

China's Global Ambition to Standardization – Impact on Trading Partners

Think Piece for EWC/NSF workshop Mega/Regionalism / New Challenges for Trade and Innovation MCTI, Honolulu, 20-21 January 2016

Revised Version 31 January 2016

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Abstract

China has ambitious targets with its standardization system: Standards shall become a key pillar for the innovation power of Chinese industry and at the same time helping to pave the way in important export markets. This Think Piece explores the ongoing reform of Chinese standardization system, analyses some key elements, and explains how this may affect its trading partners.

The reform is a challenge for the Chinese industry: They will have to learn to engage and cooperate in defining and shaping standards for future markets, without government support, but together with international competitors. This requires a sensitivity for both international and domestic developments, and a willingness to abstain from globally incompatible “China only” solutions. We still see many standardization activities in China which seem to be disconnected from the rest of the world: Simple “study” of related international standards will not help to solve this problem – it requires active engagement and participation of Chinese industry globally.

The reform is especially interesting since China continues with maintaining in parallel compulsory and voluntary standards: Compulsory standards will continue to replace technical regulations, despite all the known disadvantages such compulsory standards entail. On the other hand voluntary standards shall become more innovative and export oriented through a decoupling from most of current government controls. These two tendencies contradict each other and it is still unclear how this system is going to work in reality.

One of the key issues related to the Chinese standardization system is unfortunately not being addressed: The lack of a comprehensive framework of technical regulations. This makes the implementation of a modern risk-based approach toward product safety very difficult, it also endangers also the entire reform project. It allows an outdated system to continue, a structure where the government remains responsible for safety and quality of goods and services. The consequence is an emphasis on compulsory controls, a time consuming structure which is adding to the cost of production and trade.

Nevertheless, the new structure of Chinese standardization will allow China to more forcefully engage in trade negotiations: The new “association standards” might be considered “less political”, thus also more palatable for an audience very sensitive about any sign of Chinese dominance in the region.

1. Argument

China is currently embarking on a large project to fundamentally revise its standardization system: This project includes the realignment of its entire stock of standards, the revision of thousands of standards, and the creation of new standard categories which deviate from the models used in other major economies. This revision will not only impact the Chinese national economy, it will also influence international standardization – and through international and globally relevant standardization bodies also our economies in Europe and the US.

The rationale behind this massive undertaking is to strengthen both innovation power and export prowess of Chinese industry: China considers standards as an important element in fostering a more effective implementation of research results, and in helping to industrialize related promising products and services. Ultimately, it is the intention of China to accelerate the path towards a knowledge based economy, exporting not only products but also the knowledge behind such products.

Whilst this reform is impressive, it still addresses only a part of the identified problems with the current Chinese standardization system: Whilst it opens the standardization towards the industry it still maintains the dominant role of government, creating a dual structure with areas controlled by industry and areas remaining under government control:

- If the standards are related to health, safety, security, and environmental protection, the dominant role of the government shall be maintained and even reinforced. China sticks to the old system of compulsory standards – albeit streamlined and concentrated in the hands of SAC. But also in the area of voluntary standards some government controls shall be maintained: Government institutions keep the right to mandate voluntary standards, addressing their own needs, built on political concerns rather than industrial preferences.
- If the standards are not directly related to safety issues, they shall be controlled by industry without any direct interference by the government. In order to achieve this, two new categories of voluntary standards are being created: 1) association standards, developed by industry associations, and 2) enterprise standards, developed by individual enterprises and made available for the public.

This complexity is repeated throughout the entire conformity assessment system¹ with voluntary and compulsory certificates, voluntary and compulsory inspection measures, restricted choice of testing institutions, etc. In fact, with this partial reform the complexity of the system might have increased: Especially for SMEs it becomes very difficult to understand the split into areas where they are locked into an old-fashioned compliance system and areas where they should take an active role in defining both standards and testing requirements.

Due to this partial reform China is moving into a very different direction than most other countries and thus the impact of standards on trade with China becomes also less predictable: There is little experience and knowledge in how such dual standardization structure should work and it is unclear how

¹ Conformity Assessment = measures which assess whether conformity to a given set of rules is achieved, these rules often being standards and technical instructions. Common conformity assessment tools are: certification, testing, inspections, and many other tools

the local industry is going to react on this. Does this indeed lead to more modern and globally aligned standards, or does it rather lead to strengthened monopolies in the market?

