Teaching Notes for the Teaching Innovation:

Complexity of Innovation and Liberal Learning

in International Business Education

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Abstract This manuscript of the notes on the teaching innovation highlights the importance of integrating liberal learning into current international business education framework as the wold economy is becoming more turbulent and complex than ever. By providing a teaching case on the development of Chinese high-speed industry, this teaching innovation intends to help students to acknowledge and understand the diversity of knowledge and problems in real business world, to analyze and solve complex problems from an integrative perspective. Therefore, this teaching innovation contributes to nurturing students as not only future business professionals but also responsible global citizens.

Keywords Complexity of innovation, liberal learning, international business education

JUSTIFICATION OF THE INNOVATION

It has been criticized that business education in recent years tends to overemphasize on theories and techniques of business and neglect to foster students' integrative understanding the role and responsibility of business and of themselves.

Colby et al. (2011) describe this tendency as instrumental approach, which is characterized as a tendency of students to take courses and absorb knowledge that are most relevant for their future career. This approach essentially reduces or even eliminates the possibility for students to explore the diversity of knowledge provided by universities and to explore themselves. For instance, cultural diversity is not appreciated, discussion of diverse ideas and perspectives is not valued, sense making of the world around students themselves is based on business profession rather than self discovery and reflection.

Furthermore, this approach drives students to think and solve problems (at hand or in future career) in a limited range of frameworks and theories as they are repeatedly educated: "to be a business professional". Therefore, students' solutions often filter down addressing a few (if not only one) goals based on theories they learn (for instance, economics, strategy, efficiency in production, etc.) rather than integrating multiple interested parties, stakeholders, society, and most importantly, their own value and roles in this complexity.

This situation does not only occur at undergraduate level as Colby et al. (2011) observed. Datar, Garvin, and Cullen (2011) point out several of limitations of business education in MBA programs: lack of integration of diverse knowledge and multiple perspectives involved in complex and unstructured situations, neglection of discussion of role and responsibilities of business, acknowledgment of assumptions of the theories provided

in the curriculum.

These observations at different levels of business education suggest a very important point: business students need to relax their goal-oriented thinking framework and instrumental mindset of the knowledge they acquired and learn to acknowledge the complexity of our society and phenomenon of interest, integrate multiple perspectives, and reflect their value, beliefs, and responsibilities as a business professional.

This does not necessarily mean they have to do it on their own. Professors can and should help students in developing these skills. As suggested by Greenberg, Clair, and MacLean (2007), professors could go beyond the role of simply delivering knowledge and illustrating theories and enact the role of facilitating students' reasoning and becoming responsible global citizens.

However, this enlightenment role should be enacted cautiously and with careful design of the teaching methods to avoid imposing professors' personal and subjective perspectives, an effect that goes against the very intention of integration of multiple perspectives. An appropriate way to ensure the enlightenment while avoid biases of professors is to use real business case that could be analyzed from different perspectives and encourage students to discuss, contrast, and reflect on certain business problems.

A framework of design and organize a case that facilitates discussion and reflection is necessary for the success of this educational purpose. Liberal learning framework proposed by Colby et al. (2011) fits well for this purpose because it helps students to make sense of the world around them and prepare them to apply knowledge and theories they acquired and combine their own value, role, and understanding to analyze and engage business problems. Liberal learning includes three modes of thinking, analytical thinking, multiple framing, and reflective exploration of meaning. And these thinking

skills eventually reflect in the synthetic capability of practically reasoning. Analytical thinking means the skill to abstract, deduct, and reason from experience and phenomenon to conclusion. Multiple framing refers to the capability of thinking in terms of different and often conflicting perspectives. Reflective exploration of meaning emphasizes the exploration of essence, value, and responsibilities from reflection of the role of an individual.

My teaching innovation aims at acting as the starting point to address the limitation of instrumental approach, the tendency of current business education that emphasizes on solutions based on a range of frameworks and theories, and the neglection of personal reflection of value, responsibilities, and roles of business and students themselves. Adopting the liberal learning framework proposed by Colby et al. (2011), this innovation is a case study of a real-life business involves complexities, controversies, and details, and thus an appropriate platform for students to a) analytically discuss, think, and reason, b) experience multiple and conflicting perspectives, and c) reflect their role, value they emphasize, and responsibilities of business in the society. To serve these purposes and to avoid introducing professor's preferences and bias, the case study is structured as a situation involved different actors, and conclusions could differ depending on the perspectives one take and reflect on.

