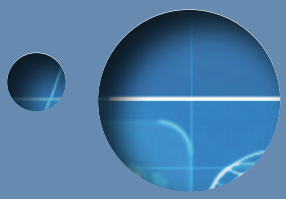
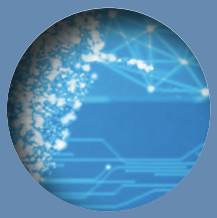
WORLD MANUFACTURING FOUNDATION

WORLD MANUFACTURING FOUNDATION STRATEGIC PLAN

2020 - 2025






WORLD
MANUFACTURING
FOUNDATION

World Manufacturing Foundation
Strategic Plan
2020 - 2025

World Manufacturing Foundation
Strategic Plan 2020 – 2025
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Editorial Team
Mark L. Casidsid, World Manufacturing Foundation
Ashtart Consultancy S.r.l

General Coordination
Marisa Marini, World Manufacturing Foundation

Visual Design

[ASHT*ART
CULTURAL MANAGEMENT]

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FOREWORD

Dear Stakeholders,

Two years ago, the World Manufacturing Foundation was established to promote industrial culture worldwide.

Leveraging on our experience in holding the annual World Manufacturing Forum which brings together the most important actors to discuss trends in manufacturing, we have given birth to a not for profit, apolitical, cultural, permanent and independent organisation.

The perfect triple helix (academia, public sector and enterprises) composition of our Founding Partners and main supporters allows us to have a 360-degree view on manufacturing as the main trigger of social well-being: enhancing its positive impact to the society is the guiding light in our life.

We have broadened the scope of our activities, deployed internationally and over the whole year, allowing us to stay permanently focused on advancing our mission.

Our target in the long term is to be present worldwide, allying ourselves with sister organisations, to generate and disseminate culture in favour of manufacturing, in its different degrees of evolution in different countries, and gather together our community once a year to present our Report (first edition published in 2018) within our traditional annual World Manufacturing Forum.

Manufacturing is changing fast and it is important to give prominence to the Foundation's role in this evolving manufacturing paradigm. In a space saturated by organisations with similar scope, it is important to differentiate ourselves highlighting our strengths which lie mainly on our global orientation and ability to bring together different organisations from all backgrounds and spur cooperation.

The 2020-2025 Strategic Plan is a culmination of a global effort and a collection of perspectives from different stakeholders. In this document, we have also presented a redefinition of our Vision and Mission, and outlined the key values that define and represent our organisation. We have made a lot of effort to understand what we mean for sister organisations and how they can be part of our journey in the next five years.

This highlights the importance to align our priorities with the expectations of stakeholders who impact and are impacted by our activities. To that end, we have also made a lot of effort to understand our impact through an intricate model that links our inputs and activities to our outcomes and desired change.

We thank our Founding Partners, Confindustria Lombardia, Politecnico di Milano and IMS International for kickstarting the Foundation motivated by their shared vision.

We thank Regione Lombardia, our co-kickstarter: without them this would not have been possible.

We thank key partners, the European Commission and the United Nations Industrial Development Organisation for their continued support.

We thank all our Institutional Partners and other organisations we work with.

We thank all our Sponsors for the trust and financial support they have given and will give us.

We also give credit to our employees who work tirelessly to advance the mission of the Foundation.

A special personal thanks goes to Roberto Maroni and Fabrizio Sala, respectively former President and present Vice President of Regione Lombardia, first mates in our journey, promptly followed by Attilio Fontana, present President of Regione Lombardia, for the personal trust on our dream. They believed in something non existing, not trivial in a world where responsibility is not easily taken.

We thank the over 150 respondents from all over the world who participated in the World Manufacturing Foundation Strategic Plan Stakeholder Survey through phone-calls and online questionnaires. Thanks to your contribution, we have presented a high-level vision of trends in manufacturing, understood the key defining features of our Foundation, and articulated the different expectations of our stakeholders. These helped us understand our positioning and define our strategic objectives which lay the groundwork for our future Action Plan.

