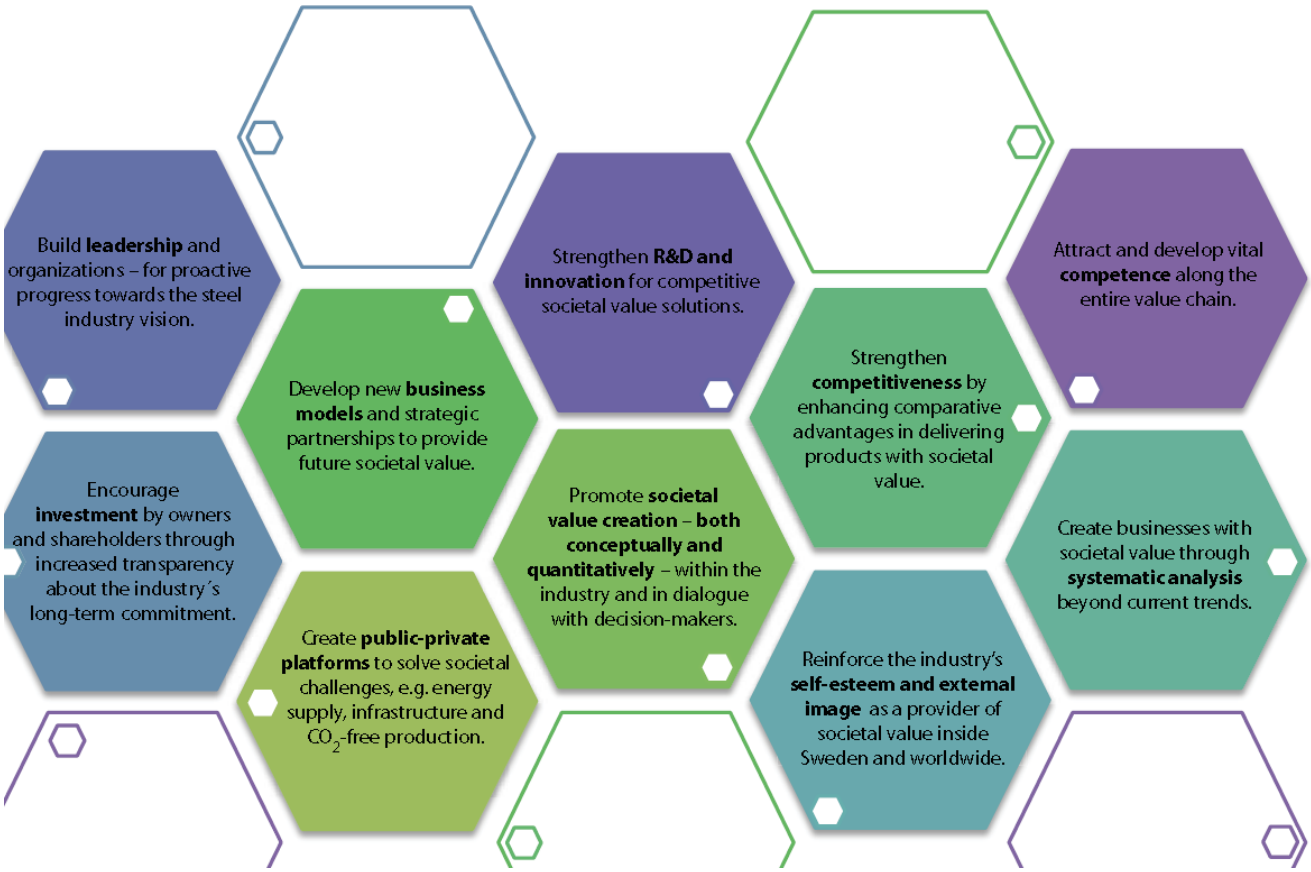
Jernkontoret
Swedish Steel Producers' Association

SEI Stockholm Environment Institute

Recommendations for a 10-point strategic action plan for the steel industry's vision #societalvalue



Project report to Hugo Carlsson stiftelse
The project "Swedish steel industry for increased societal value (Svensk stålindustri för ökad samhällsnytta), Stockholm, April 2016. Translated and updated june 2018, with an update on the final chapter on next steps. Translation with help from Rachel Petterson, Jernkontoret and Marcus Carson, SEI.

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Summary Vision 2050 and the project #societalvalue

The Swedish steel industry's 2050 vision "Steel shapes a better future" [1], contains three comittments:

• **We lead technical development**
Our research and innovation revolutionises technology for tomorrow's society. Our steel constantly challenges the frontiers of engineering.
• **We nurture creative individuals**
Our working environment fosters new solutions for communities through global collaboration. Our creativity constantly challenges the limits of contemporary thinking.
•**We create environmental benefits**
Our production uses resources so efficiently that only products of societal value leave our plants. Our ambition constantly challenges the limits of the possible.

