francisco and Singapore. The project is expected to come into operation in early 2021.	China Mobile
19	PEACE SUBMARINE CABLE	Pakistan/Egypt/ France/Djibouti/ Somalia/Kenya/ South Africa/ Seychelles	N/A	Under Construction	Fiber Optic Cable	Huawei Ocean Network Company announced in November 2017 that it will construct the PEACE submarine cable. Funding for the project is coming from China-ASEAN Information Harbor Co., China Construction Bank, and Huawei.	Huawei Ocean Network Company/ China-ASEAN Information Harbor Company/China Construction Bank
20	ACQUISITION OF NEUL	United Kingdom	\$25 million	Completed	M&A	Huawei in 2014 acquired Cambridge-based Internet of Things (IoT) company Neul for \$25 million.	Huawei Technologies
21	ACQUISITION OF NETAS	Turkey	\$101.28 million	Completed	M&A	ZTE in 2016 acquired one of Turkey's leading telecommunications companies, Netas Telekomunikasyon for \$101.28 million.	Zhongxing Technologies (ZTE)
22	ACQUISITION OF DATA ARTISANS	Germany	\$103.6 million	Completed	M&A	Alibaba in 2019 acquired Germany's Data Artisans, a big data firm, for \$103.6 million.	Alibaba Group
23	ACQUISITION OF TRENDYOL GROUP	Turkey	\$728 million	Completed	M&A	Alibaba in 2018 acquired Turkey-based e-commerce company Trendyol Group for \$728 million.	Alibaba Group
24	ACQUISITION OF TRUSTGO	United States	\$30 million	Completed	M&A	Baidu in 2013 acquired California-based cybersecurity firm, TrustGo, for \$30 million.	Baidu
25	ACQUISITION OF HEXATIER	Israel	\$42 million	Completed	M&A	Huawei in 2016 acquired Tel Aviv-based cybersecurity firm, HexaTier, for \$42 million.	Huawei
26	ACQUISITION OF MOTOROLA MOBILITY	United States	\$2.9 billion	Completed	M&A	Lenovo in 2014 acquired Chicago-based Motorola Mobility for \$2.9 billion.	Lenovo
27	ACQUISITION OF HELLOPAY	Singapore	N/A	Completed	M&A	Alibaba's Ant Financial in 2017 acquired Singapore-based fintech company, HelloPay, for an undisclosed amount. HelloPay is the payments firm attached to Lazada Group, which Alibaba acquired in 2016.	Ant Financial
28	ACQUISITION OF EYEVERIFY	United States	\$70 million	Completed	M&A	Alibaba's Ant Financial in 2016 acquired Missouri-based biometrics firm EyeVerify for \$70 million.	Ant Financial

Appendix A (Continued)

	NAME	LOCATION	ESTIMATED PROJECT VALUE (\$)	STATUS	PROJECT TYPE	DESCRIPTION	PRC ENTITY
29	ACQUISITION OF LAZADA GROUP	Singapore	\$4 billion	Completed	M&A	Alibaba Group in 2016 bought the controlling stake in Singapore's e-commerce company, Lazada Group, for \$1 billion. Alibaba continued to raise its ownership stake from 51% to 83% with additional investments of \$1 billion in June 2017 and \$2 billion in March 2018.	Alibaba Group
30	ACQUISITION OF LINX TELECOMMUNICATIONS	Amsterdam, Netherlands	N/A	Completed	M&A	State-owned carrier CITIC Telecom in October 2017 acquired Linx Telecommunications, an Amsterdam-based telecom provider, for an undisclosed amount.	CITIC Telecom
31	EUTELSAT-CHINA UNICOM JOINT VENTURE	Paris, France	N/A	Announced	Satellite Infrastructure	French satellite operator Eutelsat on 9 January 2018 signed a memorandum of understanding with China Unicom to cooperate on jointly developing commercial satellite communications in the Asia-Pacific region.	China Unicom
32	CHINA-PAKISTAN BEIDOU NAVIGATION SYSTEM	Karachi, Pakistan	N/A	Under Construction	Satellite Infrastructure	China's Beidou Satellite Navigation System as of 2018 is undergoing trial operations in Karachi, Pakistan. Pakistan was the first country to deploy China's Beidou system.	China Great Wall Industry Co./Beijing Unistrong Science and Technology Co.
33	PATAGONIA TELEMETRY TRACKING AND COMMAND STATION	Patagonia, Argentina	\$300 million	Completed	Satellite Infrastructure	A \$300 million telemetry facility operated by the PLA's China Satellite Launch and Tracking Control General in Patagonia was completed in 2017. Construction was carried out by China Harbour Engineering Co. and the Xi'an Satellite Control Centre.	China Harbour Engineering Company/Xi'an Satellite Control Centre
34	FOREST CITY	Johor Bahru, Malaysia	\$100 billion	Under Construction	Smart City	Forest City is a \$100 billion mixed development project being developed by Country Garden Holdings on four man-made Malaysian islands. Huawei, China Construction Steel Structure Corporation and Bank of China have signed on to help develop smart city technology.	Huawei Technologies/China Construction Steel Structure Corporation/Country Garden Holdings
35	NEW MANILA BAY-CITY OF PEARL	Manila, Philippines	\$100 billion	Under Construction	Smart City	This \$100 billion project envisions reclaiming 407 hectares of land off the coast of Manila to create a 'smart city' run by artificial intelligence. Reclamation work reportedly began in August 2017, while the whole project is expected to take 30 years to complete.	UAA Kinming Group Development Corporation
36	DUISBURG SMART CITY	Duisburg, Germany	N/A	Under Construction	Smart City	Huawei in January 2018 signed a memorandum of understanding to develop the Duisburg Smart City.	Huawei Technologies
37	LAHORE SAFE CITY	Punjab, Pakistan	N/A	Completed	Smart City	Huawei in 2015 began working with the Punjab Safe Cities Authority (PSCA) to build a Smart and Safe City platform for Lahore. The project was inaugurated in January 2018.	Huawei Technologies

Appendix A (Continued)

