AN ASSESSMENT OF THE DIGITAL BELT AND ROAD INITIATIVE

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ABSTRACT

This paper examines the Chinese "Digital Belt and Road Initiative (DBRI)" as a policy that deals with greater investment in infrastructure from the Chinese investors which should go to the energy and transportation sectors and only a very small share to the information and communication technologies (ICT) sector. The paper used secondary sources of qualitative data and argues that if Chinese companies are building roads and other infrastructures and also providing digital services in the belt and road region is not anything to be celebrated hence it is a capitalist strategy meant to achieve economic patronage for greater economic pay off. This submission is different from the argument of most previous studies which are proponents of the program. This contrary view is different from the belief that the DBRI program uses a big Earth data approach that is made possible by the cloud-based implementation of data analysis and information extraction. To the proponents of the program, the DBRI, advanced data infrastructure has to be developed with links to other related data platforms of international organizations and programs, to optimize data, information, expertise, and knowledge brokered within the DBRI infrastructure. Even though few other studies have a permissive view about the DBRI as a capitalist strategy, many other studies submit that the program is all about improvement and harmonization of national data policies towards free access to both in-situ and space borne data is be promoted in the belt region, through governments, institutions, universities, and even the private sectors need to be strongly encouraged through their active collaboration with the DBRI program. While scholars have divergent view about the program, the proponents of the program are committed to it implementation and the countries in belt region are saddled with the option of choosing between the alternatives since foreign policy is all about the ability of competing policy options. The economic weakness of the Belt and Road region invariably forms the source of economic and prosperity for the promoters of the DBRI, hence foreign policy is driven by national interest.
Keywords: China, Digital, Belt, Road, Initiative, capitalism and interest.

INTRODUCTION

There is no gain saying that developing countries in the indo-pacific region are unquestionably in dire need of infrastructure financing and development. Beijing's Digital Belt and Road Initiative (BRI) has attempted to fill this void, while expanding to encompass space, digital, and health realms. While Chinese leaders proclaim the BRI to be a "win-win" development tool and disavow any underlying strategic goals, these declarations have not entirely assuaged suspicions and concerns in both host countries and other capitals. That is why Asia Society Policy Institute ASPI (2019) argued that while filling a critical void in infrastructure financing and development, DBRI has resulted in numerous projects that are not fiscally, commercially, socially, or environmentally sustainable. The scale and scope of the DBRI are such that even modest improvements in standards and practices could result in significant benefits in project host countries. ASPI (2019) underscored how both international and Chinese best practices and standards in infrastructure development if incorporated would significantly boost the overall sustainability of DBRI projects.

However, China's more muscular and aggressive foreign policy and continued integration of the military and civilian sectors have prompted increasing concerns among project host states and within the international community that there is more than meets the eye when it comes to certain DBRI investments. Washington, Tokyo and other capitals have raised increasing alarm over Beijing's ulterior motives, as well as DBRI projects' dual commercial and military capabilities and their strategic implications. China's rapid military modernization program, the increasing ubiquity and assertiveness of its navy and air force, and its apparently insatiable appetite for ports worldwide have heightened the West's concern about the DBRI's role in China's security strategy. Moreover, the expansion of the DBRI into space through the launch of the Beidou Satellite Network and into the digital realm through the Digital Silk Road raises further questions about how Beijing may use technological features of the DBRI to enhance its influence over recipient states and to gain military advantages as epitomized by Marxist approach to foreign policy. It is in this context that this paper seeks to conduct an examination of the policy, DBRI with specific emphasis in its aims and objectives as well as its pros and cons in foreign policy context.

An Overview of the DBRI program: Aims, vision and Mission

The DBRI program's goal is to develop itself as a platform that will facilitate sharing of advanced technologies and information services across countries for effective application of effective technology for sustainable economic and societal development. The uniqueness of DBRI is its goal of building upon the diverse big Earth data capacities in countries in Asia, Europe, and Africa through a comprehensive and well-funded action. Is to improve environmental monitoring, promote data sharing, and support policy-making using big data on EOs (Jerry, 2017). DBRI will establish an international big Earth data analysis and decision-making system and carry out scientific analysis to better understand the spatial distribution of resources and ecosystems' status and change trends in the region.