The author of this article believes that the success of the new system is not guaranteed and that additional measures need to be taken to stabilize the reform process. Here the trading partners become important: Their experience with global markets will be essential for the development of the Chinese system. The author argues that the new structure requires much more cooperation between domestic and foreign companies and their related trade associations.

2. Introduction

China has understood that the current standardization structure will need major reforms to maintain its usefulness: Whilst the government driven and controlled standardization system helped China with its rapid industrialization and protected the industry whilst becoming more competitive globally, it has now probably outlived its purpose. Many scholars also within China believe that major changes are required to support a more knowledge driven economy and to become a relevant player also in global standardization. However, the proposed reforms do not lead to a system which is closer to the way standards are developed in America or in Europe: The Chinese system remains unique, and as such also difficult to understand and in its consequences rather unpredictable. Government policies still remain an important factor in standardization, whilst companies are asked to actively participate and develop their own standards. The main question is whether such a system will work and achieve the result of making Chinese standardization deliverables more relevant for future development of Chinese industry and for expansion to global markets.

Many failed projects of the past taught the lesson that it is not always desirable to support and accelerate market entry of innovative ideas with top down standardization processes². Without industry and societal stakeholders in the driving seat, standards risk to become more of a problem for industrial development than a support: Market forces need to be harnessed, international alignment is prerequisite, and freedom in research a must - all of these generally cannot be ensured through government directed processes. And on top of this, China realized that – despite best efforts – the international audience is still ignoring Chinese standardization deliverables, even if they reflect newest technological achievements.

The reform of the standardization system is a major change of industrial policies: Industry and other economic operators shall become the drivers of a modern and innovative standardization system. Companies shall lead the development and the dissemination of standards. Societal stakeholders shall be given more influence. The role of the government is then more a corrective force in areas where e.g. unwanted monopolies develop, or where consumers are being hurt by unsustainable practices. However, this is only half of the story: This new industrial policy applies only for areas not considered essential for health, safety, security and environmental protection and which are not part of specific government

² One interesting example are the standards related to the 3G-Network for telecommunication services: Despite massive engagement and financial support for the Chinese system called TD-SCMA, the technology failed to move beyond China, and even within China it is purported that the deployment was only possible because the largest mobile services provider "China Mobile" was forced to establish such network

driven policies. In these areas the respective government institutions shall remain the driving force behind standardization, using compulsory standards where safety is at stake and mandated voluntary standards where essential policies need to be implemented.

Implementing such a market driven structure requires a change in the safety culture of all economic operators: Current emphasis and focus on compliance and government policies needs to be replaced by a new thinking where companies assume more responsibilities. In the areas of health and safety this means that manufacturers will have to assess the risks of their products and make risk-based decisions about how to mitigate these. In area of innovation it means that industry will have to initiate standardization processes themselves rather than relying on government agencies driving the process.

Such change of culture is not easy to achieve, and this dual system might become a disincentive especially also for Chinese SMEs. They are now confronted with a two totally different messages: On one hand, they are still required to focus on compliance and government policies, on the other hand they are now asked to make risk based decisions themselves. It might be quite difficult to expect a major change in attitude as long they are still locked into a system of compulsory standards and conformity assessment measures – even if with the promise that future government intervention will be kept at the minimum. In addition, companies are not ensured that the new system is going to work for their benefit, there are simply too many uncertainties surrounding the new concept. Thus, it might well turn out that most companies are reluctant to adopt these changes.

3. Discussion

3.1. Compulsory Standards

Safety and security of products in China is controlled by thousands of compulsory standards. These compulsory standards replace technical regulations as common in most developed economies. China has yet to build a consistent framework of regulations addressing the risk involved with products and services³. Just to make a few examples: There is no equivalent in China to the European Machinery or Low Voltage directives, there is no regulation addressing safety and reliability of construction products, or there is no even a law for toys. As a kind of remedy, China invented some horizontally applicable hybrid standards containing parts of the text of technical regulations such as a list of basic safety issues to be addressed including also the requirement of undertaking a risk evaluation⁴.