Last but not the least we express our heartfelt gratitude to the following individuals who read and reviewed this Strategic Plan document and gave us their precious feedback: Federico Visconti, Rector of LIUC Università Carlo Cattaneo; Randy Zadra, our World Manufacturing Foundation Canadian Ambassador; Sergio Terzi, Associate Professor, Politecnico di Milano; Francesco Santini, Director Institutional Relations, Confindustria Lombardia; Teresa Morin, Special Projects Manager, IMS International; and Cristina Oyón, Head of Strategic Initiatives SPRI Basque Government.

We are a small but growing organisation and we want to think big. With your continued support, we are confident that we can achieve our aspirations.

Alberto Ribolla

President, World Manufacturing Foundation

We thank the over 150 individuals who have contributed to the World Manufacturing Foundation Strategic Plan


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PREFACE

It is without doubt that manufacturing has always been a potent driver to societal well-being and progress. Manufacturing is not only responsible for the creation of products and services that benefit society but also contribute to the creation of new jobs and value to several sectors and economic growth globally.

The World Manufacturing Foundation Strategic Plan 2020-2025 foresees a series of actions for the Foundation to further enhance its role. Stakeholder analysis and engagement, in particular ensuring that crucial resources and time are devoted to the most dedicated actors, is fundamental to achieving our long term goals. Strategic guidelines centered on three strategic spheres - **Expanding Knowledge**, **Promoting Innovation and Fostering Cooperation -** are linked to our different activities and outputs aimed to spread industrial culture.

All our activities, and their related outcomes allow us to help achieve our desired change – **Promote competitiveness in manufacturing** – a sector that is resilient, inclusive, sustainable, innovative, and attractive. In this way, we also contribute to the United Nations Sustainable Development Goals. In the coming years, we will put our strategic guidelines into actionable items to further enhance our impact and pursue our vision – to improve manufacturing's role as a dynamic and positive driver of economic equity and sustainable development worldwide.

Manufacturing Scenario

Manufacturing has historically been an important driver of societal well-being. Over the years, the sector has increased in relevance as many activities in other sectors depend on the manufacture of products. This multiplier effect, implies that a dollar generated in the manufacturing generates an even higher value for the economy. In addition to creating jobs, the sector has been pivotal in driving productivity and innovation, as evidenced in its significant contribution to value added, and share in R&D and innovation expenditure. Manufacturing is also spreading wealth worldwide through complex global supply chains as evidenced in the production of technologically sophisticated products.

Key societal megatrends are shaping the transformation of manufacturing presenting both challenges and opportunities.

Demographic changes, and in particular aging population in advanced economies, means older or retiring workers will reduce the supply of available manufacturing talent. On the contrary, emerging economies stand to gain from their relatively young populations, leveraging on their workforce to increase output and fuel economic growth. **Workforce diversity** is increasingly becoming relevant amid the need for an inclusive workforce to support innovation and productivity. This includes integrating foreign-born workers and increasing woman participation in the manufacturing workforce. **Cybersecurity and Responsible Data Use** is increasing in relevance as huge amounts of information are exchanged through digital means, requiring companies to adopt sound security strategies to protect crucial company assets, and ensure that data is not compromised. **Environmental Megatrends** such as climate change has been one of the most important issues affecting societal wellbeing. Co2 emissions have been reaching unprecedented levels leading to warming of global temperatures, rising sea levels, and extreme weather events. Not surprisingly, the most industrialized economies are among the top contributors of this emissions. Partly offsetting a past trend of setting up production facilities abroad to benefit from cost advantages, manufacturers have been increasingly **shifting to local production**. This is evident in the geographical clustering of supply chains with mega-supply chain clusters of Europe, North America and East Asia. This trend is also explained by the need to be closer to customers, automation of production, as well

as domestic policies.

Digitisation presents new opportunities and challenges for the manufacturing sector.

The emergence of new technologies is leading into the creation of new roles and fundamentally changing the required skills among existing and future workers.

Because of the lack of required talent, various statistical data point out to a shortage of workers and is expected to continue in the future. The skills gaps challenge in manufacturing can lead to wide ranging consequences such lost productivity, reduced innovation, and lower business performance. Digitisation also presents new challenges for small and medium enterprises (SMEs) which unlike larger companies have more difficulty in ensuring that their workers have the required skills and their organisation has the necessary resources to implement digitisation programs. In this sense, the digitisation in manufacturing is fuelling a digital divide among large companies and SMEs.