(i)**Vision and mission**

The DBRI vision is the promotion of international cooperation that integrates science, data, technology, and applications to address environmental change and attain Sustainable Development Goals in the region. The DBRI mission is to mobilize scientific knowledge, technology, and data to enable less developed countries to sustainably develop their infrastructure, economy, environment, and to support decision-makers towards meeting the SDG goals and targets relevant to countries (Kerry, 2017).

These vision and mission statements call for the DBRI Science Plan to meet the following three objectives in its implementation: (1) to address knowledge gaps in Earth system processes that constrain the attainment of the SDGs in B&R countries; (2) to promote advanced science and decision support services to extract effective information from massive, diverse and ever-growing volumes of big Earth data; and (3) to enhance capacity building and technology transfer within a system of partnerships and research networks (Ochoga,2020).The DBRI program will also compile regional spatial assessment indicators to assess and monitor progress towards the United Nations SDGs.

(ii)**The Aims**

The DBRI Foci are clusters of well-framed research questions relevant to UN SDGs and to countries. The DBRI has identified a set of scientific questions that relate to the research and development challenges across the less developed countries. These challenges are: the adaptation to climate and environment change, mitigation of disaster risk, water availability and security, agriculture and food security, protection of natural and cultural heritage, urban and infrastructure development, management of coastal and marine ecosystems, and sustainable development of high mountains and the Arctic. The DBRI Foci are converted into one big Earth data and eight interconnected science domains, including climate change and environment, natural disaster, water, human activities and related urban areas and infrastructure, heritage, and agriculture, and two key ecosystems, coastal and marine and high mountains and the Arctic, respectively. The big Earth data element is a centralized platform that will draw from community and generate data products and information services to address research and development challenges.

Related to the climate and environment issue, many less developed countries are in fragile environments and, as such, highly vulnerable to climate change. To face this challenge all ecosystem elements, for example, forest or grassland, must be monitored and their evolution accurately and objectively assessed (Henry, 2016). Comprehensive assessments of environmental impacts of major infrastructure development projects and monitoring implementation of mitigation measures should be a necessary condition to enable attaining SDGs. There is indisputable evidence of strong linkages between development, environment and disasters. Sustainable development can reduce pressure on the environment and minimize disasters and their eventual impacts. In return, a well-prepared disaster risk reduction approach and environmental management can reduce the impacts of disasters on development and can make economic growth sustainable (Dutton 2015; UNISDR 2015).

Water is a vital natural resource for human livelihood and for all ecosystems including human influenced ones such as agriculture and cities. It is an important foundation for the sustainable development of economy and

society locally, nationally, regionally, and globally. Assessment of fresh water resources and their effective and sustainable use faces multiple and diverse challenges in the countries in Asia, Europe, and Africa (Menenti and Jia, 2016). The availability of quality water continues to be a major issue for the Earth system and humans, in particular. There is a growing concern that the water available in many regions of the world will not be sufficient to meet emerging demands arising from population growth, industrial expansion, and climate change. Most of the countries along the region have predominantly rural-based economies, in which the agricultural sector accounts for over 25% of their GDP and engages more than 40% of the workforce (Ochoga, 2020). One of the major challenges faced by most food-insecure countries of is the paucity of adequate capacity in accessing up-to-date food security information. Strengthening of information systems not only requires strong technical knowledge, but also demands sustainable long-term financing, as well as human and other resources. A truly global mapping and information service, integrating spatially explicit socioeconomic data with agricultural, forest, and aquaculture data will be feasible, with applications to poverty and food monitoring, international planning, and sustainable development.

Conservation of natural and cultural heritage and their effective integration into improving socio-economic well-being at local, national, regional, and global scales is a necessary condition for sustainable development. Natural and cultural heritage along the B&R region will face significant challenges for conservation and their potential to contribute to sustainable development, particularly in the context of massive infrastructure and economic development projects already underway or foreseen. Urbanization and urban development across the world has profound effects on environment, biodiversity, ecological processes, and regional sustainability. Measuring and understanding the process of urbanization would help the city planners to reduce problems associated with increased urban area and high population densities, and to build sustainable cities. Many of the world's mega cities are found in the B&R countries (UN, 2014).