From March 2015 to June 2016 the Swedish steel industry worked in partnership with the Stockholm Environment Institute (SEI)[2] to develop an action plan for realising the steel industry's vision for 2050. The projects main objectives were to generate a deeper understanding of societal value as a concept, and identify what the steel industry and other actors can do to achieve this vision. The work was carried forward by the conviction that Swedish steel products can make a major contribution to global societal value, that Sweden is a particularly good place for steelmaking, and that a focus on societal value can strengthen the Swedish steel industry's competitiveness.

This report summarises the methodologies used in the project, the concept of societal value, and a proposal for a ten-point strategic plan. The aim behind the project has been to ensure that the Swedish steel industry remains competitive and societally valueable, and that it has the ability to respond to a changing contextual environment while actively contributing to a better future. The proposed ten action points are mutually reinforcing, but collaboration between the steel industry and other actors will be needed to achieve a full realisation of the vision. The ten action points include:

- *Strengthen **competitiveness** by enhancing comparative advantages in delivering products with societal value.*
- *Encourage **investment by owners and shareholders** through increased transparency about the industry´s long-term commitment.*
- *Reinforce the **industry's self-esteem and external image** as a provider of societal value inside Sweden and worldwide.*
- *Create **public-private platforms** to solve societal challenges, e.g. energy supply, infrastructure and CO_2-free production.*
- *Develop **new business models** and strategic partnerships to provide future societal value.*
- *Create businesses with societal value through **systematic analysis** beyond current trends.*
- *Attract and develop **vital competence** along the entire value chain.*
- *Strengthen **R&D and innovation** for competitive societal value solutions.*
- *Build **leadership** and organizations – for proactive progress towards the steel industry vision.*
- *Promote **societal value creation** – both conceptually and quantitatively – within the industry and in dialogue with decision-makers.*

[1] http://www.jernkontoret.se/en/vision-2050/about-the-vision/
[2] For many years ranked as one of the most important environmental think-tank worldwide: http://www.thinktankwatch.com/2016/01/2016-think-tank-rankings-cheat-sheet.html?m=1

In conclusion, both the steel industry vision and the project results demonstrate that clarity and transparency about the aspirations of the Swedish steel industry help to generate creative dialogue and concrete proposals for action. The industry has everything to gain by continuing to be transparent with its long-term commitment to support change, renewal and innovation in collaboration with relevant stakeholders. This report was submitted to Hugo Carlson Foundation, which funded the project, and the proposals have been confirmed by the Board of Jernkontoret.

1 The Swedish steel industry for increased societal value in an uncertain future

There is great uncertainty about developments in the world - both in the short- (to 2020) and in the longer-term (through 2050) perspective. No matter what one believes or expects the future will hold, this uncertainty needs to be addressed by the Swedish steel industry as part of its efforts to achieve its vision to lead technology development, attract and develop creative employees and partners, and add societal value.

Involving more than 70 people from the steel industry, customers, authorities, politicians and researchers in a co-creation process[3], four explorative scenarios were developed[4]. The aim was not to predict the most likely future, but to instead illustrate a set of plausible but distinct futures for 2050. The scenarios were based on a first workshop where participants jointly brainstormed and assessed factors and uncertainties influencing the future. The four scenarios are summarized below:

Global Scramble: A race for strategic resources has led to a world that is divided into a complex web of conflicting alliances between governments and other players. Fragmented trade has created low global growth, with major economic, social and political differences. Countries with strategic resources, especially with regard to energy, have great advantages. There is continued high urbanization with increasing inequality and growing environmental problems. Extensive consequences are felt from climate change.	**High-tech Hamlets**: Increasing demand for locally and regionally adapted sustainable solutions has reduced global trade. At the same time, the exchange of value-creating ideas, knowledge and culture between different economic centres has increased. Green technology, infrastructure and energy systems have decreased CO_2 emissions and climate change is kept below 1.5 degrees. A large share of the GDP is used to cover the increased costs for energy and this reduces the potential for global growth, with large regional differences and increasing gaps as a result.
Transatlantic Green Consensus: A transatlantic revitalization has formed the hub of a resource-efficient economic development, where trade agreements and rules on market-access have gradually included large parts of the world. Joint public and private investment have kept down electricity prices, while more expensive transport has led to successful business models based on function rather than product. Increased data access and intellectual property rights have contributed to the development of resource-efficient products and processes. Temperature increases are kept down despite growing prosperity but prosperity/wealth is unevenly distributed between early and late adopters.	**Autobahn**: Continued market-driven globalization during the 2020's created productivity gains and economic prosperity, resulting in a growing global middle class with an improved standard of living. Market forces drove energy solutions, but at the same time increased the total dependence on fossil fuels. There were considerable initial successes to meet many of the development objectives of the UN's 2030 agenda but during the 2030's and 40's increasingly severe climate impacts and pressure on limited resources lead to regional collapse and severe implications for the global economy.