	NAME	LOCATION	ESTIMATED PROJECT VALUE (\$)	STATUS	PROJECT TYPE	DESCRIPTION	PRC ENTITY
38	MAURITIUS SMART CITY	Mauritius	N/A	Under Construction	Smart City	Huawei is working to deploy its Safe City platform to assist the government of Mauritius in improving its emergency handling efficiency. The project is expected to be completed by the end of 2019.	Huawei Technologies
39	BELGRADE SAFE CITY PHASE 1	Belgrade, Serbia	N/A	Completed	Smart City	Huawei in 2016 signed a Safe City Strategic Cooperation Agreement with Serbia's Ministry of the Interior. The first phase of the project was completed in March 2018, and phase two has yet to be announced as of January 2019.	Huawei Technologies
40	QUERETARO ICT FACILITIES	Queretaro, Mexico	\$1.5 billion	Completed	Smart City	Huawei in October 2014 began constructing four ICT facilities in the Mexican state of Queretaro. The project was completed in December 2015.	Huawei Technologies
41	URBAN SAFETY COMMAND AND CONTROL CENTER (ECU 911)	Quito, Ecuador	\$42.69 million	Completed	Smart City	The China National Electronics Import and Export Corporation (CEIEC) completed a \$42.69 million laboratory to boost Ecuador's ability to fight crime and respond to emergencies utilizing Chinese technology. The second phase of development was completed in 2014.	China National Electronics Import and Export Corporation
42	RIVAS-VACIAMADRID SMART CITY	Rivas-Vaciamadrid, Spain	N/A	Completed	Smart City	Huawei provided the community of Rivas-Vaciamadrid, a community outside Madrid, with its eLTE Broadband Trunking Solution.	Huawei Technologies
43	BONIFACIO GLOBAL CITY (BGC)	Manila, Philippines	N/A	Completed	Smart City	Huawei in 2014 was asked to provide Manila's Bonifacio Global City (BCG), part of a former Philippine Army base, with the company's Safe City platform, consisting of High-Definition Intelligent IP Cameras.	Huawei Technologies
44	CITY OF EKURHULENI (COE)	Gauteng, South Africa	N/A	Completed	Smart City	The Ekurhuleni Municipality in 2016 announced that it was partnering with Huawei to improve the city's digital and broadband services.	Huawei Technologies
45	SMART ZAMBIA	Lusaka, Zambia	N/A	Completed	Smart City	Huawei in 2016 completed the Zambian National Data Center, designed to ensure the security and continuity of the Zambian government's services and data.	Huawei Technologies
46	VENEZUELAN SMART ID DATABASE	Venezuela	\$70 million	Completed	Smart City	The Venezuelan government in 2017 hired ZTE to build a database and create a mobile payment system attached to "fatherland" cards, smart ID cards that have been linked by the government to food, health, and social programs.	Zhongxing Technologies (ZTE)
47	GELSEN-NET SMART CITY	Gelsenkirchen, Germany	N/A	Completed	Smart City	Huawei alongside Germany's GELSEN-NET provided the town of Gelsenkirchen with an ICT capability disclosure platform to enhance the town's digital connectivity.	Huawei Technologies

Appendix A (Continued)

	NAME	LOCATION	ESTIMATED PROJECT VALUE (\$)	STATUS	PROJECT TYPE	DESCRIPTION	PRC ENTITY
48	OMAN DIGITAL INFRASTRUCTURE PROJECT	Oman	\$239 million	Under Construction	Telecommunications	AIB announced in December 2017 that it would provide a \$239 million loan to Oman Broadband to rollout a fiber optic broadband cable network. The project is expected to be completed by 2021.	Asian Infrastructure Investment Bank (AIIB)
49	GALAXY BACKBONE ICT PROJECT	Abuja, Nigeria	\$100 million	Under Construction	Telecommunications	China and Nigeria signed a loan agreement to develop a galaxy backbone ICT network to improve communications. China EXIM Bank provided \$100 million in loans, and the project is targeting a March 2019 completion date.	Export-Import Bank of China

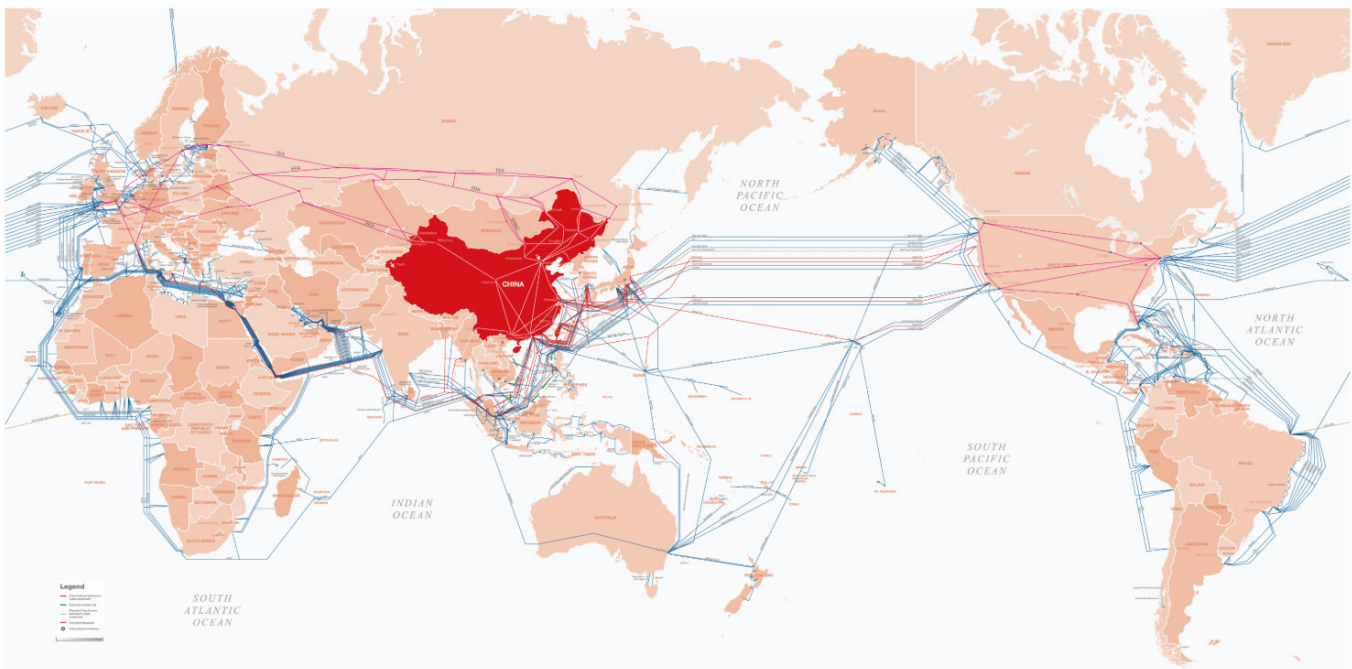
*N/A = information was not available

**Some fiber optic cable networks may have more than one landing point in a single country.

Appendix B

China Unicom Global Network Capabilities Map

China Unicom Global Network Capabilities



Source: China Unicom

Appendix C

Timeline of PRC Technical Standards Proliferation

OCTOBER 2015:	The Office of the Leading Group for Promoting the Construction of the “Belt and Road” project issues the “Joint Harmonization of Standards for ‘One Belt and One Road’ Action Plan (2015-2017)”. ¹⁴³ It is subsequently referred to as “Action Plan I.” ¹⁴⁴
MAY 2017:	The PRC National Standards Administration Committee led 12 countries—Russia, Belarus, Serbia, Mongolia, Cambodia, Malaysia, Kazakhstan, Ethiopia, Greece, Switzerland, Turkey, and the Philippines in signing the “Joint Initiative on Strengthening Standards Cooperation and Promoting the Construction of the Belt and Road Initiative.” ¹⁴⁵
NOVEMBER 2017:	The PRC Standardization Law is revised at the 30th meeting of the Standing Committee of the 12th National People’s Congress. ¹⁴⁶
DECEMBER 2017:	The PRC “Standardization Administration” ¹⁴⁷ holds a press conference to announce the “Harmonization of Standards for Jointly Constructing ‘One Belt and One Road’ Action Plan (2018-2020)” ¹⁴⁸ , which is referred to as “Action Plan II”. ¹⁴⁹