The twenty-first century Maritime Silk Road strategy facilitates the connectivity between China, Southeast, South and West Asia, the Gulf States, and some eastern coastal nations of Africa. It will address a number of themes such as: marine economy, protection of coastal ecosystems, disaster management, technology innovation, and heritage and tourism development. The high mountains and the Arctic are typical cold earth regions; these regions encompass the Qinghai-Tibet Plateau, Tian Shan, Altai Mountains, Mongolia Plateau, and the far North of Asia. Snow, ice, and permafrost dominate the local environment, transport and travel, water availability, urban and infrastructure development, and impact global climate and regional sustainability. These areas also exhibit strong sensitivity to climate change because they are some of the most fragile ecological regions. Monitoring and assessments are needed to achieve the sustainable development of the planned 'Ice Silk Road' along the northern coast of Russia.

CONCEPTUALIZING THE CHALLENGES

It is well known that the belt and road (B&R) region spans a wide and very diverse spectrum of climate regimes. Environmental change, land degradation, and diminishing ecosystem and wildlife habitats are wide spread and the causes and consequences are only partially understood. In implementing the activities that address the thematic Foci identified by the DBRI Science Plan, it will be challenging to negotiate the geographical scope of projects and actions, and reaching consensus on the balance between research, capacity building, and demonstration

projects that integrate the application of big Earth data into on-going and future infrastructure development projects. As big as DBRI's ambitions are, it is not surprising that many obstacles may stand in the way. There are four main obstacles for the implementation of the DBRI program: a digital divide between developed and developing countries; lack of awareness among some policymakers, local scientists, and practitioners of the potential of EOs; difficulty of data access; and ineffective coordination (Guo, 2018). In what follows, this paper looks briefly at those impediments.

(i)   Digital divide

The scientific community has widely recognized the potential benefit of universal access to scientific data, information, and knowledge towards sustainable development by overcoming the digital divide (Iwata and Chen 2005). Some scientists, particularly in the developing world, struggle to find enough data to discover new knowledge, and decision-makers often lack the necessary information to articulate effective policies. (Gu and Mushi, 2015). While in more developed nations knowledge and acceptance of big Earth data capabilities are widespread and increasingly adopted to support all levels of society, awareness in less developed countries lags behind, potentially delaying or preventing the effective use of big Earth data.

(ii) Lack of awareness

DBRI was conceptualized to realize data-driven regional governance across such a diverse region, one core challenge is the common understanding of the importance of big Earth data and adaptation to an era when big data is a necessary condition for sustainable development. Lacking common awareness of their importance will, first, bring decision-makers to disregard the necessity of an appropriate research infrastructure and capacity building. It will impact policy decisions on investments, talent cultivation, data acquisition, and international cooperation. Second, the lack of such awareness can also hinder scientific researchers and research institutions in exploration of big Earth data research approaches, in terms of technologies and applications (Shu, 2016).

(iii)Difficulty of data access

Regarding data sharing along the B&R, datasets are typically dispersed geographically and owned by various government agencies, research groups, and individuals. Stakeholders often find it difficult, if not impossible, to discover and obtain relevant and appropriate data for addressing and resolving specific problems. Even when they identify the data sources, they may not be able to obtain them due to ownership issues, or the lack of tools to successfully select, transfer, interpret, and use the data to meet their needs (Scott and Rajabifard, 2017).

(iv) Ineffective coordination

Another challenge that remains is the lack of coordinated strategies to encourage collaboration among decision-makers, institutions, data providers, researchers, practitioners, user communities and international organizations providing that coordination would facilitate the convergence of resources and applications of big Earth data to address regional challenges, taking disaster mitigation as an example the region encompassing the B & R experiences about 85% of the world's major natural hazards leading to serious adverse impacts on human

populations and infrastructure (Guo, 2018). Severe limitations in data acquisition and sharing affect the capacity to mitigate the impact of natural disasters in the region. This unfortunate situation was illustrated by the Indian Ocean tsunami in 2004, which caused hundreds of thousands of deaths and untold suffering. The inability to access and process emergency response datasets and capabilities was a glaring problem (Iwata and Chen, 2005).Therefore, gaps in data infrastructure, data sharing, and use must be addressed. Advanced Big Data technologies, such as EO, or the Internet of Things, would unleash the potential of data-driven research, helping especially the developing countries, to improve capacities for addressing challenges for sustainable development. The intent of DBAR is to address these obstacles by demonstrating how science and open access to data, information, and knowledge can make a critical difference for sustainable development by applying 'Big Earth Data.