This structure is – unfortunately – not being changed with the ongoing total revision of the standardization. China is still relying on a highly static structure of compulsory standards as main tool for addressing risks: These standards should be covering issues related to health, safety, security, and environmental protection for all products and services. There is little space for actions based on an evaluation of the real risks inherent with these, all compulsory requirements must be complied with

³ This difference leads often to misunderstandings between experts in and government activity is focusing on technical regulations and not on standards themselves

⁴ A typical examples of this type hybrid standards is the national standard GB 19517:2009 “National Safety Technical Code for Electric Equipment” for the electrotechnical sector. It is containing a list of generic safety requirements and a list of compulsory standards which supposedly are addressing these risks. A similar hybrid standard is under preparation for general safety of mechanical products

regardless of their relevance for a specific product and services. There is no “hierarchy” between compulsory standards, this is also not changed with the new hybrid standards. This leads to an unsatisfactory approach towards risks, where companies assume that compliance will automatically lead to safe products and services. The emphasis on compulsory standards creates also a major disincentive for undertaking a risk assessment on a voluntary basis – since such activity creates additional problems for the companies: Whilst they still have to comply with all elements of the applicable compulsory standards, they now have to address in addition all risks identified and not sufficiently mitigated by these standards⁵.

The lack of technical regulations does not only hinder the implementation of a modern risk-based approach toward product safety, it also endangers the entire reform project. It allows an outdated system to continue, a structure where the government remains deeply involved in safety and quality of goods and services. The consequence is an emphasis on compulsory pre-market controls, a time consuming structure which is adding to the cost of production in and importation to China. Whilst the reform of the standardization is generally moving towards more responsibility of companies, the new rules include also a streamlining of compulsory standards in the hands of SAC, thus in this area moving further away from international practice. This is not only creating continuous headaches for its trading partners but also fostering an outdated safety culture.

3.2. The Core Element of the Reform: The new Category of Association Standards

A core element of current standardization reform is the introduction of a new category of standards which should become the main tool for future standardization work in China. Whilst the English translation for this new category is not yet clear, we prefer to use the term “association standards” since this term reflects the true nature of these standards: They shall be developed by appointed Chinese industry associations, driven by the industries themselves, and cover all topics of standardization except those covered by compulsory national standards. The standards are by definition voluntary in nature.

This new category of standards applies not only for future standardization work, it is planned also to re-evaluate all existing voluntary national and provincial standards, and to transfer them to these industry associations, as applicable. Since standards in China are generally reviewed every five years it will probably take 5-6 years for the process to be completed. Within this process ten thousands of standards will be reclassified: a massive undertaking which will require substantial resources both financially and in form of expert time.

This new category of standards represents a radical departure from the existing certification structure. Whilst current system is fully under government control, this new structure will lead to a new spirit in standardization where standards are developed industry based on real commercial interests⁶.

⁵ In response to this lack of safety awareness, CNCA is considering to implement a certification scheme for functional safety: An additional layer of certification leading to an even more complex system where companies must both apply a risk based approach towards safety and at the same time apply all rules outlined in compulsory standards

⁶ Whilst it is currently not yet clear whether there will be a form of government subsidies for the development of industry standards – directly via SAC or indirectly over the ministries concerned – we do not believe that there is much interest on the government side to this. Wang Ping discussed this aspect in his paper “Beyond Government Control of China’s Standardization

This structure will ensure that future standards in China are developed in fields only where industry sees an urgent need: It is the expectation of those who developed the system that this will lead to fewer but much higher quality standards – standards which are more aligned with international standardization work and which are to a much higher degree reflecting international best practice.

The government retains though an indirect control over the system since bodies issuing association standards in China must be granted the right to do so. In a first batch 39 associations are included in the program⁷ – none of these are foreign controlled or with substantial foreign membership. The selection criteria for these 39 pilot associations are not fully transparent; some of these are traditional standardization organizations in China having now a new role within the system⁸. It will be interesting to follow the development, as more associations are admitted to the system: For trading partners relevant is also how China will react on foreign associations and industry consortia, especially whether these will be given the opportunity to apply for participation in the system⁹.

The entire new system stands and falls with the participation of the Chinese industry and their willingness to take the full responsibility for standardization. This is far from guaranteed: It will require a change in thinking for many Chinese business leaders both in SOEs¹⁰ and in private enterprises. Both will have to learn to lead standardization without government guidance and control, and without being mandated for developing standards. For SMEs it will probably be difficult to justify increased use of resources for Chinese standardization as long it remains questionable to what degree participation in Chinese standardization efforts will make a difference, both towards other interest groups within China and on the global stage. Here the Chinese industry can also learn from foreign experience: Direct cooperation between foreign and Chinese associations and between companies directly will have a much bigger impact than in the previous system.

There is though a caveat: Companies and industry consortia in China with a dominant position in the markets might also use the new tool to further their monopolistic interests: They can use this new type of standards to cement their dominant position – rather than contributing to a modern and internationally aligned standardization system. This is a real danger since – with absence of the government – there is no corrective force anymore.