The scenarios served as a basis for a second workshop, where a total of almost one-hundered action points to maintain a competitive and societally valuable Swedish steel industry were proposed and analysed across all four scenarios. Combintions of strategic action points were subsequently brought togheter in portfolios where strategic actions complemented one another to ensure robustness over all four scenarios. The portfolios were further analysed by three working groups, each reviewing and refining the

[3] Co-creation is a management initiative that brings different parties together (for instance, a company and a group of customers), in order to jointly produce a mutually valued outcome (Wikipedia)
[4] https://www.jernkontoret.se/en/publications/steel-research/social-value-creation/scenariorapport/

strategic proposals on the basis of one of the points of departures below. The results from the three working groups were narrowed to the ten-point agenda presented in section 3.

Drive business development by promoting societal value creation
The Swedish steel industry has considerable potential to deliver the societally valuable soloutions that are necessary to meet future needs, such as advanced steel applications in products and systems solutions for building a sustainable society. To reach even further, the steel industry needs to utilise and commercialise all waste and by-products, and to realise CO_2-free steel production. A prerequisite for this is a continued shift from a reactive to a proactive approach that focuses on societal value creation. The Swedish steel industry has a strategic opportunity to take the lead in developing a concept of societal value based on the Global Goals in UN Agenda 2030, in order to promote utilisation of societally valuable solutions.

Develop collaboration for synergetic, client based and end user focused solutions
To be associated with responsible practices and sustainable products is important for the industry's ability to develop partnerships, to attract skilled staff, and to maintain and develop an active interest from financiers and investors. Active leadership will be needed to develop organisational and corporate culture and to realise the steel industry vision. Strategic partnerships can stimulate the development of business models that utilise the comparative advantages of steel to deliver societal values along different value chains. Changing societal needs and new customer behaviours require new types of national and international cooperation, where effective and rapid linking of internal and external value chains, and the ability to demonstrate how to jointly realise customers' societal value opportunities are becoming increasingly important success factors.

Engineered by Sweden! Comparative advantage in societal value creation
The Swedish steel industry needs to develop its self image from "the world's leading supplier of specialized steel" to seeing itself as the key player in the development of future societal value creation. This means to develop the traditional comparative advantages of the Swedish steel cluster to generate business opportunities based on societal value creation. The steel industry needs to deepen cooperation with domestic actors in industry, government and research. Public-private partnerships are essential to create conditions for the investment required to convert the steel industry to completely CO_2-free production, to ensure a stable energy supply, and to develop infrastructure and digital solutions. The government could contribute in its role as facilitator and purchaser of innovative solutions. Well functioning interdisciplinary research environments, and mobility between the industry, research institutes, academic institutions, and authorities are important factors in developing cooperation on comprehensive solutions in which steel, composites and other materials are included. Through cooperation with the education system and the labour market the Swedish steel industry can secure the future supply of expertise.

2 Societal value

The Swedish steel industry's commitment for 2050 is to use resources so efficiently that nothing but products of societal value leave the companies. But what does this mean?

Fundamentally, something that is appreciated in a given society based on that society's circumstances and preferences can be regarded as societally valueable. The Swedish steel industry's contribution to Swedish wealth represents a national aspect of societal value. At the same time, the extent to which Swedish steel products benefit the global economy relative to products from other producers could be seen as yet another and global dimension of societal value. Concequently, societal value is inherently contextual.

What will be societally beneficial or valuable in the future depends, first and foremost, on what the future will look like. The assessment of societal value also depends on the spatial delineation (global, national or regional focus), and on the time horizon – short or long term – that benefits are measured against. The concept of societal value can also facilitate the opportunity to carry out good business and investment to meet society's major challenges.

2.1 Different societal value in different scenarios

The definition of what can be considered most beneficial from a societal perspective depends on how the future unfolds. For example, a future with severe climate change, increasing global tensions and reduced trade will result in significantly different needs compared to a future of continued openness and globalization, where climate change is held in check. The Swedish steel industry has the potential to deliver solutions for a variety of societal needs, but this requires increasing proactivity through systematic monitoring to identify new business opportunities and potential threats beyond current trends. For example, it is clear that what may be considered most beneficial from a societal perspective would differ significantly among the four scenarios developed in this project. The action points that were proposed took into account various possible developments outlined in the scenarios, and all proposals were subsequently reviewed against all four scenarios. The remaining proposals were deemed able to deliver societal values regardless of which of the future development paths that proved most accurate.