New business models such as servitisation in manufacturing are also increasing in relevance. While not a new phenomenon, advances in digitisation such as Internet of Things (IoT) and Big Data, are enabling servitisation. Servitisation creates potential revenue streams for companies, and could increase customer retention as they are locked into the company's services for the entire product life cycle.

Environmental considerations are also becoming increasingly relevant. There is a growing shift from a traditional economy to a circular economy in manufacturing, which prevents waste in the first place through more efficient use of materials and products and emphasis on their re-use. This evolving paradigm presents new challenges to companies requiring them to explore new ways to develop sustainably.

The scale of challenges in the manufacturing sector require closer cooperation among manufacturing stakeholders. Cooperation is essential to pool resources and share knowledge to develop new approaches that address relevant challenges. The Triple Helix model of cooperation, which includes three main spheres - the government, industry, and academia - has gained prominence in recent years in generation, diffusion and utilisation of knowledge and innovation. An extension of this model, the Quadruple Helix model also integrates the perspective of the society. Different forms of cooperation such as regional clusters and cooperation among various regions are also examples of how different stakeholders can collaborate.

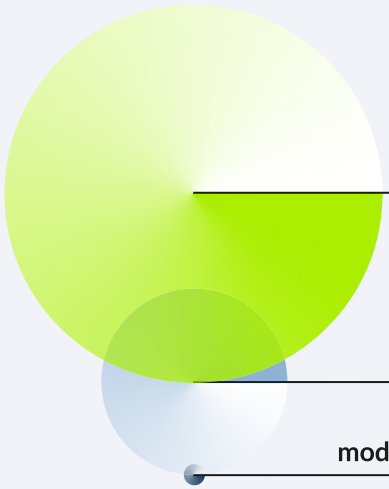
Manufacturing focused events such as the World Manufacturing Forum are increasingly becoming relevant as they bring together different stakeholders to exchange ideas on key trends pertinent to the sector. These events have become an accessible platform to learn about new technologies and developments as well as important networking opportunities. Non-profit organisations such as the World Manufacturing Foundation can assume a strategic role to allow these platforms like manufacturing forums to flourish, facilitating exchanges between different stakeholders.

In the evolving manufacturing paradigm, the World Manufacturing Foundation, stands out owing to its ability to bring together key actors from the Triple Helix Model and society and involve them in various activities. Through its activities, the Foundation aims to spread industrial culture worldwide, enhancing manufacturing's positive impact to society, and spur cooperation among different stakeholders to address the most significant issues in the sector.

The Strategic Plan was developed during the Covid 19 pandemic which not only caused significant disruptions in the manufacturing sector, but also led to significant economic and social consequences worldwide. Our future comprehensive Action Plan will consider what transpired during the pandemic, reflecting on how to stimulate the economy post-crisis and how can manufacturing respond to similar crises in the future.

Strategic Plan survey

In your opinion, how important is manufacturing in enhancing the societal wellbeing of the world?



very important
65.47%

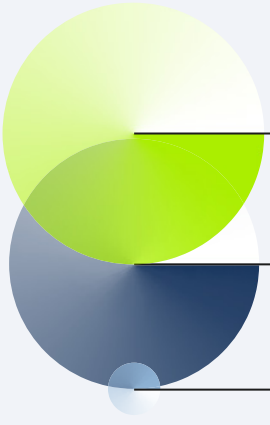
important
32.37%

moderately important
2.16%

slightly important
0.00%

not important
0.00%

How much do you agree with the following statement: The growth of the manufacturing sector will have more impact on environmental issues.



strongly agree
44.93%

agree
43.48%

undecided
8.70%

disagree
2.90%

strongly disagree
0.00%

Manufacturing is changing fast and it is important to give prominence to the Foundation's role in this evolving manufacturing paradigm.

In the coming years, we will put our strategic guidelines into actionable items to further enhance our impact and pursue our vision – to improve manufacturing's role as a dynamic and positive driver of economic equity and sustainable development worldwide.