System — History, Current Status and Reform Suggestions” issued in Jan 2016 and strongly argues against future government mandates for association standards

⁷ These industry associations include also some standardization “consortia” in China; nevertheless these are generally well structured organizations with open membership and clear rules. The 39 associations selected for the pilot project seem to be genuinely reflecting their trades and are associated with one of the ministries in China

⁸ In the ICT sector this applies especially for CCSA (China Communication Standards Association), the industry association in charge for telecom standards in China and also representing China at ITU-T and ETSI-related standardization bodies. Whilst CCSA will probably have much more leeway in selecting topics and in developing standards as it sees fit, it will probably lose its right to directly control activities in the relevant technical committees on national level in China

⁹ Some typical examples are formal US-standardization organizations such as IEEE or ASTM, non-governmental organization in the area of CSR (e.g. forestry, textiles), or by consortia controlled standards such the related numbering system of GS1

¹⁰ SOE = State Owned Enterprises: Over 50% of industrial activity in China is controlled by various form of SOEs both on national and provincial / municipal level

3.3. The New Role of Enterprise Standards in China

“Enterprise Standards” is the name commonly given in English to a category of standards which is very specific to the Chinese system. These are standards developed by individual companies for their specific needs – and then made public. Whilst most companies in China and overseas are working according to a framework of external and internal procedures – often collectively called the company’s quality manual – it is not common outside of China to endorse these company procedures through government agencies and give these standards public visibility. Unlike overseas, in China such company instructions are often considered public knowledge, despite their private nature.

Whilst these enterprise standards existed already in the previous system¹¹, they play now a different role: The previous compulsory registration is now being replaced by a voluntary publication of such standards: All companies are encouraged to participate in this scheme; these company standards will serve as a tool for knowledge transfer to similar companies: The industry shall learn from the experiences made by the leading companies in their trade, especially from national champions and successful SOEs. Enterprise standards should become an important tool to disseminate top of the edge research results and help to accelerate the opening of new markets¹².

The system is very particular to China and must be seen in the context of a “socialist economy” – where important knowledge, as long as not protected by privacy concerns, concrete copyright issues, or specific IP registrations, is considered a public good. Such knowledge needs to be distributed to all interested parties in China: This will help to accelerate the innovation of the industry and to help increasing the knowledge and management skills of Chinese companies.

This type of government sponsored knowledge transfer from leading companies to the entire trade has both positive and negative sides: On the positive side it might indeed help to make many companies aware of the internal management and quality control structures needed to become more competitive in the market. However, there is also a considerable risk of abuse: Companies with dominant position in the market might use this tool to shortcut the standardization process and impose their internal processes to all market players in China. It might also lead to government agencies suggesting to foreign invested companies to disclose internal procedures which they are not prepared to do voluntarily. Whether enterprise standards can be misused in a similar way depends very much on the actual implementation of the new concept – and here we know simply not enough for an assessment. It seems that the authorities in China are not yet clear about how the enterprise standards shall be regulated and controlled in future, especially also how the publication of these standards should work.

¹¹ Official registration of standards is also part of several certification schemes: The company must develop and publish such enterprise standards which are then used as guidance for the entire certification process. Typical examples are the registration of medical devices or the licensing of pressure vessels.

¹² In the general understanding of most standardization bodies, standardization efforts can be defined by two main functions 1) standards addressing the risks inherent to products and services, including their measurement and 2) standards supporting the opening of new markets and services mainly by addressing communication and interoperability issues

3.4. Certification: Government Control of Market Access in China

The restructuring of the standardization system reduced the grip of individual ministries on standards: In fact they must now convince the respective national technical committee in charge for compulsory standards, whenever a new compulsory standard shall be implemented. In addition, as outlined under chapter 3.1, there is also little experience with modern forms of technical regulations – which could replace the compulsory standards. This said, current structure of quality control in China allows still a lot of control over the markets: The most important tools are compulsory certification and compulsory inspections.

Whilst inspection and market surveillance are mostly controlled by AQSIQ, compulsory certification¹³ remains in the hands of individual ministries: Probably for the majority of products categories some sort of compulsory certification is required. Compulsory certification schemes have been in place for many years, and no major change has been announced, despite calls from central government to make business environment more welcoming. Many of these certification schemes require testing and inspections by appointed certification bodies – irrespective of quality control measures already undertaken by the company – often leading to double testing and inspections¹⁴. Whilst we have seen major reforms in other areas of quality infrastructure – certification remains the stronghold of top-down government control.