2.2 Temporal and spatial aspects of societal value

As mentioned above, what could be regarded as societally beneficial and valued depends on the temporal and spatial context. Something that is useful to society today may no longer be so in a few decades; something that is valuable in a developed country may not have the same level or type of value in a developing country. The Swedish steel industry's contribution to societal value in Sweden is not synonymous with the societal value it can contribute in a global perspective. As an example, the negative societal values resulting from the industry's CO_2 emissions in Sweden can be contrasted to, and potentially offset against, the societal values emerging from exports of high-strength Swedish products that significantly reduce CO_2 emissions globally. Still, the societal benefits will be even greater if Swedish emissions can be substantially reduced.

From a Swedish perspective, steel production contributes significant societal value through export and tax revenues, employment and regional development. Sweden's steel companies are among the world's most eco-efficient steel producers. And there remains considerable potential for the future – not least when it comes to jobs and integration. But, there are also challenges, such as future infrastructure, energy and skills. By 2050, no products or processes that erode societal value or hinder societal

value creation should remain. Therefore, all waste streams must be utilised or eliminated by 2050. Arguably, the greatest challenge in this respect is the CO_2 emission from iron ore-based production, where large investments are needed both from the companies and the public. Shared goals and effective collaboration between society and business investment are needed to achieve CO_2-free production, and here, hydrogen may play an important role.

From a global perspective, the Swedish steel industry contributes significant societal value through unique products on the one hand, and relatively clean production processes on the other. Swedish high-performance steel products, often possessing unique properties, make it possible to combine good business performance and economic development with lower CO_2 emissions and reduced environmental impacts. Roller bearings for wind turbines and high-strength steels for lighter, more energy-efficient vehicles are good examples. Production processes that are often more environmentally friendly and resource-efficient than in other countries do already give Swedish steel an environmental advantage. Partly, this is a result of environmental regulations. But, it is also a consequence of a unique combination of the Swedish high-grade ore and a near CO_2 free energy supply, which have resulted in the Swedish blast furnace processes being one of the most climate-efficient in the world. Based on these comparative advantages the Swedish steel industry has significant potential to develop business opportunities around societal value creation. Consequently, increasing Swedish steel production could reap additional societal benefits in Sweden as well as globally.

2.3 Societal Value and the capital balance sheet

In a Swedish perspective, the societal values that the steel industry deliver could be assessed through the industry's contribution to the national balance sheet. In a global perspective, the scope would have to be broadened to how the industry itself and its products contribute to global wealth. Societal values –generated through the three basic types of capital, natural, physical and human – set the scope for future production, livelihoods and human welfare.

Natural capital is the assets and endowments that are provided by nature, including mineral, land and water resources. Depending on how well the community manages its natural capital it may be eroded or augmented, in which case societal value has been added by making the natural capital better fitting our needs. Natural capital can be either renewable or finite. Renewable natural capital is regenerated in nature, which ultimately represents the capital return that forms the foundation of a sustainable economy. Advanced steel products provide key functionalities in technologies for utilising the renewable capital from energy flows inherent in solar radiation, wind and waves. Finite natural capital cannot be restored. With appropriate systems in place, however, certain elements, such as iron, can be recycled extensively. The extent to which the steel industry directly or indirectly builds up, enables sustainable yield of, or erodes natural capital, is one component of a societal value analysis.

Physical capital is the capital stock of everything that is built up by society. Steel constitutes an essential part of this, including machinery, vehicles, construction materials, rails, etc. Smarter and more functional physical capital has a higher value. The longer it can be maintained, repaired, upgraded and used, the better it retains its value. While most physical capital is developed to provide some sort of societal value, it may, if poorly designed or used wrongly, harm society. The societal value of physical capital does also depend on who uses it and how it is used. The so-called consumer surplus – i.e. how much benefit anyone has from an item – depends on several factors,