METHODOLOGY

The Strategic Plan document consists of the following main sections

The Foundation

outlines our competitive advantage, history, governance and partnerships and visual identity, its main stakeholder groups, reformulated vision, mission and values and primary activities.

Our Strategy

includes outlines how we spread industrial culture, our impact and desired change, and our contribution to the United Nations Sustainable Development Goals. This section also includes our Action Plan Roadmap.

Logical Framework

As a logical framework management approach in devising this five-year Strategic Plan, we adopted a Theory of Change that summarises the Foundation's concrete actions and emphasises the ways in which these actions contribute to the spread of industrial culture. Our Theory of Change constitutes an effective method to define and help us achieve our manifold goals, as well as to monitor, evaluate, and assess our actions.

Manufacturing Scenario

A high-level discussion on the main societal trends, challenges affecting the manufacturing sector, and importance of cooperation to respond to those challenges is included in this document. The document was developed by reviewing existing literature in the topic and conducting the Strategic Plan Survey.

Strategic Plan Survey

The Strategic Plan Survey was conducted in the second semester of 2019 to collect perspectives of different stakeholders on various aspects of the stakeholder plan. Consultation with different stakeholders was instrumental in understanding the Foundation's positioning and role, reformulation of its Mission and Vision, development of its logical framework, and collecting suggestions in shaping our future action plan. The survey took the form of phone calls and online surveys. A selection of these questions is included in Appendix of this document.


09.8

Part 1

The Foundation

1.1
Foundation Overview Positioning and Role

The new industrial revolution needs to be approached as a turning point that improves action toward a sustainable future where people, the planet and businesses prosper over time. To face the revolution of economic and production systems, humanity needs to define and assume a new role to create innovative relation systems between human intelligence and smart tools. The Fourth Industrial Revolution requires new maps and a new mindset to adapt and shape radical changes that will continue to grow in size. Driving a dynamic path for business is a primary action in order to rebuild manufacturing with new rules and projects. To help change happen, radical and coordinated actions are required at different levels by several manufacturing players. Resilience, attractiveness, inclusiveness, innovation and sustainability are values proper of a competitive manufacturing sector, as a driving force for economic equity and sustainable development.

The World Manufacturing Foundation is an independent institution that aims to show the value and the importance of industrial culture by helping all the players involved around the world to use manufacturing culture as a primary resource to grow in size and increase economic and societal development.

The Foundation intends to nurture, help and support the growth of the manufacturing community creating social impact, through its challenges. The Foundation will catalyse change and conduct researches in relevant topics that involve applied and experienced knowledge. The Foundation plans to create international systems of partners that help it achieve its mission. Our strategy builds from the World Manufacturing Forum's experience through the years and it focuses on turning advocacy into action and building networks and long-term relations. Our expertise and commitment are needed by our stakeholders to put together different points of view and requirements, fostering the integration of different areas of interests. In the operating context of the manufacturing sector we will have a comprehensive spirit, a distinctive glance thanks to our Triple Helix nature, fostering a global vision and international relations.

What Differentiates the World Manufacturing Foundation from Similar Organisations?

The World Manufacturing Foundation, through its principal activities remains a unique player in the competitive segment thanks to the following features (Figure 1):

Dedicated organisation based in Lombardy, Italy working year-round, overseeing activities and engaging different stakeholders to support various activities.

Global Annual Events such as the World Manufacturing Forum that brings together different stakeholders, building a culture of shared decision making in response to manufacturing challenges.

Commitment to content generation through the World Manufacturing Report that contains key relevant recommendations that can easily be disseminated.

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World Manufacturing Foundation

Figure 1:
WORLD MANUFACTURING FOUNDATION
Versus Similar Organisations

Competitive Advantage

Our organisation is centered around:

Triple-Helix

We are at the intersection between academe, industry and government, to foster development and innovation, acting as a lens in which analyses related issues by a faceted approach and method.

Expertise

We leverage from the competences, skills and knowledge of our founders and interaction with a trusted group of practitioners, whose know-how is the result of real experience.

Magnetism

Our vision attracts ambassadors from all over the world who share the same excitement for the future of manufacturing.

Refinement

We produce scientific content which is the result of an internal research based on the needs of our stakeholders and shared best practices.