Both domestic and foreign companies complain that certification requirements became more stringent and that many additional certification schemes have been announced recently. Whilst some of these additional certification requirements focus on information security, others are addressing much broader safety concerns, having a large impact on industrial products in general.¹⁵ This tendency – and the related sentiment of companies that “things are getting worse”¹⁶ – might seriously undermine the reform efforts in the field of standardization: The new standardization system requires companies which are willing to take responsibility in assessing the risks involved with their activity and the products and services they deliver. However, if they are still forced to comply with ever more stringent certification requirements, their enthusiasm for an engagement beyond covering compliance issues might be limited.

¹³ We use the term “compulsory certification” as it is best understood by non-specialists: It includes all forms of technical licensing, which might be imposed in form of formal certificates, controlled labels, inspection certificates, registration numbers, or simple approval letters

¹⁴ This tendency is in detail described in the Position Paper of the European Chinese Chamber of Commerce, in the chapter on Quality and Safety services

¹⁵ A typical example is the announcement of CNCA that they are going to develop a certification scheme for functional safety of high risk machinery and equipment: Such a system – if compulsory – would include many product categories which are currently exempted from compulsory certification

¹⁶ Increased government controls are considered one of the top issues of concern for foreign companies in China, reflected in the annual reports of both the American and the European Chambers of Commerce China. Whilst these report are based on the sentiment of foreign invested enterprises in China only, there is no reason to assume that the views of Chinese companies are different

4. Impact on Trading Partners and ongoing Trade Negotiations

This reform is still work in progress; it is probably a bit too early to assess the potential impact on trading partners and trade negotiations. One thing is clear though: This new structure makes Chinese standardization more compatible with international practice. Whilst compulsory standards remain a stumbling block for whoever would like to trade with China, the new “association standards” will allow a more flexible cooperation with China:

- The risk to have a new standard imposed as compulsory standard is lower. This will make foreign companies more willing to engage into discussions about new standards, even in areas where no similar international standard exists.
- Association standards shall be driven by genuine industry interest. Hence it is much more likely that they will meet also real interests of foreign trading partners. The mood of participation by foreign companies in standardization will change from a more defensive attitude – driven by the fear that the new standard could create difficulties in future trade – to an active contribution to standards where a real need exists.
- It becomes easier to align Chinese standardization with internationally accepted standards. Unless there is a genuine consensus within the Chinese industry to embark in something different than the rest of the world – there is little incentive to deviate from internationally accepted standards, no matter where these standards are originated.
- It opens the door towards informal standardization. Whilst it is not yet clear to what degree industry consortia will be admitted to the new system, the new structure allows the bodies in charge for the “association standards” to cooperate with whom they deem necessary. This might also include foreign industry consortia.
- It is a tool for Chinese trade negotiations. The current top-down system of standardization leaves little space for effective cooperation on standards: The new structure has the potential to change this. The clauses about cooperation and potential harmonization in standardization in many a trade agreement with China will become more than just a dead paragraph: With the new system China might have something to offer in its own right.

The new structure has the potential to help reducing barriers of trade by eliminating the constant push for “standards made in China” without clear industry needs. However, the degree to which this potential will be unlocked depends on a few important factors: The Chinese industry must be willing to effectively take the lead in standardization. As mentioned before this not guaranteed and the dual system makes participation also a complicated issue. Then it seems to us necessary that China implements a body fighting anti-competitive behaviors. Without such body it is very likely that monopolies will start dominating the standardization process in important industries. And finally, China must sooner or later address the issue of compulsory licensing: This system is continuously creating trade irritations and has a negative impact on cooperation in standards. In fact, with this licensing system China is increasing the risk for serious disputes with its trading partners.

4.1. Consequences for RCEP and TPP

This is the first time China is able to put something on the table related to standards: The new structure will allow China to earnestly cooperate with regional trading partners for new and innovative standards. Whilst it is still not very appealing for any trading partner of China to be locked in a world of Chinese standards, this new structure will allow to focus on areas where real innovations are needed and where industry sees a potential on regional level. These opportunities may encompass many areas, from agricultural sectors, over services, until new high-tech developments: If the structure is sufficiently flexible – not dominated by a government determined Chinese standardization system – it will allow the joint development of standards on a regional level as pre-cursor of new international standards.

During the negotiations of the RCEP¹⁷ agreement several workshops on a specific chapter on “standards, regulations, and conformity assessment procedures” (STRACAP) were held. However, it is not expected that this chapter will include concrete and specific measures on harmonization of standards – considering the careful approach this agreement is taking towards the differences in development and economic structure in the participating countries. This leaves the emphasis on cooperation for future standards and measures to harmonize conformity assessment procedures.