DISSECTING THE POLICY: AN APPRAISAL

One of the aims of the policy is to facilitate economic growth of the least developed countries and rural areas of middle-income countries. From 2014 to 2015, the annual GDP growth rate was 8.7% in Myanmar, most of which could be attributed to the investment in ICTs (Cheng, 2017). The Thai government is very keen on developing its digital economy and has been aiming to attract Ali baba and Huawei to invest in the EEC. According to Rookie Network Technology Co., Ltd (Fu, 2018), the key Chinese network for smart logistics controlled by Ali baba, it has established a fast track for fresh agricultural products including Durio zibethinus Murr from Thailand to many major cities in China. Huawei established an open lab in Bangkok in June 2017, a collaborative and innovative platform for local customers and entrepreneurs. The total investment of the lab was 15 million USD. In this way Chinese companies are, at the request of a foreign government, facilitating a foreign country to increase its exports to China by integrating it into Chinese marketing mechanisms. Though Ochoga (2020) has reservation on about the impact of the DBRI of which studies such as Cheng (2017) have argued to had facilitated economic growth of the least developed countries and rural areas of middle-income countries. To Ochoga (2020), the impact is like the leper gift.

Another contentious issue regarding the policy is that it has promoted the development of small and medium-sized enterprises (SMEs) in B &R (Fu, 2018). To Fu (2018), Cloud Computing for EZ-Link could or/and has provide(d) timely and useful information about potential customers for more than 50,000 SMEs in Singapore. The first overseas pilot zone of Alibaba for its eWTP was established in Malaysia, and it had attracted over 2,600 SMEs to operate on this platform by the end of March 2018, which opened up access to the Chinese market and even the global market. Tmall Global, a platform for purchasing overseas goods, controlled by Alibaba, has helped several Spanish brand products such as 5J Ham to expand into the Chinese market through a small team and at very low cost. This is another key example of how cooperation of Chinese private companies in the digital economy is helping foreign countries and companies to integrate into the vast Chinese domestic market.

To promote digital transformation of traditional industries and green growth is another area that needs assessment. In China, the digital transformation program of Alibaba Cloud Computing for Hangzhou City has achieved some positive results (Han, 2018). For example, the digital transformation of a traffic project has increased the average speed of vehicles in the city by 11%, and the digital transformation of a manufacturing project has yielded one percentage point higher of good quality products than a normal manufacturing process.

Going abroad, for example, Liugong Machinery, a leading company in the engineering machinery sector in China, has been quite successful in pushing through its internationalization plan (Gong, 2018). Informatisation or intelligentisation is one of the concrete strategies to translate their plan into overseas practices, including the use of intelligent equipment, intelligent manufacturing, and intelligent post-sale services. Despite of the strive strike studies such as Ochoga (2002) and Uba (2019) seen the DBRI as a capitalist strategy aims to exploit the B&R region in name of development partner. Uba (2019) described the policy as a make believe strategy which is by no mean wining in true sense of it.

Is the policy actually narrowing the digital gap and thereby narrowing inequalities in African and other societies. Han (2018) estimates that levels of informatisation of participating countries along the Belt and Road route increased by 2.78% in 2016 compared to the previous year, while the average global growth rate was 2.1%. Arguably, the better performance of the Belt and Road countries was attributed to the rapid construction of ICT network infrastructures and technical cooperation between China and the participating countries. The Tanzania case demonstrates this: China Telecom has helped the country to complete the construction of a key optical fibre transmission network. As a result, the level of informatisation in Tanzania has been upgraded from "no internet application" to "world class" level, which has also promoted the development of local ICTs and internet industries. Thanks to this achievement, the local telephone rate has decreased by 60% and internet use fees have decreased by about 50%. Tanzania has become one of the most important communication hubs in East Africa.