Achievement

We act as a strong and powerful institution, able to build connections and to relate with every type of organisation at a regional, national and international level.

World Manufacturing Foundation Through the Years

The World Manufacturing Foundation was formally established in May 2018 in Milan, Italy as a platform to promote industrial culture and sustainable manufacturing practices worldwide. This undertaking was spearheaded by three founding partners: Confindustria Lombardia, IMS International, and Politecnico di Milano.

Based in Lombardy, the Foundation aims to leverage on the region's globally competitive manufacturing sector and leadership in innovation to promote best practices that promote social well-being. The Foundation's headquarters is in Milan, a major driver of the economy and a city with a strong international outlook and home to world-class universities and research facilities, as well as big multinational companies and innovative start-ups.
The Foundation capitalises on its strong experience in hosting annual manufacturing events to discuss the most pressing challenges confronting the sector. In fact, long before the Foundation was formally established in 2018, the annual World Manufacturing Forum has been staged since 2011. The very first edition was held in the picturesque city of Cernobbio in Lombardy and started as an important platform for global industry leaders and other stakeholders to exchange opinions on different issues related to manufacturing. The Forum started as a project funded by the European Commission, which has also supported its succeeding editions. Up to this day, the Commission has been instrumental in elevating the international recognition of the World Manufacturing Forum by playing an active role in bringing experts to the event and contributing to its agenda.

The event aims to influence agendas of national and international policymakers to include courses of action that promote manufacturing competitiveness while preserving societal wellbeing. This was made possible by strong alliances with reputable organisations that are instrumental in formulation and implementation of policies that benefit the manufacturing sector. In the succeeding years, the event has been held in different cities: Stuttgart, Germany (2013), Milan, Italy (2014), Barcelona, Spain (2016), and Monterrey, Mexico (2017).

For the 2018 edition, the event returned once more in Cernobbio, Italy. The 2018 edition was the first Forum since the World Manufacturing Foundation was formally established. During the 2018 edition, the first edition of the World Manufacturing Report was also published. The Report is a yearly whitepaper developed with international experts that outlines the most important trends in the manufacturing sector. The 2018 edition outlined the World Manufacturing Foundation's vision of future manufacturing and contained 10 key recommendations to help governments and industries prioritise key actions that promote future societal prosperity and sustainable development. Since its publication, the Report has been presented and disseminated globally.