The new structure of Chinese standardization will allow China to more forcefully engage in such discussions: Standards compiled by Chinese trade associations might be considered “less political”, thus also more palatable for an audience very sensitive about any sign of Chinese dominance in the region. However, as mentioned before, this will work only if Chinese industry truly takes the lead in future Chinese standardization work.

Regarding a potential participation in TPP the impact of current reform might be limited: TPP¹⁸ requires concrete steps of harmonization of standards in selected priority sectors – and this will affect primarily the still existing compulsory standards: It will be very difficult for China to move closer to the TPP requirements as long it sticks to a dual system of standardization combined with compulsory licensing measures such as CCC. Participation in TPP would require that China makes much greater changes to its quality infrastructure, the new “association standards” – albeit important – are just a first step in this direction.

¹⁷ The Regional Comprehensive Economic Partnership (RCEP) is a proposed free trade agreement (FTA) between the ten member states of the Association of Southeast Asian Nations (ASEAN) (Brunei, Burma (Myanmar), Cambodia, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand, Vietnam) and the six states with which ASEAN has existing FTAs (Australia, China, India, Japan, South Korea and New Zealand). The Agreement should be concluded in the first quarter 2016.

¹⁸ The Trans-Pacific Partnership (TPP) is an ambitious free trade agreements signed in October 2015 between the 12 countries: US, Japan, Malaysia, Vietnam, Singapore, Brunei, Australia, New Zealand, Canada, Mexico, Chile and Peru. China is not part of this agreement. The pact is aimed at deepening economic ties between these nations, slashing tariffs and fostering trade to boost growth. Member countries are also hoping to foster a closer relationship on economic policies and regulation. The 12 countries have a collective population of about 800 million - almost double that of the European Union's single market. The 12-nation would-be bloc is responsible for 40% of world trade.

4.2. Consequences for “one Belt one Road”

The “one Belt one Road”¹⁹ initiative is – unlike RCEP or TPP a very much Chinese dominated idea: China is moving its political and trade efforts into an area without much of a regional organization and with economically much weaker players than the ASEAN group represents. In such an environment the new standardization structure might have a decisive impact: Since Chinese standards will come along with a major investment drive and the prospect of increased participation in logistics for global trade, they might be more acceptable than in any other trade area.

This will work if China manages to convince its future partners that a) Chinese standards are not in conflict with international standards, they are covering mostly areas where on international consensus exists, or which are not covered by international standards, b) Chinese standards do indeed reflect state of the art and do not represent lower quality and safety requirements, c) China is able to negotiate these standards and adjust these based on the outcomes of these discussion with the partners. The new “association standards” do have the potential to fulfill all three conditions, if the system really works as anticipated.

China has already announced that one the targets of the initial agreements with the countries involved in the “one Belt one Road” initiative is the harmonization of several hundreds of standards. These standards are considered an essential element for improving trade and infrastructure along the “one Belt one Road” corridors. This might include areas such as railway construction, logistics, steel classification, etc. – all areas where no coherent framework of internationally harmonized standards exists. Thus, there is a chance that China finally is able to export some of its standardization deliverables in areas of serious concern for Chinese industry.

5. Responses

5.1. Issues to be addressed

The standardization reform needs to be supported by additional actions to become more sustainable. There are three main issues to be addressed: 1) The support of Chinese industry is not guaranteed, 2) Existing monopolies and oligopolies in China might be willing to abuse the system for non-competitive behavior, and 3) Institutional resistance remains an important issue. Together they have the potential to derail the standardization reform, despite the massive efforts involved in changing current structure.

As outlined before, the support by Chinese industry requires a change in attitude of Chinese industry:

¹⁹ The “one Belt one Road” initiative is a key element of the foreign policy of the new leadership in China: It is the outreach to central Asian nations as part of a new trading network across Asia from China to Europe. Core elements are improved transportation links (such as a planned new rail link from Western China to Teheran), increased investment and economic cooperation, and eventually also increased political cooperation. In the field of standardization a first cooperation agreement was discussed in fall 2015 including central Asian countries from Mongolia to Armenia.