SUMMARY OF THE TEACHING INNOVATION

This teaching innovation is a case-based analysis, reflection and discussion. Before class, each student will be asked to read documents (news articles, government policies, strategy briefing etc.) or watch videos related to one aspect of the case of innovation in high-speed railway industry of China, and the preparation normally range from 5 minutes to 10 minutes. This step aims to facilitate student's interests in the case and

familiarize themselves with the events in the case. Also, relevant literature of applicable analytical frameworks will be provided to support students to understand the phenomenon such as global value chain and national innovation system (e.g., Gereffi, Humphrey, & Sturgeon, 2005; Mudambi, 2008; Nelson, 1993).

The case will be used in class discussion is the development of Chinese high-speed railway industry (brief case summary is listed in appendix).

And the in the instruction email (or handouts beforehand), students will think, analyze, and reflect on the documents (supporting documents and relevant information are listed in appendix) they read by a specific role, and questions facilitating the preparation will be provided, for instance (complete instructions listed in appendix):

Student A: *you will play the role in the discussion in next class as the manager (former CSR and now CRRC) responsible for the merger implementation of CSR and CNR. And think about the questions: what is the motivation for the merger? What's its potential consequence in terms of competitiveness of CRRC?*

Student B: *you will play the role in the discussion in next class as a researcher in noise reduction at Alstom, but as shown in the video, it is highly likely that after the merge, there will be a downsizing of a large scale. Although your department is specialized at innovation in reducing noise and you believe your work would be successful in very near future of a few years, since it is least profitable and less relevant for efficiency of trains among other business units, your department will cease to exist, and you will lose your job. Based on this role, think about the question how international competition and innovation will affect you.*

Some parts of these questions are answered (broadly or specifically) in the supporting documents, while other specific role-paly requirements are developed by the instructor

to represent a typical scenario and render the situation more concretely. The purpose thus is not to come up with a solution, rather, these roles and questions help students to engage in certain perspectives and conflicts more intimately and personally, i.e., these mini-cases are not decision-making cases, rather, they present events involved in a phenomenon. Then the students will be reminded that discussion and debate will take place in the class and active participation is critical. Also, documents containing general background of the case are also provided, and students are encouraged to explore more relevant information and develop their own analysis beforehand.

During the class, the instructor will explain the case and relevant parties involved in it. Then, the discussion will be conducted, and final summary of complexity of innovation is discussed, illustration of the liberal learning of the session and its relevance in innovation studies and business education in general will be explained by the instructor, and potential approaches to understand these complexities and conflicts will be provided to further reflection and analysis (detailed class management and teaching strategies described in section 4).

TEACHING OBJECTIVES AND TARGET GROUP

The main teaching objective of this innovation includes two aspects. First, to help students to understand and experience the complexities and conflicts of innovation (and business in general) in practices and reflect on knowledge, frameworks, and theories they acquired before. It is designed to be the summary in the last sessions to both review the theories and frameworks delivered in previous sessions and bridge the theoretical parts of the course and practical implication and potential future use of the knowledge. By discussing real-life business cases from different perspectives, students are expected to understand the boundaries, assumptions, and limitations of theories, while at the

same time experience the connection between theories and practices.

Second aspect is to develop liberal learning thinking (analytical thinking, multiple framing, reflective exploration of meaning, and the integration of these thinking skills as practical reasoning). A complex case that requires careful and comprehensive analysis is presented; multiple, conflicting, and interconnected parties are included in the case and their perspectives are discussed, contrasted, and reflected; different roles, value, and responsibilities are assigned to different students to promote personal reflection on their beliefs, positions, and preferences.

To achieve these objectives, the alignment between intended learning, class activities, and assessments afterwards is critical. Through preparation activities of reading relevant information, digesting details, and preparing the role-play in case study, discussion and debate activities in class that involve different actors and their opinions and interests, and mini-case analysis assignments after class that encourage analyzing complex issue from different perspectives, this teaching innovation is well structured and aligned with the two objectives.