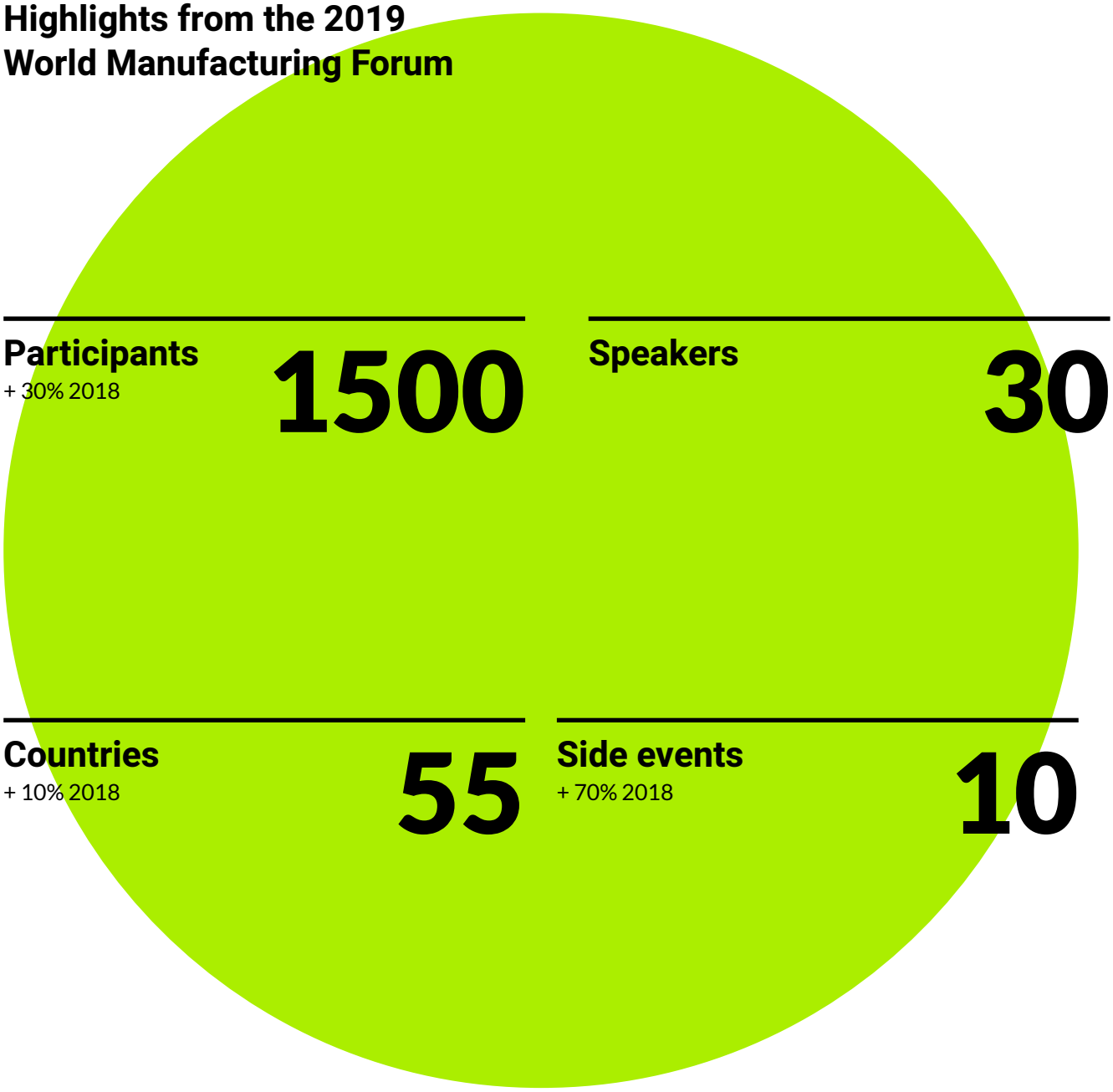
In addition to the Founding Partners, the Foundation has the backing of important organisations. The Foundation is financially supported by the Lombardy Region, one of the most industrialised regions in Europe. In 2018, the World Manufacturing Foundation also signed a joint declaration with the United Nations Industrial Development Organisation (UNIDO) to promote a common global agenda on technological innovation and inclusive and sustainable industrialisation, and to advance the 2030 Agenda for Sustainable Development. The UNIDO has been involved in inviting experts for both the World Manufacturing Forum and Report.

In 2019, the World Manufacturing Forum was held once more in Cernobbio and focused on the skills gap phenomenon widely felt in the manufacturing sector. The event was attended by over 1500 attendees from more than fifty countries.

On this occasion, the 2019 World Manufacturing Report was also presented. The Report entitled "Skills for the Future of Manufacturing" is a whitepaper that explores in detail the skills gap phenomenon in

manufacturing, identifies the top skills needed by manufacturing workers, outlines the main mechanisms in skills assessments and development, and finally proposes key recommendations to promote an educated and skilled manufacturing workforce. The 2019 Report was developed through a collaboration with an international group of 50 experts from over 20 countries.

Figure 2:



Governance and Partnerships

The Foundation Founding Partners include: Confindustria Lombardia, the employers' federation in the Lombardy region; Politecnico di Milano, Italy's leading technical university and IMS International, an industry-led, international business innovation and research and development (R&D) program.
The Foundation is led by its President and governed by the Board of Directors, which is composed of representatives from the founder partners. The Board of Directors is composed of three committees:

The Scientific Committee covers all activities related to the development of scientific content such as the World Manufacturing Forum.

The Programme Committee organises the agenda of the yearly World Manufacturing Forum.

The Ambassadors Committee manages the network of Ambassadors, who promote the World Manufacturing Foundation's activities in their respective countries.

Furthermore (from 2020 onwards, according to the bylaws) the Foundation governing bodies will benefit from the setting up of the Steering Committee, a body composed of representatives from external organisations with an advisory function on the Foundation's strategy and practices.