- Chinese industry will have to re-allocate resources from compliance management towards a pro-active shaping of a business culture where health, safety, security, and environmental soundness of products and services is foremost their task to achieve. They have to define risks and related remedies themselves and they have to actively participate in shaping the underlying standards.
- Chinese industry will also have to learn to engage and cooperate in defining and shaping standards for future markets, without government support, but together with international competition. This requires a sensitivity for both international and domestic developments, and a willingness to abstain from globally incompatible “China only” solutions.
- Finally the issue of non-competitive behavior must be taken seriously: Without any safeguard measures the system has a high risk of failure, both through domestic monopolies and/or through cartels with Chinese participation. Thus, either government or industry associations themselves will need to establish a neutral body fighting against such tendencies.

The success of the Chinese reform of standardization is not only important for China itself but also of relevance for all trading partners of China. Standards are a major tool of market access. Problems in standardization often translate to problems in trading with China since less transparent and less penetrable markets often increase cost for doing business with China. Globally incompatible solutions in China have the potential hamper global efforts to increase protection for consumer and environment and might become also increasingly a global security risk. The success of these Chinese reforms will impact also global cooperation on standardization on all levels. However, however, it is also through cooperation that we can influence the Chinese system, and this shall be outlined in the next chapter.

5.2. Cooperation with China

We can help to increase participation of Chinese industry by sharing of our experiences in standardization. Such sharing can be part of direct and informal cooperation between companies, or institutionalized in cooperation between industry associations. This will have benefits for both sides: It will lead to increased participation of foreign industries in Chinese standardization work, and it will help Chinese companies in their participation in standardization activities overseas: Chinese companies can accelerate their learning about how to effectively initiate standardization processes without government support, foreign companies will learn from Chinese companies how to make more effective contributions to the Chinese standardization process.

In this context it is essential that the Chinese associations involved in standardization process refrain from discriminatory practices: Full access to all standardization activities, no extra charges for foreign organizations, no restrictions on participatory rights in the standardization process, transparent and open communication, etc. are a must if such cooperation should work harmoniously. Equal participation for all stakeholders, including foreign owned and managed companies, has to be an essential part of the foundation of the new “enterprise standards”, if this concept is to become sustainable.

We expect that the dominant players in China use their strength also for increased international cooperation: Whilst current system severely restricts international cooperation²⁰ – the new instrument of association standards will allow mutual direct participation with foreign organizations involved in standardization. These contacts are essential to raise the international profile of Chinese standardization. We still see many standardization activities in China which seem to be disconnected from the rest of the world: Simple “study” of related international standards will not help to solve this problem – it requires active engagement and participation of Chinese industry globally. Direct cooperation between Chinese and foreign industry partners in standards and related quality control measures are also an important element to defend nationalistic and monopolistic tendencies in China.

Vested interests are probably one of the most powerful forces to block this development more on the institutional side: Compulsory standards offer simple reasons for defining any type of compulsory certification and inspection requirements: Even the best reform of the standardization system will probably not really bring the changes needed if compulsory standards are excluded from the process. Eventually China will have to phase these compulsory standards out, and replace them by a coherent framework of technical regulations. China will have to learn from form its trading partners that a system without compulsory standards and compulsory certification is actually increasing domestic protection at lower cost. A system without compulsory standards is also much more supportive of innovative solutions. Government dialogues can play an essential role to convey this message: The dialogues are a tool to continuously confront Chinese officials with alternative systems of governance.

5.3. Examples: Cooperation with China on Standardization

Whilst China maintains a well-established system of cooperation with foreign governments and standardization bodies, there is much less experience in direct cooperation on standards between industry associations or between companies. The new structure requires increased cooperation on these lower levels too – and here it is important to avoid the most common mistakes: Too late, too much government driven, or too one-sided approaches have been the cause for many failures, creating much frustration between the partners involved, rather than positive results. A few examples shall help to explain this:

Electro-mobility – if the dialogue comes too late

Most market players in the field of electro-mobility agree that there is a need for universally applicable plugs and sockets for the charging of electrical vehicles. Whilst the “slow charging” can be undertaken using the traditional infrastructure – though in combination with some intelligent communication tools – there is a need for a new plugs and sockets allowing fast charging with higher Voltage. Whilst many manufacturers and power distribution networks developed their own type of connectors, they agree that a unification is needed, and that the price might be to abandon their own

²⁰ Under current regulations all international activities in standardization are controlled by SAC. This applies not only for formal cooperation in international standardization bodies, but also for other direct contacts in globally relevant standardization organizations. It is the hope that the associations and enterprises newly in charge for standardization will have more freedom in their international activities in standardization

initial ideas. Discussions within Europe, and between Europe, US and Japan, led to a compromise which for a harmonized set of connectors, outlined in the respective international standards.