143 “Joint Harmonization of Standards for ‘One Belt and One Road’ Action Plan (2015-2017) [标准联通“一带一路”行动计划（2015—2017）]”, National Development and Reform Commission (NDRC) official website, (October 22, 2015), accessed on January 24, 2019 at http://www.ndrc.gov.cn/gzdt/201510/t20151022_755473.html; and “Do you know the major policies of the ‘Belt and Road’? [“一带一路”这些重大政策你知道吗？], One Belt One Road Net [一带一路网] rehosted on a “China SKU Center” website, (May 22, 2017), accessed on January 24, 2019 at <http://www.ebrun.com/20170522/231917.shtml>

144 “Harmonization of Standards for Jointly Constructing ‘One Belt and One Road’ Action Plan (2018-2020) Announced [标准联通共建“一带一路”行动计划（2018-2020年）发布], General Administration of Quality Supervision, Inspection and Quarantine of the PRC [AQSIQ [国家质量监督检验检疫总局] rehosted on the website of the Hubei provincial Administration of Quality Supervision, Inspection and Quarantine [湖北质量网], (January 11, 2018), accessed on January 24, 2019 at <http://hbwzlw.cnhubei.com/jryw/201801/t4059297.shtml>

145 “Five years of hard work: China’s standards accelerate to the world [砥砺奋进的5年：中国标准加快走向世界],” People’s Daily Overseas Edition rehosted on the CPC page of The People’s Daily website, (July 3, 2017), accessed on January 25, 2019 at <http://cpc.people.com.cn/n1/2017/0703/c64387-29378658.html> or http://www.xinhuanet.com/silkroad/2017-07/03/c_129645859.htm

146 “Standardization Law of the PRC [中华人民共和国标准化法（1988年12月29日第七届全国人民代表大会常务委员会第五次会议通过 2017年11月4日第十二届全国人民代表大会常务委员会第三十次会议修订）],” National People’s Congress of the PRC official website, (November 4, 2017), accessed on January 24, 2019 at http://www.npc.gov.cn/npc/xinwen/2017-11/04/content_2031446.htm

147 PRC Standardization Administration [国家标准化管理委员会] official website, accessed on January 24, 2019 at <http://www.sac.gov.cn/> (Text: 国家市场监督管理总局对外保留国家标准化管理委员会牌子。以国家标准化管理委员会名义，下达国家标准计划，批准发布国家标准，审议并发布标准化政策、管理制度、规划、公告等重要文件；开展强制性国家标准对外通报；协调、指导和监督行业、地方、团体、企业标准工作；代表国家参加国际标准化组织、国际电工委员会和其他国际或区域性标准化组织；承担有关国际合作协议签署工作；承担国务院标准化协调机制日常工作。)

148 “Harmonization of Standards for Jointly Constructing ‘One Belt and One Road’ Action Plan (2018-2020) [标准联通共建“一带一路”行动计划（2018-2020年）],” PRC Standardization Administration [国家标准化管理委员会] rehosted on the official website of the State Council Information Office of the PRC, (December 22, 2017), accessed on January 24, 2019 at <http://www.scio.gov.cn/xwfbh/xwfbh/wqfbh/37601/39274/xgzc39280/Document/1641459/1641459.htm>

149 “Harmonization of Standards for Jointly Constructing ‘One Belt and One Road’ Action Plan (2018-2020) Announced [标准联通共建“一带一路”行动计划（2018-2020年）发布],” General Administration of Quality Supervision, Inspection and Quarantine of the PRC (AQSIQ [国家质量监督检验检疫总局] rehosted on the website of the Hubei provincial Administration of Quality Supervision, Inspection and Quarantine [湖北质量网], (January 11, 2018), accessed on January 25, 2019 at <http://hbwzlw.cnhubei.com/jryw/201801/t4059297.shtml>

Appendix C (Continued)

DECEMBER 2017:	Beijing secures agreements from at least six countries—Laos, Saudi Arabia, Serbia, Thailand, Turkey, and United Arab Emirates—to promote international standardization cooperation relating to broadband access and quality, e-commerce, technological skills training, and information and communications technology investment promotion. ¹⁵⁰
AUGUST 2018:	The State Council issues “Guiding Opinion on Strengthening Standardization Work in Nuclear Power”. ¹⁵¹ The “Opinion” stipulates that by 2022, the proportion of domestic PRC nuclear power projects adopting indigenous nuclear power standards will be greatly increased, the international influence of China’s nuclear power standards will be greatly enhanced, and the degree of foreign recognition will be significantly improved.
AUGUST 2018:	Beijing Chaoyang District participates in the Action Plan II “National Standard Foreign Languages Program” which aims to promote the international recognition of the PRC’s technical standards through translation of those standards into foreign languages. ¹⁵²
AUGUST 2018:	“The Shaanxi Province leading group office for promotion “OBOR” construction and the Shaanxi Provincial Quality Supervision Bureau jointly issued the “Joint Harmonization of Standards for ‘One Belt, One Road’ Action Plan of Shaanxi Province (2018-2020)” to deploy six major areas of cooperation, to include: application of Chinese standards overseas, promotion of international production capacity collaboration, improvement of scientific and technological innovation capabilities, assistance in the development of cultural tourism, improvement of the development capabilities of standardized services, and strengthening of policy support. ^{153 154}
SEPTEMBER 2018:	Zhejiang province publishes and implements “Joint Harmonization of Standards for ‘One Belt, One Road’ Action Plan of Zhejiang Province (2018-2020).” ¹⁵⁵ The Zhejiang Provincial Government, under direction from the NDRC National Internet Information Office, established the Digital (Online) Silk Road International Industrial Alliance [“DSR Industrial Alliance;” 数字(网上) 丝绸之路国际产业联盟]. ¹⁵⁶

150 “7 countries jointly agreed to initiate a new chapter in ‘Digital Silk Road’ cooperation [7国共同发起倡议开启“数字丝绸之路”合作新篇章], Xinhua News [新华社], (December 3, 2017), accessed on December 17, 2018 at http://www.xinhuanet.com/world/2017-12/03/c_1122050732.htm

151 “Office of the State Council Guiding Opinion on Strengthening Standardization Work in Nuclear Power [国务院办公厅关于加强核电标准化工作的指导意见 国办发〔2018〕71号],” Official Website of the Government of the PRC, accessed on January 25, 2019 at http://www.gov.cn/zhengce/content/2018-08/09/content_5312785.htm