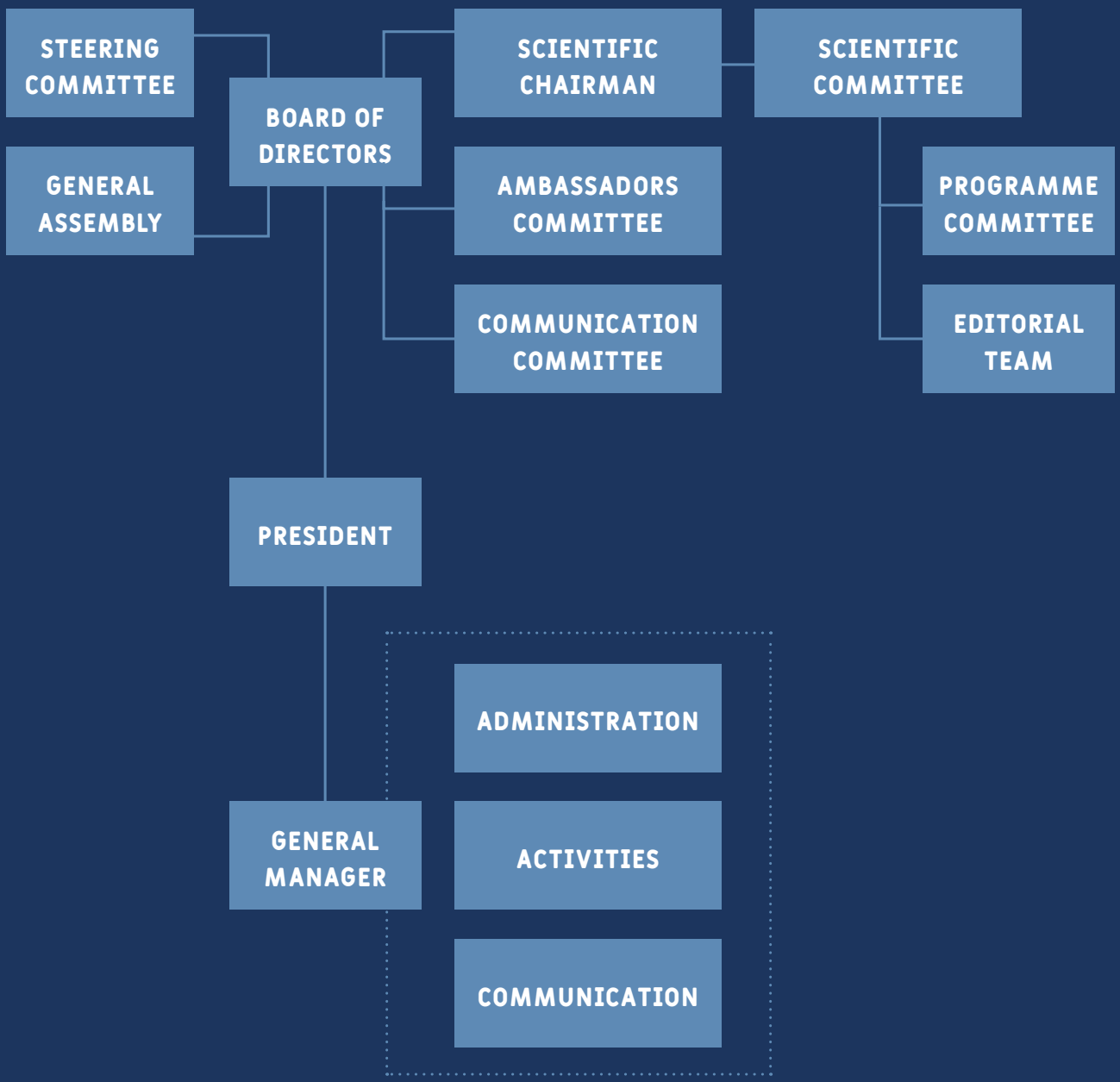


Figure 3:
WORLD MANUFACTURING FOUNDATION
Organisational Structure

In addition to its Founding partners, the Foundation also maintains partnerships with other key organisations which support the Foundation in different ways.
The Lombardy Region provides financial support to the Foundation. Other partners endorse the Foundation's activities.