However, these discussions took place without China and without contributions from Chinese standardization experts. When the partners eventually decided to include China in this dialogue, the main specifications were already decided. The focus of the discussion was then to have China to sign up to these previously agreed compromise. This did not work well, and China never agreed with these common specifications. Nevertheless the discussions continued: Today it seems that the dialogue is more on an equal footing, where Chinese standardization deliverables are equally taken into account.

Industry 4.0 – a top-down driven cooperation

Since the inception of the idea of “industry 4.0” China was interested to participate. This concept was considered an important tool to accelerate innovation of industry also in China. The promotion of industry 4.0 by the German government was met with equal enthusiasm by the Chinese government, leading to many early cooperation agreements. Chinese officials were and still are eager to learn more about the underlying concepts, and how industry 4.0 can be adapted for China. In spring 2015, China eventually developed its own industrial innovation program, calling it “made in China 2025”.

The enthusiasm by German and Chinese government officials was though not met by matching activities between companies and industry organizations on the ground. In fact, German industry was rather reluctant to engage with China on this topic at such an early stage. This passive attitude was reflected also in cooperation on standards, where early initiatives did not lead to concrete activities: Whilst an agreement was found in the respective government dialogues, there was little activity on the ground. Only recently, a working group on standards for industry 4.0 was created, which should start operating in 2016. For those who followed the government dialogues this was a very slow development.

Mutual Acceptance of test results – a unilateral exercise

Both government and industry agree that it would be helpful if China and Germany are to agree in a simplification of market access. They namely hope to address one of the persistent complaints of German industry in China, that compliance requires a re-testing of all products in China. This re-testing is considered to be costly and time consuming, despite being without added value regarding safety or interoperability of products. The problem exists though only in China: For imports to Germany there is generally no requirement for retesting – with exception of the few products requiring a test report from a “notified” laboratory. As a consequence, a dialogue was started with China to discuss the options for a mutual recognition of test results.

From the beginning this was a one-sided discussion: Since Germany does not have many compulsory certification schemes, there is not much to “mutually” recognize. European technical regulations allow testing either in any testing facility, or at least in any notified testing body. The manufacturer or importer have to ensure that the selected testing facility is sufficiently qualified. On the Chinese side though, many products require compulsory certification. For this certification a re-testing is required in an appointed laboratory in China. For market access to China, a recognition of test results obtained in Europe would be very helpful. For market access to Europe there is no need for such recognition. As can be expected, the discussions did not lead to any major breakthrough.

6. Conclusions and Recommendations

The standardization reform is in danger to get stuck: It is not sure that the domestic industry will participate as anticipated, and vested interests might hijack some of the most innovative aspects of the reform. Such failure will have a negative impact also for trade with China. It is thus in the interest of both China and its trading partners to make the reform a success.

Whilst the Chinese organizations involved in standardization will have to identify and implement solutions to address the problems, the international community can actively support China in making the changes more sustainable. Cooperation is needed on all levels, most importantly though on a company to company level. Whilst the new structure empowers companies and supports increased cooperation, this will work only if these companies are willing to assume their new responsibility in standardization: They need to commit more resources for the process and will have to assume more responsibilities. However, also the Chinese government must take action: They need to accelerate the reform, especially in the field of technical regulations.

The reform is especially interesting since China continues with maintaining in parallel compulsory and voluntary standards: Compulsory standards will continue to replace technical regulations, despite all the known disadvantages such compulsory standards entail. On the other hand voluntary standards shall become more innovative and export oriented through a decoupling from most of current government controls. These two tendencies contradict each other and it is still unclear how this system is going to work in reality.

It seems that China is moving to a kind of double speed system, where standards addressing primarily safety, security and environmental soundness of product and services fall under increasingly strict government control, whilst the rest of standards will be driven by commercial need and/or stakeholder interests. In such a system the compulsory standards are designed to be non-innovative with little impact on international level, whilst the voluntary standards should become an important tool for increased international competitiveness of Chinese industry.

The Chinese standardization reform – if successful – will have a major impact on global standardization: It will enhance the visibility of Chinese standardization deliverables and at the same time make Chinese standards more competitive. The increased interest of China in regional cooperation, especially also the “one Belt one Road” initiative will demonstrate, to what degree Chinese standardization can influence China’s neighbors. However, the largest effect is expected for China’s trading partners: If successful the reform will lead to a rapid reduction of standard-related technical barriers to trade.