152 “Chaoyang District actively participates in the foreign language work for “Harmonization of Standards for Jointly Constructing ‘One Belt and One Road’ Action Plan” [朝阳区积极参与国家标准外文版工作助力标准联通共建“一带一路”。],” Beijing Municipal Government Information Publicity Webpage [北京市政府信息公开专栏], (undated), accessed on January 25, 2019 at http://zfxgk.beijing.gov.cn/11E028/zwxw52j/2018-08/24/content_2ffd43229fc04d8eb073509e0669e699.shtml

153 “XISU participates in the “Joint Harmonization of Standards for ‘One Belt, One Road’ Action Plan of Shaanxi Province [我校参与陕西省标准联通共建“一带一路”行动计划],” Xi’an International Studies University (XISU [西安外国语大学], (August 15, 2018), observed 24 January 2019 at root URL <http://www.xisu.edu.cn>

154 For the full text of the Shaanxi document, see: “Going Out” Public Service Platform: “Joint Harmonization of Standards for ‘One Belt, One Road’ Action Plan of Shaanxi Province (2018-2020) [陕西省标准联通共建“一带一路”行动计划 (2018-2020年)],” Ministry of Commerce (MOFCOM), (August 15, 2018), accessed on January 25, 2019 at <http://fec.mofcom.gov.cn/article/fwydy/zgzx/201808/20180802775740.shtml> and <http://www.chinagove.com/news/17/2018/0815/19705.html>

155 “Joint Harmonization of Standards for ‘One Belt, One Road’ Action Plan of Zhejiang Province (2018-2020) [《浙江省标准联通共建“一带一路”行动计划 (2018-2020年) 》发布实施],” Zhejiang Provincial Development and Reform Commission, (September 7, 2018), accessed on January 25, 2019 at http://www.zjdp.gov.cn/art/2018/9/7/art_719_1749049.html

156 “Digital Economy and Digital Silk Road International Conference Propose Joining Hands to Construct Digital Silk Road [数字经济暨数字丝绸之路国际会议提出携手共建数字丝路],” General Office of the Zhejiang Provincial Government website, (September 19, 2018), accessed on January 2, 2019 at http://www.zj.gov.cn/art/2018/9/19/art_41146_2291184.html (Original text: 推动数字经济发展和数字丝绸之路建设为核心目标，推进“一带一路”倡议下沿线国家之间的数字经济务实合作)

Appendix C (Continued)

NOVEMBER 2018:

The Science and Technology Department of the Ministry of Industry and Information Technology (MIIT)—aiming to export PRC technological standards in ICT, cybersecurity, AI, robotics, smart technologies and applications, as well as new energy technologies and explosives, and “industrial communications”—issues implementation guidance for the 2018-2020 standards action plan in support of OBOR, entitled: “Implementation Opinions of the Ministry of Industry and Information Technology on the Harmonization of Industrial Communication Industry Standards in Service of Construction of the “Belt and Road.”¹⁵⁷

¹⁵⁷ See “industrial communications” implementation guidance for the 2018-2020 standards action plan in support of OBOR issued by the Science and Technology Department of the Ministry of Industry and Information Technology (MIIT): “Implementation Opinions of the Ministry of Industry and Information Technology on the Harmonization of Industrial Communication Industry Standards in Service of Construction of the “Belt and Road” [工业和信息化部关于工业通信业标准化工作服务于“一带一路”建设的实施意见].” Key Work [重点工作] webpage of MIIT’s official website, (November 12, 2018), accessed on January 10, 2019 at <http://www.miit.gov.cn/n1146290/n4388791/c6480447/content.html>

Appendix D

Timeline of Selected DSR-Related Events and Announcements

MARCH 2015:	NDRC-MOFA-MOFCOM joint document entitled “Vision and Action to Promote the Construction of the Silk Road Economic Belt and the 21st Century Maritime Silk Road” ¹⁵⁸ calls for “jointly promoting the construction of communication trunk networks such as cross-border optical cables to improve international communication, interoperability level, and a smooth ‘Online Silk Road.’”
MARCH 2015:	PRC’s 2015 OBOR White Paper calls for the “construction of cross-border optical cables and other communications trunk line networks” and improving satellite information passageways to create an “Information Silk Road.” ¹⁵⁹
JULY 2015:	Then-Deputy Director of the Cyberspace Administration of China [国家互联网信息办公室] Ren Xianliang ¹⁶⁰ [任贤良] notes at the 15th China Internet Media Forum that many of the PRC’s OBOR partners face challenges in moving traditional industries into the 21st century. Ren said that by addressing these technological gaps, Beijing is effectively accelerating the integration of Internet of Things (IoT), big data, satellite communications, fiber optic cables, and cloud computing across OBOR countries and beyond. ¹⁶¹
SEPTEMBER 2015:	CAC’s then-chairman Lu Wei [鲁炜] at the China-ASEAN Information Harbor Forum notes the increasing importance and power of digital economy to China’s growth. ¹⁶² Plans and accomplishments listed by Lu and others at the 2015 Forum include deepening of cyberspace cooperation and development with ASEAN, a special PRC government fund for internet and telecommunications infrastructure to link China to ASEAN, PRC-ASEAN talks on an upgraded version of the China-ASEAN Free Trade Area, and China Unicom’s construction of an overseas submarine cable link with Myanmar. ¹⁶³
SEPTEMBER 2015:	Deutsche Telekom press release announces Huawei partnership with Deutsche Telekom and touts project’s role in advancing DSR links. ¹⁶⁴

158 “Vision and Action on Jointly Building the Silk Road Economic Belt and 21st-Century Maritime Silk Road [推动共建丝绸之路经济带和21世纪海上丝绸之路的愿景与行动],” NDRC [国家发展和改革委员会], MOFA [外交部], MOFCOM [商务部], issued by the State Council [经国务院授权发布], (March 2015), accessed on January 14, 2018 at <http://www.mofcom.gov.cn/article/i/dxfw/jlyd/201601/20160101243342.shtml>

159 “Vision and Actions on Jointly Building Silk Road Economic Belt and 21-st Century Maritime Silk Road,” National Development and Reform Commission website, (March 28, 2015), accessed on December 31, 2018 at http://en.ndrc.gov.cn/newsrelease/201503/t20150330_669367.html

160 As of July 2017, Ren Xianliang is concurrently the Deputy Director of the Office of the Central Cyberspace Affairs Commission and Deputy Director of the National Internet Information Office under the Cyberspace Administration of China (CAC). For more information, see: “Ren Xianliang: Resume” [任贤良: 简历], Cyberspace Administration of China [中华人民共和国国家互联网信息办公室], (undated), accessed on December 3, 2018 at http://www.cac.gov.cn/bgs_rxl1.htm