The course to which this innovation could be applied would be an advanced course in business program. For instance, course of innovation studies in the third or fourth year of Bachelor of Business program. But the use is not exclusive and specific for innovation studies. Since it is a complex case involved many strategic activities of many actors in both domestic and international contexts, it could also be applied to courses such as strategic management and international business. With certain modification and inclusion of some more relevant details, it could also be applied to course such as creativity and entrepreneurship or industrial analysis. Furthermore, with modification on the depth and amount of information of the case, it could also be applied to master's

level course in business and management, especially the contrasting, questioning, and deep analysis part of the case. Target group of students of this innovation does not necessarily need to have practical experience in management since this innovation aims to provide help to facilitate their thinking in their future practices as managers or researchers. But on the other hand, students with practical experience are also welcome since they already have professional roles, and a comparison between their actual experience and the roles in the case could also bring insights and reflection.

TEACHING STRATEGIES AND CLASS MANAGEMENT

I recommend the following strategies to facilitate the preparation, case discussion, and achievement of teaching objectives.

First of all, this innovation requires active participation of students in terms of analysis, discussion, and reflection. To ensure a successful and meaningful discussion in class. The preparation beforehand is critical. The materials handed out should include three parts: essential information for the role play (a video, an interview, a news article, or strategic debriefing report), supporting information of the case (news report, documentaries, etc.), supporting theoretical framework (this category depends on the contents of previous theories and knowledge base of students and varies between key reference lists, suggested readings, and actual academic papers). The first information would entail 5-10 minutes preparation; therefore, the instructor could also prepare relevant information and hand it out in the first few minutes of discussion in case some students have not prepared.

During the class, it is suggested to start with the instructor’s lecture of summary of previous sessions and relevant theories and frameworks, in this case global value chain and national innovation system theories, depending on students’ prior knowledge and

actual course in which this teaching innovation takes place, it might also be necessary to introduce definitions of innovation, mechanisms of knowledge transfer, common international business strategies, developing countries, globalization etc. Duration of this part would range from 10 minutes to 30 minutes, depending on specific situation.

The key part of the innovation is the second part, discussion of the case. If it is a small group of students, each student can play a different role, while if it is a big group with around 20 students, it is necessary to divide the class into different groups according to different roles. For instance, if there are six roles involved in the case deemed relevant by the instructor, 20 students could be divided into six groups with about 3 students playing the same role. In this case, a brief discussion within each group could also be beneficial as it promotes the deeper understanding of the role and other students' perspectives (even the instruction is the same for these 3 students). This within group discussion should be done in about 5 minutes.

Then each student (pick or ask one volunteer in each group if it is a big class) will present his or her role, summary the case situation, answer the questions provided in preparation instructions. The instructor should also ask questions to help students to recall the case details. For instance:

As a governmental official, what are the differences of government's policies during different times and why do you think these changes happen?

As a report following this accident, what did you dig out? Who is involved in it? What does the official report from government say? Do you find it convincing?

Each student's answer should be around 3 minutes, thus in total this summary could last between 20 minutes and 30 minutes. During the process, students may summarize the case as they see it or from their personal perspective or come up with new insights

that are not included in material. This is perfectly normal and a positive sign of the good preparation and effort of individual analysis, as long as the students can summarize their role, what happened, and what the problem or critical issues is, more elaboration by students should be encouraged since the objective is to develop their analytical thinking and personal reflection of the role. I suggest adjusting this possible elaboration for an extra 5 to 10 minutes.

Since different students supposedly have different roles and essentially these roles are incompatible with each other. After letting students tell their stories, the next part of the discussion is to compare and contrast these stories. Some questions can be helpful for promoting discussion of this stage. For instance:

Meanwhile, the world is changing fast, what would a researcher on competing technology would say on this matter?

Do you think this event has anything to do with what happened in student A's situation?

Here I outline some possible conflicts between different parties as a guidance for facilitating discussion:

Chinese government and foreign government; competition between Chinese firms and foreign firms; researchers on competing technologies; ecological diversity and economic development; selling technology to Chinese firms and fostering competitors in the future; effect of merger on innovation; effect of merger on competitiveness; strategies to cope with competition from foreign firms (or Chinese firms).

In this process, it is recommended to guide students discuss the topic based on their understanding, reflection, and judgment. But at the same time, if discussion becomes emotional and too personal, the instructor should intervene to ensure the effective discussion, in other words, logic reasoning based on facts, in-depth analysis,

exploration of supplementary materials is appreciated, but struggling with issues with personal feelings and bias and debating to extremes should be avoided. In between, the instructor could show relevant images, videos, or news clips to facilitate discussion. Writing on blackboard of students' questions, comments, and responses would be helpful to keep track of the discussion and illustrate the discussion process more concretely. This part of free discussion is estimated to take around 20 minutes.