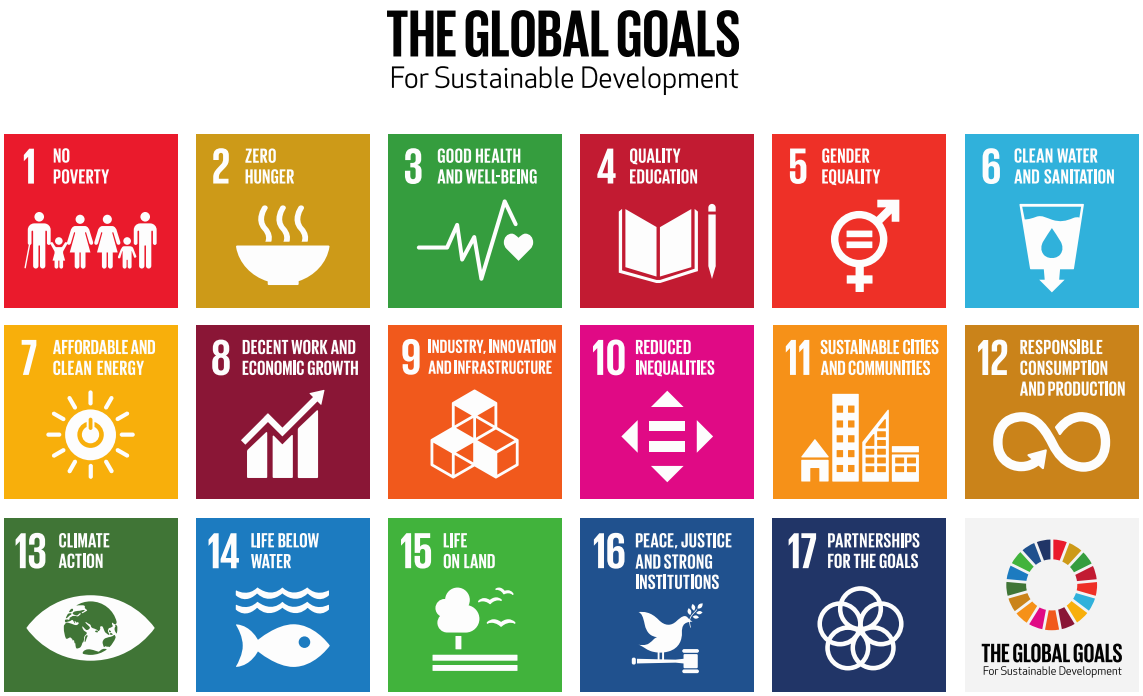
making assessment of societal values difficult. Yet, this must also be included in an analysis of societal value.

Human capital – potentially the most valuable type of capital – is the collective of human capabilities. Human capital is driven by factors such as health, education and tacit knowledge, and it continues to develop throughout a persons lifetime, and from generation to generation. Steel can contribute indirectly to building human capital through meaningful employment and contribution to sustainable energy, better healthcare and teaching.

All capital forms are needed for society to function. An industry sources its raw materials and energy needs from the natural capital stock, operates machinery in buildings that constitute physical capital, and makes this all happen in a process that is managed and operated by people based on human capital. However, for all the bits and pieces to work together, a range of actors need to cooperate in a complex web of contributing factors that is referred to as the **social capital**. This includes both the institutional factors that formally structure cooperation, including rules governing intellectual property rights and patents, and the informal norms and cultures that color our interactions and experiences every day. Without functioning social capital, it is difficult to reach higher social prosperity, regardless of the supply of the other forms of capital.

2.4 Could societal value be quantified?

In order to evaluate to what extent the steel industry contributes to, or counteracts the different forms of capital, a reference point – a benchmark or index – is needed against which societal value can be measured. Sweden's 16 Environmental Objectives could constitute such a reference point in a Swedish context. However, this would not include the societal value that the Swedish steel industry generates outside the country. Therefore, the UN Agenda 2030 and its 17 Global Goals (or Sustainable Development Goals – SDGs) offers a better option integrating the economic, ecological and social dimensions of the societal value concept. The global community has agreed on the SDGs as a target for global development until 2030. A total of 169 targets are in place and indicators are being developed both nationally and internationally, meaning that it will be possible to link analysis of societal value to the SDG targets both in national and global contexts.



To date, there is no established standard for analysis of societal value. It is uncertain whether there will ever be a common standard, for example, within the ISO or an EMAS (a regulatory framework for environmental management). ISO 26000, GRI and various ecological footprints, as well as standards for life cycle assessment, can be used for some parts of a societal value analysis. But there are fewer such tools for analysis of the impact on human and social capital. There does not exist a standard tool that can be applied to easily determine the societal value of a certain steel quality, a production process, or the usage of a certain steel based application. Consequently, to develop a tool to assess the societal value of steel, and how the positive aspects can be augmented and the downsides minimised, would be truly ground-breaking.

The SDGs could provide the starting point for a kind of index to quantify societal value, indicating how a certain steel quality of production process could have positive and negative contributions to different types of national and global capital and thus to societal value. Potentially positive contributions include employment, development of regions with few other workplaces, investment promotion, export earnings, facilitation of CO_2 reductions in the use phase of other products, and other environmental or resource improvements. Examples of negative impacts include emissions and other waste products.

Importantly, a tool such as this would need to be iterative, dynamic, systemic, interactive and allow for the consideration of context, as societal value is not static, but differs between geographic location and evolves over time.