161 “One Belt, One Road, Network First—The 15th China Internet Media Forum [一带一路·网络先行——第15届中国网络媒体论坛举行],” Xinhua News [新华网], (July 17, 2017), accessed on December 3, 2018 at http://www.xinhuanet.com/zgjx/2015-07/17/c_134421066.htm

162 “China-ASEAN Information Harbor Forum September 13-14, 2015” China Daily, (September 2015), accessed on December 11, 2018 at <http://www.chinadaily.com.cn/business/informationharbor/index.html>

163 “China-ASEAN Information Harbor Forum September 13-14, 2015” China Daily, (September 2015), accessed on December 11, 2018 at <http://www.chinadaily.com.cn/business/informationharbor/index.html>

164 “Huawei and Deutsche Telekom work on “Digital Silk Road,” Deutsche Telekom website, (September 14, 2015), accessed on January 14, 2019 at <https://www.telekom.com/en/media/media-information/archive/huawei-and-deutsche-telekom-work-on--digital-silk-road--362052>

Appendix D (Continued)

MARCH 2016:	PRC's 13th Five-Year Plan [十三五计划] outlines specific priorities for building and improving fiber optic networks and global telecommunications services, accelerating the deployment of PRC-built satellites, and promoting the development and application of next-generation information technologies (IT) such as fifth-generation (5G) mobile communications, cloud computing, autonomous operating systems, and artificial intelligence (AI). ¹⁶⁵
MARCH 2016:	Huawei press release announcing partnership with Finland's Cinia touts project's role in advancing DSR links. ¹⁶⁶
MARCH 2016:	Kuang-Chi Group connected HyalRoute Communications Group (HyalRoute; 海容通信集团) ¹⁶⁷ , a leading provider of ICT infrastructure in Asia Pacific, initiates agreements leading to construction and operation of nationwide fiber optic networks in both Myanmar and Cambodia. ¹⁶⁸
APRIL 2016:	UNESCAP and China signed the "Intention Letter of the Ministry of Foreign Affairs of the People's Republic of China and the UN Economic and Social Commission for the Promotion of Regional Interconnection and the 'Belt and Road Initiative'" (the first "One Belt, One Road" cooperation document signed by China and international organizations). ¹⁶⁹
AUGUST 2016:	China Unicom unveiled its Global Center in Hong Kong, the first and largest overseas integrated telecommunications facility to function "as an important information infrastructure hub of 'One Belt, One Road'." ¹⁷⁰
DECEMBER 2016:	ZTE acquired a 48% stake in Turkish ICT systems integrator and software solutions firm Netas Telecommunications, a major architect of Turkey's digital future. ¹⁷¹

165 Section 25 of "Outline of the Thirteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China [中华人民共和国国民经济和社会发展第十三个五年规划纲要]", State Council of the People's Republic of China [中华人民共和国国务院], (March 17, 2016), accessed on November 30, 2018 at http://www.gov.cn/xinwen/2016-03/17/content_5054992.htm

166 "Huawei and Deutsche Telekom work on "Digital Silk Road," Deutsche Telekom website, (September 14, 2015), accessed on January 14, 2019 at <https://www.telekom.com/en/media/media-information/archive/huawei-and-deutsche-telekom-work-on--digital-silk-road--362052>; and "Cinia selects Huawei to Build Direct Digital Silk Road between Asia and Europe," Huawei website, (March 16, 2016), accessed on January 14, 2019 at <https://carrier.huawei.com/en/relevant-information/all-cloud-network/build-direct-digital-silk-road>

167 HyalRoute is a member of Shenzhen-based Kuang-Chi Group's "Global Community of Innovation." A military-civil fusion enterprise, Kuang-Chi supports PLA RD&A programs, including programs on stealth materials and near space ISR.

168 "Cambodia grants rights to Chinese firm to build submarine cables, landing station," People's Daily, (March 2, 2016), accessed on January 25, 2019 at <http://en.people.cn/n3/2016/0302/c90883-9024154.html>; and "Government signs \$70m deal for submarine internet cable," The Cambodian Daily, (March 3, 2016), accessed on January 25, 2019 at <https://www.cambodiadaily.com/news/government-signs-70m-deal-for-submarine-internet-cable-109325/>; and "Cambodia signs US\$70 million deal of submarine cable construction," Agence Kampuchea Presse (AKP), (March 4, 2016), accessed on January 25, 2019 at <http://www.akp.gov.kh/wp-content/uploads/wp-post-to-pdf-cache/1/cambodia-signs-us70-million-deal-of-submarine-cable-construction.pdf>; and "World Bank's MIGA backs \$100m, 4,500km fibre optic rollout," Frontier Myanmar, (January 31, 2017), accessed on January 25, 2019 at <https://frontiermyanmar.net/en/world-banks-miga-backs-100m-4500km-fibre-optic-rollout/>; and "HyalRoute Fiber Optic Cable Network," Private Participation in Infrastructure Database," The World Bank, (2017), accessed on January 25, 2019 at <https://ppi.worldbank.org/snapshots/project/HyalRoute-Fiber-Optic-Cable-Network-9164>

169 "Do you know the major policies of the 'Belt and Road'? [一带一路这些重大政策你知道吗?], One Belt One Road Net [一带一路网] rehosted on a "China SKU Center" website, (May 22, 2017), accessed on January 24, 2019 at <http://www.ebrun.com/20170522/231917.shtml>

170 "China Unicom (Hong Kong) Global Center Grand Opening," China Unicom website, (August 16, 2016), accessed on January 14, 2019 at <http://www.chinaunicom.com.sg/news-detail/7/>

171 "ZTE to acquire 48% stake in Netas to support growth in Turkey and Eurasia," ZTE website, (December 6, 2016), accessed January 15, 2019 at <https://www.zte.com.cn/global/about/press-center/news/20180600001/20180714-0803/201612ma/1206>

Appendix D (Continued)

<p>JANUARY 2017:</p>	<p>MIIT China Academy of Information and Communications Technology (CAICT) report pronounces that the first priority of DSR construction is to solve the problem of infrastructure connectivity.¹⁷² The first steps are: 1) open the “Belt and Road” information channel, connecting the land information channels of Pakistan, Myanmar and other countries to the Indian Ocean and Russia to Central and Eastern Europe and 2) promote the construction of submarine cables for the Americas, Europe, Southeast Asia and Africa, and improve the maritime information channel; 3) encourage enterprises to deploy application facilities such as data centers and cloud computing platforms in the node cities along the “Belt and Road”. The second step is to accelerate the internationalization of the Beidou satellite navigation system and its application industry in conjunction with the “Belt and Road” countries, improve several Beidou overseas application demonstration projects, and enhance the international service capabilities of Beidou Navigation.”</p>
<p>APRIL 2017:</p>	<p>Alibaba promotes the construction of the DSR through its “Global E-Commerce Platform” (eWTP), which has been launched in Kuala Lumpur and Hangzhou, as well as expansion of its logistics capabilities across OBOR countries.¹⁷³</p>
<p>APRIL 2017:</p>	<p>PRC telecom ZTE publicizes smart city project in Bangladesh.¹⁷⁴</p>
<p>APRIL 2017:</p>	<p>China Telecom [中国电信集团有限公司] plans to invest at least \$1 billion over the next 3-5 years to construct a major regional information highway interconnecting OBOR countries. This effort will focus on implementing three regional strategies, the Greater Eurasia Strategy [大欧亚战略], New Mekong River Strategy [新湄公河战略], and New Africa Strategy [新非洲战略], as well as four key pilot projects.^{175 176 177 178}</p>