After all relevant information is presented and students' discussion covers all relevant complexity and controversies of the topic, the instructor should again highlight that this is a real-life business case and as in real world, cases like this are often complex and involve multiple actors.

Then the instructor can start the summary part of the discussion. First, a brief summary of the case and relevant actors involved in the case (2 to 5 minutes) would be necessary to reemphasize the systematic and integrative approach of the case discussion activity. Second, a synthesis of what has been discussed by students, what incompatibilities have been identified, and what conclusions have been reached should be carried out by comparing the instructor's plan and documentation of discussion contents (blackboard, paperboards, or notebook pages). This process would take around 5 minutes.

After the summary of the discussion, the instructor should emphasize on the objectives of the session as first, acknowledging the complexities of innovation in practice and understanding why these complexities and conflicts happen: because different parties with different interests, motivations, and objectives are involved; and second, developing liberal learning skills to understand that individuals can take different roles and think differently and reflecting on students' own role, value, and responsibilities in future career in business profession. This part would take between 5 to 10 minutes.

Students may ask solutions and answers of the case (as they normally expect in a decision-making case study), here since it is the case of the ongoing development of an entire industry spanning across several decades, the instructor could encourage students to explore by themselves some of the unsolved problems and ongoing process, such as the new model of high-speed trains, controversies of local ecological diversity in the region of Qinling Mountain, or the actual results of the proposed merger.

Meanwhile, the instructor could provide some frameworks for analyze and think about complexity and paradox in innovation and business in general. There are many relevant academic articles and books on the topic, here I provide one of them: typology of paradox, dilemma, and dialectic (Smith & Lewis, 2011). Depending on how students view the complexity in practice, answers could be different. For instance, relationship between downsizing of Alstom (or the development of Maglev) and protection of panda and ibis could be paradoxical. Also, inefficiency of government such as corruption, leaping development could have negative impact on future reputation of the industry from customers in the global market, and could influence innovation investment. One could also analyze the complexity from the dilemma perspective, for instance, choice between wheel-based and maglev technology, competition between European and Chinese firms, and economic growth and environmental impact. Students could also notice a dialect approach in business analysis, such as incorporating corporate social responsibility, incorporating multiple stakeholders, and forming alliances to face competition.

At the end of the class, the instructor could introduce some mini-cases of controversial issues in innovation, technology, or other fields to facilitate students' reflection of the experience and to apply the skills of liberal learning.

ADVICES FOR POTENTIAL USERS

Apart from specific suggestions accompanying each step of the class management above, in this section I outline some extra general advices for potential users.

First, since it is a complex case, instructor needs to read and absorb relevant information of events, arguments, different motivations and objectives of different parties involved in the case. This way, the instructor can modify the case and emphasize on specific parts of the case if necessary. But more importantly, good preparation would help the instructor to better facilitate discussion and adjust when unexpected situation occurs in the class, for instance, absence of some students or difficulty of recalling details of the cases.

Second, the instructor needs to balance different parts of the session. The instructor has the choice to introduce the theme of the session, liberal learning and complexity of innovation, beforehand or inductively. Both approaches have their own benefits and potential drawbacks. For most students, liberal learning could be a new concept and framework, introducing it beforehand might cause confusion and seems too deliberate. While if it is discussed and summarized at the end, students learn the concepts and develop the skills by active learning of participation in preparation, analysis, and discussion. But at the same time the objective could be ambiguous at the beginning. To avoid this situation, the instructor can introduce the complexity of innovation in practice and the connection between theory and practice as the theme to stimulate interests of students.

Third, during the class discussion, the instructor should allow students to express their thought, feeling, and comments on the case, even these feedbacks are not included in supporting documents provided beforehand. After all, liberal learning is about

understanding different perspectives. If a student discovers a conflict between his own thinking and the role he is assigned, it would also help students reflect their role and value. Overemphasis on role-play and ignoring students' willingness to express and discuss would have negative effect on students' future initiative of learning.

Fourth, although the primary objectives of the innovation are not about solutions, the instructor could also modify parts of the case and discuss that part in detail depending on the overall course objectives. The advantage of this innovation is that it has rich information to accommodate different topics in business.