2.5 To make business based on societal value

As argued above, societal value may be determined by how an activity affects society's balance sheet, i.e. the national wealth. A significant part of society's balance sheet, not least concerning physical capital, consists of the sum of company balance sheets. It is the companies' future earnings that will provide tomorrow's jobs and help develop the human capital. If companies in Sweden make the right strategic choices, attract financing, invest wisely, develop partnerships and networks for domestic and export markets, and attract skilled employees, then their corporate balance sheets will be

strengthened. If done in a sustainable manner, this contributes to building the national wealth and improving societal values.

It is the role of politics is align what is seen as profitable from a private or corporate perspective with what is socioeconomically beneficial, i.e. to use policy instruments to encourage societally beneficial actions by investors, producers and consumers. Public policy should make it easier, and more profitable, to act in a societal valuable manner, and make it more difficult – and more expensive – to act in a societally detrimental way, such as harming the environment or health. Such frameworks, particularly if they were seen as likely to govern policies in the foreseeable future, would send clear signals to investors, producers and customers about the virtue of societal value creation and business development.

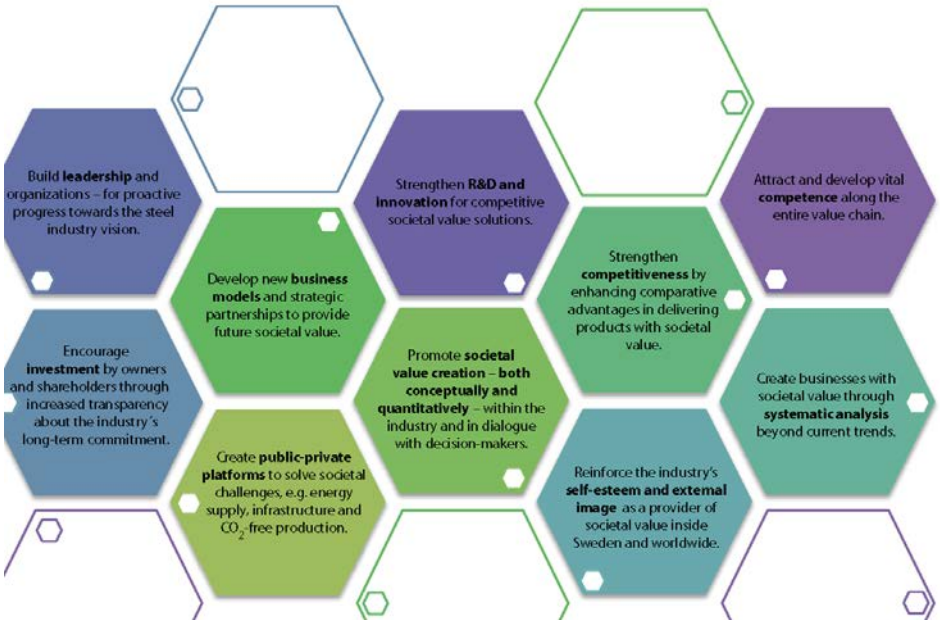
Societal value analysis can play an important role in showing how high quality steel with special properties while often commanding a higher price actually brings business value by reducing the total amount of material needed and increasing the product lifespan. Maintenance costs can be reduced, as can emissions during both the production and use phases, and higher revenues can be generated from recycling. This type of analysis should become an essential basis for long-term decisions by owners and investors as a higher share of added value could end up in Sweden.

The main responsibility of companies is to create value for shareholders and customers. Historically, this has meant delivering the right products, at the right time, and in compliance with relevant standards and legislation. In order to be competitive in delivering societal valueable products, companies need to develop business concepts that offer solutions that meet customers' needs – solutions where Swedish steel contributes substantial functionality as part of larger applications delivered in collaboration with other actors.

During the transition towards a world where the SDGs play an increasingly important role, companies will be faced with difficult choices. Strategic analysis must be made of what is profitable both in the short and long term. What may seem like good business in the short term may be ruinous in the longer term as a result of transitional changes or disruptive technologies. This will be the case when unsustainable energy and transport systems are phased out. Yet, new business opportunities will emerge as politics, business, customers, and researchers continue to advance the position of societal value creation. In this process, it will pay off to be foresighed.

3 Proposals for a Strategic Action Plan

This section presents ten strategic action points to bring the Swedish steel industry closer to its 2050 vision, taking into account uncertainties in the global development. The ten action points are not ranked by importance. Instead they complement one another. There is no linear process, but rather an iterative flow where different efforts are directed towards different actors at different times. Thus, no item can be checked off as being completed, because each action point affects several others. As outlined in section 1 above, the strategic measures that are proposed are relevant regardless of which of the four scenarios – or combinations of them – that actually plays out.