172 “Create ‘Online Silk Road’ and Promote the Development of ‘One Belt, One Road’——Part Four of the Interpretation of ‘The National Informatization Plan of the 13th Five-Year Plan’ [打造“网上丝绸之路”，推进“一带一路”发展——《“十三五”国家信息化规划》解读之四],” Website of the China Academy of Information and Communications Technology (CAICT) of the Ministry of Industry and Information Technology (MIIT), (January 5, 2017), accessed on January 7, 2019 at http://www.caict.ac.cn/kxyj/caictgd/201804/t20180428_159428.htm

173 “Alibaba promotes the construction of the ‘Digital Silk Road’ [阿里巴巴推广建设“数字丝绸之路”], Xinhua News [新华社], (April 18, 2017), accessed on December 17, 2018 at http://www.xinhuanet.com/world/2017-04/18/c_1120832453.htm

174 Zhang Ying, “Transforming Dhaka into a Smart City,” ZTE website, (undated), accessed on January 15, 2019 at https://www.zte.com.cn/global/about/magazine/zte-technologies/2017/4/en_737/464727

175 “China Telecom’s “One Belt, One Road” Plan: Investing \$1 billion to Build Information Silk Road [中国电信“一带一路”规划：投入10亿美元打造“信息丝路”],” People’s Daily website, (April 26, 2017), accessed on January 9, 2019 at <http://tc.people.com.cn/n1/2017/0426/c183008-29237851.html>; and “China Telecom Practices One Belt, One Road: Global Layout and Construction of the Information Silk Road [中国电信践行“一带一路”倡议：全球布局建设“信息丝路”],” China Telecom website, (May 11, 2017), accessed on January 9, 2019 at http://www.chinatelecom.com.cn/news/06/ydyj/xw/201706/t20170621_33927.html

176 “China Telecom’s “One Belt, One Road” Plan: Investing \$1 billion to Build Information Silk Road [中国电信“一带一路”规划：投入10亿美元打造“信息丝路”],” People’s Daily website, (April 26, 2017), accessed on January 9, 2019 at <http://tc.people.com.cn/n1/2017/0426/c183008-29237851.html>; and “China Telecom Practices One Belt, One Road: Global Layout and Construction of the Information Silk Road [中国电信践行“一带一路”倡议：全球布局建设“信息丝路”],” China Telecom website, (May 11, 2017), accessed on January 9, 2019 at http://www.chinatelecom.com.cn/news/06/ydyj/xw/201706/t20170621_33927.html (Original text: 其目标是通过打通关键战略通道，开发国家信息化、智慧城市项目，成为欧亚信息沟通的主导者，完成欧亚信息丝绸之路建设). Plans to construct a Eurasian Information Silk Road appear to have been outlined by China Telecom around 2006, when it set up China Telecom (Europe) Co. in London. The Eurasian Information Silk Road includes the Euro-Asia Network Solution consisting of six fiber optic terrestrial cables and interconnected POPs from Asia to Europe. The land line was constructed in cooperation with Russian telecom operators. See: “Euro-Asia Network Solution,” China Telecom Europe website, (undated), accessed on January 10, 2019 at http://cteuropa.net/wp-content/uploads/ChinaTelecom_Euro-Asia-network-solution.pdf; and Sun Yaping, “Building the Eurasian Information Silk Road [构建欧亚信息丝绸之路],” China Radio International website, (October 17, 2011), accessed on January 10, 2019 at <http://news.cri.cn/gb/27824/2011/10/17/110s3404654.htm>

177 “China Telecom’s “One Belt, One Road” Plan: Investing \$1 billion to Build Information Silk Road [中国电信“一带一路”规划：投入10亿美元打造“信息丝路”],” People’s Daily website, (April 26, 2017), accessed on January 9, 2019 at <http://tc.people.com.cn/n1/2017/0426/c183008-29237851.html>; and “China Telecom Practices One Belt, One Road: Global Layout and Construction of the Information Silk Road [中国电信践行“一带一路”倡议：全球布局建设“信息丝路”],” China Telecom website, (May 11, 2017), accessed on January 9, 2019 at http://www.chinatelecom.com.cn/news/06/ydyj/xw/201706/t20170621_33927.html (Original text: 其目标是通过构建泛亚信息网络，开发智慧及信息化项目机会，实施跨境信息运营，争当湄公河区域信息社会的共建者)

178 “China Telecom’s “One Belt, One Road” Plan: Investing \$1 billion to Build Information Silk Road [中国电信“一带一路”规划：投入10亿美元打造“信息丝路”],” People’s Daily website, (April 26, 2017), accessed on January 9, 2019 at <http://tc.people.com.cn/n1/2017/0426/c183008-29237851.html>; and “China Telecom Practices One Belt, One Road: Global Layout and Construction of the Information Silk Road [中国电信践行“一带一路”倡议：全球布局建设“信息丝路”],” China Telecom website, (May 11, 2017), accessed on January 9, 2019 at http://www.chinatelecom.com.cn/news/06/ydyj/xw/201706/t20170621_33927.html (Original text: 其目标是通过构建泛亚信息网络，开发智慧及信息化项目机会，实施跨境信息运营，争当湄公河区域信息社会的共建者)

Appendix D (Continued)

APRIL 2017:	China Mobile announces that it lowered roaming charges for OBOR countries, which would “facilitate Chinese enterprises’ investment and construction along the Belt and Road.” ¹⁷⁹
MAY 2017:	China Mobile describes its role in the construction of telecommunications infrastructure and cross-border land and submarine fiber optic cables, as well as its acquisition of telecommunications companies in Pakistan and Thailand to highlight its efforts towards creating an “information and economic corridor.” ¹⁸⁰
MAY 2017:	ZTE’s and Huawei’s construction of fiber optic cables in Pakistan and Afghanistan publicized. ¹⁸¹
MAY 2017:	Joint communique from the “Belt and Road Forum” calls for promoting digital infrastructure connecting OBOR countries to “put in place an international infrastructure network over time.” ¹⁸²
MAY 2017:	PRC undersea technology equipment and defense contractor Zhongtian Technology Submarine Cable Co. (“ZTT”; 中天科技海缆有限公司) ¹⁸³ —which has participated in the construction of all underwater observation networks in China and specializes in underwater network design, equipment manufacturing, construction and maintenance—touts its contribution to Military-Civil Fusion (MCF) objectives.” ¹⁸⁴
JULY 2017:	CPC General Secretary Xi Jinping during a visit to Moscow said that China and Russia are actively promoting construction of “One Belt, One Road” in cooperation with the Eurasian Economic Union, and that the two sides will jointly develop and utilize Arctic waterways to create an “Ice Silk Road [冰上丝绸之路].” ¹⁸⁵
JULY 2017:	DSR appeared prominently in the 15th China Online Media Forum keynote presentation in Zhanjiang. ¹⁸⁶
NOVEMBER 2017:	Inspur Group, a PRC cloud computing and big data services provider, along with Cisco, IBM, Diebold Nixdorf, and Ericsson, formed the “One Belt, One Road” Digital Economy Strategic Alliance [“一带一路”数字化经济战略联盟] in the Inspur Jinan Science and Technology Park. ¹⁸⁷