REFLECTION ON THE AUTHOR'S FIRST USE IN CLASS

Feedbacks I got from the first use (micro-teaching activity of 25 minutes with 10 students) was mostly positive, including interesting topic, effective way of organizing discussion, effective to keep students' attention and interests. These feedbacks suggest this innovation, despite its complex preparation and requirement, is indeed an interesting and promising teaching method, and if carried out according to plan would be effective.

The negative feedback mainly focused on the limited discussion of the activity and clear introduction of the topic and objective of the session. Due to time constraint, I emphasized on "letting everyone tell the story" and neglected the balance between different parts of the session and constrained the discussion, which should be improved in future application.

References

Colby, A., Ehrlich, T., Sullivan, W. M., & Dolle, J. R. (2011). *Rethinking undergraduate business education: Liberal learning for the profession*. John Wiley & Sons.

Datar, S. M., Garvin, D. A., & Cullen, P. G. (2011). Rethinking the MBA: Business education at a crossroads. *Journal of Management Development*, *30*(5), 451-462.

Gereffi, G., Humphrey, J., & Sturgeon, T. (2005). The governance of global value chains. *Review of international political economy*, *12*(1), 78-104.

Greenberg, D. N., Clair, J. A., & MacLean, T. L. (2007). Enacting the role of management professor: Lessons from Athena, Prometheus, and Asclepius. *Academy of Management Learning & Education*, *6*(4), 439-457.

Mudambi, R. (2008). Location, control and innovation in knowledge-intensive industries. *Journal of economic Geography*, *8*(5), 699-725.

Smith, W. K., & Lewis, M. W. (2011). Toward a theory of paradox: A dynamic equilibrium model of organizing. *Academy of management Review*, *36*(2), 381-403.

Appendix

a) Brief case summary

The development of Chinese high-speed railway industry broadly involves four different stages. It started with the Ministry of Railways' conceptualization of a 1318-kilometer high-speed rail project connecting Beijing and Shanghai in the 1990s to alleviate transportation pressure grew along with economic development (NDRC, 2007). During the first period of evaluation and preparation between the 1990s and 2004, debates between the application of wheel-based and magnetic levitation (maglev) system were conducted, indigenous innovation effort was carried out, and experimental high-speed trains were produced such as "China Star". Starting from 2004, the newly appointed minister Liu Zhijun abandoned the indigenous innovation strategy and started the aggressive "exchange market for technology" strategy by importing technology from multiple MNCs, including Alstom, Siemens, Bombardier, and Kawasaki Heavy Industries. By absorbing knowledge and technology of these MNCs, manufactures such as China CNR Corporation Limited (CNR) and CSR Corporation Limited (CSR) developed modified product series such as CRH1, CRH2, CRH3, and CRH5 around 2007. Building on this knowledge accumulation, manufactures developed modes such as CRH380A and CRH380B around 2010, representing a significant improvement of innovation capabilities in HSR industry. Based on these learning activities, around 2017, Chinese manufactures developed the new generation train models by indigenous innovation with complete redesign and intellectual property rights named "Fuxing" series with products such as CR400AF and CR400BF.

b) Preparation instructions

You will play the role in the discussion in next class as the manager (former CSR and

now CRRC) responsible for the merger implementation of CSR and CNR. And think about the questions: what is the motivation for the merger? What's its potential consequence in terms of competitiveness of CRRC?

You will play the role in the discussion in next class as a researcher in noise reduction at Alstom, but as shown in the video, it is highly likely that after the merger, there will be a downsizing of a large scale. Although your department is specialized at innovation in reducing noise and you believe your work would be successful in very near future of a few years, since it is least profitable and less relevant for efficiency of trains among other business units, your department will cease to exist, and you will lose your job. Based on this role, think about the question how international competition and innovation will affect you.

You will play the role in the discussion in next class as a researcher in Ecology and Endangered Animals who thinks the efforts described as ecological corridor is already too late until 2027 and criticizes that construction of the high-speed rail line through the Qinling mountain only included limited protection e.g., only putting nets around the train line, no consideration of influence of noise, pollution, and geographical change on panda's and ibis' habits and food etc.