Whether the policy is actually enhancing digital inclusion and encourages thereby the democratization of and participation in public administration is a contentious issue. To start with, Huawei established an overseas training centre in 2012 for global talents. By the end of March 2018, more than 40,000 technicians and experts had participated in the "future seed" program at the centre. This has expanded the reputation and influence of some beneficiary countries such as Malaysia in the ICT field (Fu, 2018). According to Xu (2017), the Inspur Group has helped the informatisation of the taxation administration of Zimbabwe. The engineering team from the Inspur Group stayed with their counterparts in Zimbabwe over the past four years and provided hands-on tutorials to the local technicians and engineers. Moreover, it did not charge the customers on a daily or even hourly rate basis. The success of the Inspur Group's work in Zimbabwe has attracted other taxation bureaus in more than 10 African countries to learn these Chinese best practices. In response, the Inspur Group has organized more than 500 overseas events about cloud computing and big data, and has trained over 10,000 informatisation professionals for Egypt, South Africa, and Vietnam. But as applaudable as DBRI's seems to be in Africa it critics , Ochoga (2020), Uba(2019) and Odekina (2019) viewed it as nothing but win-win rhetoric and strategy in protecting Chinese overseas businesses, interests, and citizens. He avers that DBRI is nothing not across multiple domains, of which Beijing is amassing levers of influence to be able to operate in a more favorable strategic environment in the B&R region.

Digital Belt and Road Initiative: A Weapon or a Win-Win Policy?

Despite its branding as an economic and development initiative, the DBRI is in fact the embodiment of a whole-of-government effort to develop the "close coordination between military struggle and political, diplomatic, economic, cultural and legal endeavors" that Xi Jinping has called for to foster a strategic environment conducive to China's rise. Integrating the civilian and military sectors is a pillar of China's defense policy strategic

framework. It allows China to obtain benefits from national defense resources in peacetime and from civilian infrastructure projects in the event of conflict. Given that Xi Jinping has championed the "unified military-civil system of strategic capability, it should come as little surprise that major components of DBRI infrastructure, including the port-park-city model, the Digital Silk the U.S. model, but there is abundant evidence it is developing a network of strategic strong points that can significantly raise the costs of any U.S. military intervention and lower the willingness of DBRI host governments to offer access or assistance to the United States.

This network, embedding the military within the civilian, harnesses financial, technological, trade, roads and development tools in service of strategic and defense goals. It directly supports PLA power projection through enhanced operational, logistics and information network capabilities centered on DBRI platforms. It aims at creating an environment conducive to China's interests and inhospitable to America's. The gains to China from DBRI-related leverage come largely at the expense of the United States. They are, Gerry (2019:9) put it, "a suite of capabilities that are intended, clearly … to defeat American … power projection." China's technological exports under the Digital Silk Road and widespread adoption of the Beidou Satellite Network are important components of this "suite of capabilities." When Chinese technologies such as fiber-optic cables and 5G networks are baked into DBRI packages, host states' de facto reliance on Chinese companies increases exponentially. And in addition to promoting digital governance with Chinese characteristics, the spread of Chinese technology, particularly tools for surveillance and repression, favors authoritarian regimes, governments with which Washington is more likely to clash over undemocratic behavior. Not only does this disadvantage the United States and its companies, it also strengthens China's ability to seize and cement advantages by setting the standards for next- generation technology. Thus far, U.S. countermeasures like the Digital Connectivity and Cyber security Partnership announced in 2018 with a modest $25 million budget are woefully inadequate (Yung, 2020).

The nascent trend seems to be towards an increasingly Chinese dominated political, economic, technological and strategic ecosystem in the indo-Pacific. If there is a challenge posed by DBRI for the United States, therefore, it lies not in enhanced PLA capabilities per se, but in Beijing's enhanced ability to project its sovereignty, rules, or undue influence over international space based on a unilateral assertion of "core interests." The exercise of this power will challenge the U.S.-led open, rules-based international order. Should Beijing be successful in leveraging DBRI for preeminence in Asia, America's role as the guarantor of regional peace and stability would be undermined. Movement toward a Sino-centric regional ecosystem represents a fundamental change in the regional balance of power between China and the United States; there have been echoes of a "sphere of influence" strategy in Xi Jinping's public statements calling for "Asia for Asians." It is implicit in his pledge to build a "new architecture of regional security cooperation that reflects Asian needs." And China's creation of regional multilateral fora that exclude the United States indicates that it is laying the foundation for a more China-centric regional security and economic order. This in turn would have significant implications for the international rules-based order whether DBRI is a weapon or a win-win policy.