179 Meng Jie, “China Mobile to cut roaming charges along Belt and Road,” Xinhua News, (April 26, 2017), accessed January 14, 2019 at http://www.xinhuanet.com/english/2017-04/26/c_136238169.htm

180 “Briefing on China Mobile’s Participation in Jointly Building the “Belt and Road,” China Mobile Communications Corporation, (May 8, 2017), accessed on December 17, 2018 at http://www.china.com.cn/zhibo/zhuantu/ch-xinwen/2017-05/08/content_40767089.htm

181 “Afghanistan and China Sign Optic Fiber Agreement,” Regional Economic Cooperation Conference of Afghanistan website, (April 26, 2017), accessed January 15, 2019 at <http://recca.af/?p=2387>; and “ZTE Broadens Digital Silk Road [中兴通讯拓宽“数字丝路”],” People’s Daily, (May 18, 2017), accessed January 15, 2019 at http://paper.people.com.cn/.../nw.D110000renmrb_20170518_3-13.htm

182 “Full text: Joint communique of leaders roundtable of Belt and Road forum,” Xinhua News, (May 15, 2017), accessed on December 31, 2018 at http://www.xinhuanet.com/english/2017-05/15/c_136286378.htm

183 ZTT is a National Torch Program key high-tech enterprise [国家火炬计划重点高新技术企业] located in the national level Nantong Economic and Technology Development Zone. It also leads the 863 Programs on deep sea ROVs [深海ROV] and armored cables [铠装缆]. See company website at: <http://zthl.chinaztt.cn/>

184 “Zhongtian Technology advances into the 10,000-meter deep-sea area [中天科技向万米级海域进军],” Official website of “Communication Industry News” [通信产业报社], a publication managed by the Ministry of Industry and Information Technology (MIIT), (May 19, 2017), accessed on January 9, 2019 at <http://www.ccidcom.com/company/20170519/yW3WLEFRayB7zkn7y14w6vmp6cfn8.html>

185 “July 4, 2017: Xi Jinping: Creating the “Ice Silk Road [2017年7月4日：习近平：打造“冰上丝绸之路”],” Belt and Road Portal, (July 4, 2017), accessed on January 14, 2019 at <https://www.yidaiyilu.gov.cn/slxwzy/20751.htm>. (Original text: 习近平表示，中俄两国正在积极推进“一带一路”建设同欧亚经济联盟对接合作。在对接合作框架内，双方正在积极商谈中国同欧亚经济联盟经贸合作协议和对接合作项目清单。希望双方共同开发和利用海上通道特别是北极航道，打造“冰上丝绸之路”)

186 “Ren Xianliang delivered a keynote speech: Building a ‘Digital Silk Road’ [任贤良发表主旨演讲：共建“数字丝绸之路”],” China Daily [中国日报], (July 17, 2015), accessed on December 17, 2018 at http://forum2015.chinadaily.com.cn/2015-07/17/content_21308339.htm

187 Li Ruan, “One Belt, One Road” Digital Economy Strategic Alliance Established [“一带一路”数字化经济战略联盟成立],” China Securities Journal website, (November 2, 2017), accessed on January 8, 2019 at http://cs.com.cn/xwzx/201711/t20171102_5550065.html; and “Lu Wei Attends One Belt, One Road Digital Economy Strategic Alliance Establishment Ceremony [吕伟出席一带一路数字化经济战略联盟成立仪式],” Ministry of Commerce website, (November 3, 2017), accessed on January 8, 2019 at <http://www.mofcom.gov.cn/article/difang/201711/20171102665974.shtml>

Appendix D (Continued)

FEBRUARY 2018:	"Xinhua Silkroad"—an OBOR-focused website managed by the PRC's official wire service Xinhua—publicizes that DSR is also driving PRC expansion into the Arctic in a report rehosted from the "Australian Roy International Policy Institute." ¹⁸⁸
MARCH 2018:	Ministry of Finance-controlled CITIC Group [中信集团] acquires Netherlands-based Linx Telecommunications becoming "one of the first Asian ICT service provider to own PoPs with extensive coverage in countries along with "One Belt One Road" route" providing "a first-mover advantage in "Digital Silk Road"" and foundation for seizing opportunities in Russia, Eastern Europe, and Central Asia. ¹⁸⁹
JUNE 2018:	NDRC's International Cooperation Center (ICC) Director Huang Yong (黄勇) in June 2018 gave the keynote address at the China Urban Credit Construction Summit in Fuzhou where he discussed the significance of the ICC's Foreign Credit Identification System [外商信用识别系统], a big data platform that may allow the PRC government to assign credit ratings to foreign businesses based on their willingness to abide by PRC law. He noted that this system, alongside other PRC-built social credit monitoring systems, will gradually be applied to OBOR projects to assist both PRC and international organizations in assessing risk. ¹⁹⁰
JUNE 2018:	MOFCOM's China Service Trade Guidance Network in June 2018 released the first cross-border e-commerce innovation research report in Hangzhou, demonstrating the positive impacts and developments in China's e-commerce industry. According to MOFCOM, Hangzhou's foreign e-commerce transactions increased by 23.8% from January to May of 2018. ¹⁹¹
SEPTEMBER 2018:	NDRC and China Development Bank announce the signing of the "Comprehensive Support for Developing the Digital Economy and Developmental Finance Cooperation Agreement" [全面支持数字经济发展开发性金融合作协议] pledging over RMB 100 billion (\$14.57 billion) in investment over the next five years to support big data, IoT, cloud computing, construction of new smart cities, and overall construction of the digital silk road. ¹⁹²
SEPTEMBER 2018:	Alibaba announces stepped up efforts in Russia, announcing the formation of a new social commerce joint venture with The Russian Direct Investment Fund—Russia's sovereign wealth fund—MegaFon, and Mail.Ru to accelerate Russia's digital economy. ¹⁹³

188 "Arctic submarine cable to build data 'Silk Road' [北极海底光缆搭建数据"丝绸之路"], Xinhua Silkroad (新华丝路, an OBOR-focused website managed by the PRC's official wire service Xinhua) attributed to the Australian Roy International Policy Institute, (February 7, 2018), accessed on January 7, 2019 at <http://silkroad.news.cn/2018/0207/83602.shtml>

189 "Annual Report 2017," CITIC Telecommunications International Holdings Limits, Hong Kong Stock Exchange, (March 28, 2018), accessed on January 13, 2019 at <http://www3.hkexnews.hk/listedco/listconews/SEHK/2018/0328/LTN20180328660.pdf>. Following the acquisition, Linx Telecommunications was consolidated into CPC Europe Group whose virtual private network services, TrueCONNECT MPLS VPN covers more than 130 countries and regions.