You will play the role in the discussion in next class as an official from European Commission who is responsible for the investigation of the merger of Alstom and Siemens. And think about the questions: what are the competition concerns of this deal? What could be its potential effect on innovation and competition in European market?

You will play the role in the discussion in next class as the manager from Siemens responsible for the merger implementation of Siemens and Alstom. And think about the questions: what is the motivation for the merger? What's its potential consequence in

terms of competitiveness of the two firms? And what could be potential influence on European market?

You will play the role in the discussion in next class as the journalist investigating the accident. And think about the questions: what might be the causes of the accident? What's consequence of this accident?

You will play the role in the discussion in next class as a Chinese government official in high-speed rail industry. And think about the questions: what are the differences between Chinese, Japanese, and European countries' (French and Germany) governments' strategy and policy regarding the role of high-speed railway industry?

You will play the role in the discussion in next class as a professor specialized in magnetic levitation technology (basic technology in hyperloop transportation) at Southwest Jiaotong University. As a specialist (member of China Engineering Academy) who have worked for more than 20 years in the field, you always criticize the overinvestment on traditional wheel-based high-speed trains and suggest multiple times to government to increase investment on Maglev trains, especially we already started our own commercialized Maglev line as early as 2002.

You will play the role in the discussion in next class as a senior engineer specialized in application of magnetic levitation technology (basic technology in hyperloop transportation) at China Railway Rolling Stock Corporation (CRRC). As a specialist who have worked for more than 20 years in the field, you are always sceptical about the actual application of the technology in industry and the cost and benefit balance. To you, hyperloop is just a new unicorn for venture capitalists.

c) supporting documents and relevant information

1. Government:

Chinese government officials

https://www.railway-technology.com/features/featurethe-importance-of-chinas-high-speed-tech-transfer-policy-5748075/

https://www.dw.com/en/europe-faces-china-japan-in-high-speed-rail-battle-in-asia/a-42589008

Official from EU

http://europa.eu/rapid/press-release_IP-18-4527_en.htm

https://www.smartrailworld.com/mega-merger-ahead-as-chinas-cnr-csr-crrc-corporation

https://www.railway-technology.com/features/featurethe-importance-of-chinas-high-speed-tech-transfer-policy-5748075/

2. Institutions:

Researcher on competing technology

https://www.cnn.com/travel/article/first-hyperloop-in-guizhou-china/index.html

https://www.scmp.com/news/china/economy/article/2049785/china-tries-catch-japan-maglev-train-can-exceed-600km/h

3. Producers:

Researcher on existing technology

https://www.cnn.com/travel/article/first-hyperloop-in-guizhou-china/index.html

https://www.scmp.com/news/china/economy/article/2049785/china-tries-catch-japan-maglev-train-can-exceed-600km/h

Manager at CRRC

http://europa.eu/rapid/press-release_IP-18-4527_en.htm

https://www.smartrailworld.com/mega-merger-ahead-as-chinas-cnr-csr-crrc-corporation

https://www.railway-technology.com/features/featurethe-importance-of-chinas-high-speed-tech-transfer-policy-5748075/

4. Users:

Journalist following the accident

https://www.railway-technology.com/features/featurethe-importance-of-chinas-high-speed-tech-transfer-policy-5748075/

https://www.nytimes.com/2011/07/25/world/asia/25train.html

Manager at CRC

https://www.theatlantic.com/china/archive/2013/07/the-rise-and-fall-of-chinas-great-railway-boss/277613/

5. Multinationals:

Mini-case of potential downsizing after merge of Alstom and Siemens

https://www.youtube.com/watch?v=Aooaznrutec

http://europa.eu/rapid/press-release_IP-18-4527_en.htm

https://www.dw.com/en/europe-faces-china-japan-in-high-speed-rail-battle-in-asia/a-42589008

Managers of MNCs

https://www.createglobalmobilityplayer.com/

https://www.dw.com/en/europe-faces-china-japan-in-high-speed-rail-battle-in-asia/a-42589008

http://europa.eu/rapid/press-release_IP-18-4527_en.htm

6. Environment:

http://www.xinhuanet.com/english/2018-09/15/c_137470147.htm

http://www.xinhuanet.com/english/2018-06/03/c_137227078.htm

http://news.sina.com.cn/o/2017-12-06/doc-ifypnqvn0697653.shtml

http://fms.xinhuanet.com/swf/2017qmtt/12_6_2017_xcgt/index.html