Strengthen competitiveness by enhancing comparative advantages in delivering products with societal value

In order to better utilise Swedish comparative advantages in terms of ore supply, near CO_2-free electricity and high quality Swedish steel, measures are needed to increase production of steel in Sweden. From a global perspective, it is good to produce in Sweden. It is important to clarify how circular the industry is as a result of the production of steel from scrap. At the same time, strategies are needed for managing the future scrap supply at a global scale to ensure that recycling and reuse are as efficient as possible. Promote systems with increased traceability. Participate in processes to design for recycling. Develop methods for recycling valuable metals. Educate a new generation of designers. Create conditions for cascading use by closing the eco-cycle and utilising residues where they have most value, for example using metallurgy slags in asphalt and residual energy in district heating systems

Encourage investment by owners and shareholders through increased transparency about the industry's long-term commitment

Foresight is needed to ensure future business without putting the short term economic viability at risk. The 2050 vision's long-term ambitions and commitments should be clearly communicated to direct and institutional owners, both jointly and by the individual companies. The advantage of societal value needs to be demonstrated as a concept for investors to understand future sustainability opportunities. A focus on societal value improves the ability to run the right type of business, to grow the business and develop it further along the value chain where willingness to pay for societal values is higher, thus strengthening the future prospects of delivering returns at lower risk.

Reinforce the industry's self-esteem and external image as a provider of societal value inside Sweden and worldwide

Show how societal value is distributed along the value chain and how the Swedish steel industry can contribute to a circular economy through factor improvements in both production and function. *Internally*, the Swedish steel industry needs to develop its self-image from that of "an iron and steel supplier" to seeing itself as a key actor in providing societally valuable solutions that meet future challenges. *Externally*, the image of the Swedish steel industry as a cluster of leading solution-oriented creators of

societal value must be more explicitly communicated, to important partners including customers and *their* customers, owners, politicians, universities, and research institutes.

Create public-private platforms to solve societal challenges, e.g. energy supply, infrastructure and CO_2-free production

Act to promote challenge-driven innovation policy where the industry is transparent about the long-term ambitions associated with the 2050 vision, such as CO_2-free processes in the steel industry. Take advantage of proposals for test-beds and demonstration facilities in the strategy for new industrialisation for Sweden[5]. Encourage the public sector to become a stronger partner and a competent innovation purchaser to stimulate the development of advanced technology and solutions. This can be advantageously linked to both the Global Goals and to new business opportunities in ways that benefit both industry and society. Develop the Swedish advantage in low-carbon energy production by promoting public-private partnerships to provide stable energy supply at a reasonable and stable price. Ensure a well-functioning, traditional and digital infrastructure.

Develop new business models and strategic partnerships to provide future societal value

Continue to develop customer value based on characteristics other than physical products and large-scale production, such as flexibility, design and application skills, product support, proximity, logistics solutions, forward integration, functional responsibility and materials circularity. Utilise when possible the possibilities for reusing steel instead of recycling it via remelting, which requires considerable energy input. Identify which business models that need to change in order to implement the above strategies and analyse how they can change over time, e.g. leasing of steel. Ensure that the price of steel products incorporates the societal benefits generated further down along the value chain. Ensure that the steel industry's products are standardised in contexts defined more broadly than simple material standards – including, for example, ability to reuse, diversity of applications and by-products. Build capacity to be flexible and fast-paced to cope with changes in demand for steel products, with technology for rapid changes, small series, flexibility in terms of volumes and products and small-scale steel production.

Create businesses with societal value through systematic analysis beyond current trends

Strategic, forsighted decision making focusing societal value creation will require a deeper and more nuanced analysis, and an ability to match insights with technology development opportunities. This will require more comprehensive knowledge acquisition than today. To do business with a focus on societal value requires ability to assess the situation beyond the direct competitive case which is often in focus today.

Attract and develop vital competence along the entire value chain

Cooperation with schools and universities locally and through national initiatives to ensure provision of necessary competences, both for the industry itself and in associated fields . Utilise the advantage that immigration offers in terms of labour supply, additional skills and international networks. Stimulate mobility between the industry, research institutes, universities and government. Strengthen other actors' appreciation of

[5] https://www.government.se/information-material/2016/04/smart-industry---a-strategy-for-new-industrialisation-for-sweden/

and knowledge about how steel in combination with other materials can create the foundation for future collaborative projects that deliver tomorrow's societal value.