190 "Constructing a new pattern of 'Belt and Road' credit work to create a digital silk road for the new era [构建"一带一路"信用工作新格局 打造新时代数字丝绸之路]," International Cooperation Center [国际合作中心], (June 11, 2018), accessed on December 12, 2018 at http://www.icc-ndrc.org.cn/news_detail.jsp?id=600962

191 "The first 'cross-border e-commerce innovation research report' was released in Hangzhou [首个《跨境电子商务创新研究报告》在杭发布]," China Service Trade Guidance Network [中国服务贸易指南网], (June 29, 2018), accessed on December 13, 2018 at <http://tradeinservices.mofcom.gov.cn/article/news/gnxw/201806/64258.html>

192 "NDRC and China Development Bank sign Comprehensive Support for Developing the Digital Economy and Developmental Finance Cooperation Agreement [国家发展和改革委员会与国家开发银行签署《支持数字经济发展开发性金融合作协议》]," PRC State Council website, (September 19, 2018), accessed on January 2, 2019 at http://www.gov.cn/xinwen/2018-09/19/content_5323492.htm

193 "RDIF, Alibaba Group, MegaFon, and Mail.Ru Group Launch New Social Commerce Joint Venture in Russia and the CIS," Megaon website, (September 11, 2018), accessed on January 15, 2019 at https://corp.megaфон.com/investors/news/capital_market_releases/20180911-0936.html

Appendix D (Continued)

<p>SEPTEMBER 2018:</p>	<p>The Zhejiang Provincial Government, under direction from the NDRC National Internet Information Office, established the Digital (Online) Silk Road International Industrial Alliance ["DSR Industrial Alliance;" 数字(网上) 丝绸之路国际产业联盟] to serve as a mechanism for jointly "promoting the development of the digital economy, constructing the digital silk road, and promoting the digital economy between OBOR countries." ¹⁹⁴ To date, more than 40 companies have joined the DSR Industrial Alliance including Alibaba, Tencent, WeChat, iFlytek, Sugon, Inspur, Baidu, Bilibili, China Electronic Technology Group, and Zhejiang Robot Industry Group. ¹⁹⁵</p>
<p>NOVEMBER 2018:</p>	<p>MIIT S&T Department issues implementation guidance for the 2018-2020 standards action plan in support of OBOR. ¹⁹⁶</p>
<p>NOVEMBER 2018:</p>	<p>MIIT China Academy of Information and Communications Technology (CAICT) senior researchers propose actions to accelerate the "going out" of PRC ICT firms and construction of the digital silk road. ¹⁹⁷</p>
<p>DECEMBER 2018:</p>	<p>China-Europe Digital Association (ChinaEU; 中欧数字协会) Chairman Lu Yiji (鲁乙己) stressed that China and the European Union (EU) must collaborate to promote the development of next-generation technologies. Mr. Lu highlighted that companies such as Alibaba and Huawei are actively seeking new markets in Europe. ¹⁹⁸</p>

194 "Digital Economy and Digital Silk Road International Conference Propose Joining Hands to Construct Digital Silk Road [数字经济暨数字丝绸之路国际会议提出携手共建数字丝路]" General Office of the Zhejiang Provincial Government website, (September 19, 2018), accessed on January 2, 2019 at http://www.zj.gov.cn/art/2018/9/19/art_41146_2291184.html (Original text: 推动数字经济发展和数字丝绸之路建设为核心目标, 推进“一带一路”倡议下沿线国家之间的数字经济务实合作)

195 "Digital Economy and Digital Silk Road International Conference Propose Joining Hands to Construct Digital Silk Road [数字经济暨数字丝绸之路国际会议提出携手共建数字丝路]" General Office of the Zhejiang Provincial Government website, (September 19, 2018), accessed on January 2, 2019 at http://www.zj.gov.cn/art/2018/9/19/art_41146_2291184.html (Original text: 推动数字经济发展和数字丝绸之路建设为核心目标, 推进“一带一路”倡议下沿线国家之间的数字经济务实合作)

Also, see: and "Zhejiang Robot Industry Group invited to be founding member of the Digital (Online) Silk Road International Industrial Alliance [浙江机器人产业集团应邀成为数字(网上) 丝绸之路国际产业联盟创始成员单位]," Guangxi Tus-Holding Co. website, (September 21, 2018), accessed on January 2, 2019 at <http://www.gxtxcity.com/news/group/20180921652.html>

196 See "industrial communications" implementation guidance for the 2018-2020 standards action plan in support of OBOR issued by the Science and Technology Department of the Ministry of Industry and Information Technology (MIIT): "Implementation Opinions of the Ministry of Industry and Information Technology on the Harmonization of Industrial Communication Industry Standards in Service of Construction of the "Belt and Road" [工业和信息化部关于工业通信业标准化工作服务于“一带一路”建设的实施意见]" Key Work [重点工作] webpage of MIIT's official website, (November 12, 2018), accessed on January 10, 2019 at <http://www.miit.gov.cn/n1146290/n4388791/c6480447/content.html>

197 Chen Hui and Dong Jianjun, "Accelerating the Promotion of the One Belt, One Road Information and Communication Industry Going Out [加快推进“一带一路”信息通信业走出去]," CAICT website, (November 14, 2018), accessed on January 9, 2018 at http://www.caict.ac.cn/kxyj/caictgd/201811/t20181114_188712.htm

198 "People from all walks of life in China and Italy: The Sino-Italian 'Digital Silk Road' has broad prospects for construction [中意各国人士: 中意“数字丝绸之路”建设前景广阔]," Economic Daily [经济日报], (October 30, 2017), accessed on December 12, 2018 at <https://www.yidaiyilu.gov.cn/xwzx/hwxw/32098.htm>; and "The Embassy in Italy hosted the 'Silk Road Digital Interconnection' Round Table [驻意大利使馆举办“丝绸之路·数字互联互通”院周会]," Ministry of Foreign Affairs of the People's Republic of China [中华人民共和国外交部], (October 26, 2017), accessed on December 12, 2018 at https://www.fmprc.gov.cn/web/zwbdt_673032/gzhd_673042/t1504740.shtml