CONCLUSION

The paper is of the view that if Chinese companies are building roads and other infrastructures and also providing digital services in the B&R region is not anything to be celebrated hence it is a capitalist strategy meant to achieve economic patronage for greater economic pay off. This submission is different from the argument of

studies such as Gong et al. (2017), Henry (2016), Dutton (2015) and Guo (2018). This contrary view is different from the belief that the DBRI program uses a big Earth data approach that is made possible by the cloud-based implementation of data analysis and information extraction. To Gong (2017) and other proponent of the DBRI, the advanced data infrastructure has to be developed with links to other related data platforms of international organizations and programs, to optimize data, information, expertise, and knowledge brokered within the DBRI infrastructure. Even though Ochoga (2020) has a permissive view about the DBRI as a capitalist strategy, Guo (2018) submits that the program is all about improvement and harmonization of national data policies towards free access to both in-situ and space borne data is to be promoted in the B&R region, through governments, institutions, universities, and even the private sectors need to be strongly encouraged through their active collaboration with the DBAR program. While scholars have divergent view about the program, the proponents of the program are committed to it implementation and the countries in belt region are saddled with the option of choosing between alternative since foreign policy is all about the ability competing policy option. And as such, the economic weakness of the belt region invariably forms the source of economic and prosperity for the promoters of the DBRI, hence foreign policy is driven by national interest.

REFERENCES

1. Asia Society Policy Institute (2019).Weaponizing the Belt and Road Initiative. Hua: Asia Society   Policy Institute.
2. Cheng, U. (2017). How to push through the "Digital Silk-Road". *People's Forum*, 1st edition,   42–43.
3. Dutton,Y. (2015) . *Connective Financing: Chinese Infrastructure Projects and the Diffusion of Economic Activity in Developing Countries* (AidData Working Paper No. 64). Williamsburg, VA: AidData at William & Mary.
4. Fu, G. (2018). Digital Silk-Road: New bond between China and Southeast Asia. *Guangming Daily*, 12 May.
5. Gong, F. (2018). *Emerging economies and the changing dynamics of development cooperation. IDS Bulletin 49*(3). Brighton: IDS.
6. Guo,S. (2018) Big Earth Data: A New Frontier in Earth and Information Sciences." Big Earth   Data   1 (1–2): 4–20.
7. Han,V. (2018) *Impacts of digital divide on trade between China and participating countries along the Belt   and Road route*. Beijing University of Posts and Telecommunications Master dissertation.
8. Henry, G. (2016). *Emerging economies and the changing dynamics of development cooperation. IDS Bulletin 49*(3). Brighton: IDS.
9. Jerry,A. (2017). Thoughts on China's Belt and Road initiative for promoting UN 2030 Sustainable Development Goals. *Bulletin of Chinese Academy of Sciences*, *33*(1), 40– 47.
10. Kerry,G. (2017). Geoinformatics Education and Outreach: Looking Forward." Geo-Spatial Information Science 20 (2): 209–217.
11. Ochoga,O.E.(2020). "Geography and the Future of Big Data, Big Data and the Future of Geography." Social Science Electronic Publishing 3 (3): 255–261.
12. Odekina,M. (2019). An analysis of China overseas infrastructure investment along the Belt and   Road route. *China International Business*, *2018*(6), 5–6.

13. Scott,Y and Rajabifard, K. (2017). Earth Observation in the Service of the 2030 Agenda for Sustainable Development." Geo-Spatial Information Science 20 (2): 77–96.

14. Shu,U. (2016). Managing Big Data: NASA Tackles Complex Data Challenges." Earth Imaging   Journal. http://eijournal.com/print/articles/managingbigdata.

15. Uba,Y (2019). Big Data Analytics: Six Techniques." Geo-Spatial Information Science 19 (2): 119–128.

16. UNISDR (2015). UNISDR (United Nations International Strategy for Disaster Reduction). "Sendai Framework for Disaster Risk Reduction 2015–2030." Geneva: United Nations. http://www.preventionweb.net/files/43291_sendaiframeworkfordrren.pdf.

17. Xu,T. (2017). Global Crop Monitoring: A Satellitebased Hierarchical Approach." Remote Sensing 7 (4): 3907–3933.

18. Yung,N. (2020). *Development of Huawei heavily depended on the Belt and Road*. Retrieved from http://finance.sina.com.cn/meeting/2017-11-30/doc-ifyphxwa7115289.shtml