Strengthen R&D and innovation for competitive societal value solutions

Invest in skills and cross-functional collaborations to create new cutting-edge products – steel, functional multi-materials and other applications with unique qualities for contributing to societal value creation. Focus on circular economy, adaptation to environmental and climate impacts, innovative solutions in sustainable urbanisation, and traditional as well as digital infrastructure. Extend cooperation with research funding and include companies, relevant industries, parliament, government, community planners and academics. Promote research in non-technical disciplines such as customer behaviour, sales processes, leadership, and intellectual property rights to develop new business models. Develop more integrated research environments (e.g. generic materials research), such as further development within ICME (Integrated Computational Material Engineering). Ensure that research programmes and other government initiatives have the concept of societal value in programme descriptions and calls for proposals.

Build leadership and organisations – for proactive progress towards the steel industry vision

More fast paced and future oriented leaders need to identify emerging societal values quickly and convert them to business opportunities and profit. The future of the employment market will challenge existing organizations and requires development of leadership. Business executives need to create more organic structures but at the same time provide a sense of security in the dynamic environment that will prevail in the workplace and communicate the value of each employee. Cooperation with internal and external partners must be further developed so that corporate cultures do not become obstacles for possible benefits of cross-fertilization. This spirit of knowledge sharing must also characterize the skills development of each individual.

Promote societal value creation – both conceptually and quantitatively – within the industry and in dialogue with decision-makers.

Take the initiative to promote and maintain dialogue with society at large about the need to work towards societal value creation. Provide specific suggestions on how societal value can be defined and measured, and how the steel industry can contribute to the UN Global Goals and other frameworks for societal value. This can also lead to development of better impact assessments which can be used as a basis for policy development and legislation. Develop a manual for assessing societal value for use in industry by e.g. market developers, production and development engineers, as well as with partners and decision makers in society.

4 Updates – what happened next?[6]

This report was originally submitted in April 2016 (in Swedish) to the Hugo Carlsson Foundation. The project results and the report were presented in May 2016 for the 70 people who participated in the work during the one and half year, all documented in a film[7]. In June, a outreach seminar was held on societal value which was also filmed[8]. In order to reach the common vision, long-term work is needed at all levels, and the

[6] This section has been shortend and updated since the Swedish version from 2016 – with all links new
[7] https://www.youtube.com/watch?v=6ileE6NTEVg#action=share
[8] https://www.youtube.com/watch?v=5uidFlfPkG4#action=share

proposals in the action plan were discussed in May in the board of Jernkontoret. Some of the suggested action points have already begun to be implemented while others require further discussion.

This English lauguage version is presenting the same content as the 2016 Swedish language version, but minor rewrites have been necessary to improve language and to reflect recent developments.

Further work after the project

It is already clear that the discussions about societal value need to continue, both internally in the steel industry and with other industries, politicians, authorities and ministries, as well as academia. Cooperation on a platform for CO_2-free steel production between SSAB; LKAB and Vattenfall[9] has already begun and will continue for many years. This report was accompanied by an application to continue cooperation between the steel industry and SEI for an additional year, to develop methods of quantifying societal value and arranging a series of workshops for actors from different sectors of society, such as owners, investors, clients and other industries. In order to promote the development of products with only societal value in which Swedish steel has comparative advantages, a "manual for societal value" is needed both for internal use and for decision-makers. The concept of societal value and the points in the Strategic Action Plan can also serve as a basis for the future direction of the Swedish Strategic Innovation Programmes (SIP) or other policy development. Work on analysing the Global Goals in relation to the steel[10] has already begun as well at the pulp- and paper and mining industry have used/will use the methods and scenarios from this project in their sectors.

A 2nd phase in the Hugo Carlsson Foundation funded cooperation between SEI and Jernkontoret started late-2016 with the aim to continue the dialogue about societal value and to develop a process and protoype tool for social value assessments of steel industry products and processes using the SDGs as a framework for evaluation. This 2nd phase is coming to an end in June 2018. More information is available online at the SEI[11] and Jernkontoret[12] websites, as well as Swedish Government[13].

There are currently plans for a 3rd phase of the cooperation which will focus on futher development of the processes and tools for societal value assessment and for quality assurance of the assessment of cross-linkages that exist between the different Global Goals and their targets. Such a 3rd phase is planned to begin during the autumn 2018 and continue through 2020.

[9] http://www.hybritdevelopment.com/
[10] http://www.jernkontoret.se/en/publications/steel-and-the-steel-industry/meeting-the-un-global-goals/
[11] https://www.sei.org/publications/a-societal-value-compass-for-the-swedish-steel-industry/
[12] http://www.jernkontoret.se/en/vision-2050/societal-value-creation/
[13] http://www.government.se/information-material/2018/04/implementing-the-addis-ababa-action-agenda-to-achieve-the-2030-agenda-for-sustainable-development--a-selection-of-innovative-examples/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