Figure 4:
Founders and Key Partners

Founding Partners

CONFINDUSTRIA Lombardia

IMSI

POLITECNICO MILANO 1863

Thanks to

European Commission

UNIDO
UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

Regione Lombardia

The Foundation also interacts with Institutional Partners which include public bodies, as well as related legal entities or publicly-controlled entities, entrepreneurial associations, chambers of commerce, cultural associations related to manufacturing which, sharing the Foundation's aims, contribute to its activities and success.
Since its establishment, the Foundation was able to enlist the support of twenty Institutional Partners both from Italy and abroad. Many more organisations globally have expressed interest to become institutional partners for the Foundation.

Another key element of the Foundation's governance are the Contributing Partners which provide financial support to the Foundation. Contributing partners pay annual membership dues that entitle them to certain privileges regarding Foundation activities and participate in the Annual General Assembly. The Annual General Assembly is a yearly meeting in which key milestones of the Foundation are presented and different actors who have a stake in the Foundation's governance attend. Finally, The Foundation has a network of Ambassadors who agree to voluntarily endorse the Foundation's goals in their own countries. Ambassadors provide support in activities such as the World Manufacturing Forum and World Manufacturing Report.

Figure 5:
Institutional Partnerships (as of September 2020)

Visual Identity

The World Manufacturing Foundation aims to become a leader in the promotion, in the spread and in the support of manufacturing culture on a worldwide scale. The full development of the Foundation's visual identity has been functional to a revision of the vision and mission of the Foundation, too. This synergetic process allowed the Foundation to rethink its own identity, to expand the resonance of its leadership, and to become a facilitator in the communicative processes that the manufacturing sector is composed of.

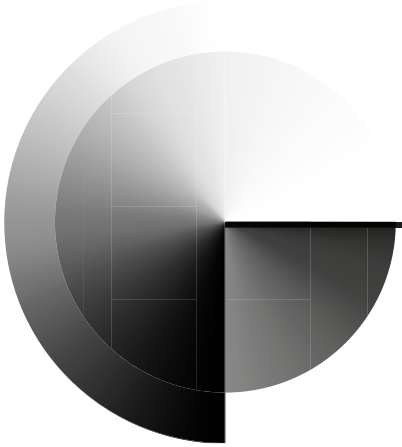
The design process aimed at working across diverse audiences, at building public awareness, at preserving the reputation of the Foundation and, ultimately, at upholding its value. The resulting brand identity expresses and valorises the strong, multifaceted identity of the Foundation through a clear and minimalistic visual language.

The Foundation's brand identity has been conceived according to this leading principle. This is reflected in the choice of colours, in the Foundation's logo, and, more broadly, in the organisation's digital platforms.

The logo embodies the leading values of the Organisation, by means of bold statements and a chromatic consistency with all the visual elements of the brand identity. The circular movement of the logo communicates the dynamism of the Foundation and the fast-changing world of manufacturing. Their circular intersection suggests the synergetic movement that the Foundation, through its leadership role, aims at establishing with its various partners and stakeholders. The colour palette suggests the interaction of all these elements. Colours are also used to differentiate the manifold activities of the Foundation.

The digital ecosystem reflects the characterising features of the Foundation and its nature as an "open platform". Through the digital channels, the Foundation seeks to become an editorial benchmark and to further amplify its openness, by creating a space where users are empowered and are able to become ambassadors of the Foundation's values themselves.

The design process aimed at working across diverse audiences, at building public awareness, at preserving the reputation of the Foundation and, ultimately, at upholding its value.



WORLD MANUFACTURING FOUNDATION

STRATEGIC PLAN

REPORT

FORUM

WEEK

1.2

Our Main Stakeholder Groups

The following are the main stakeholder groups that interact with the Foundation

Government

Government encompasses local, national, and transnational organisations such as the European Union. Governments, through their high level of authority and mandate, are instrumental in the formulation and implementation of policies that benefit the manufacturing sector. The Foundation is acting as a platform that helps shape government policy and allows policymakers to better understand the needs and perspectives of different stakeholders. This promotes informed decision making. Governments could also provide valuable resources to the Foundation such as the necessary funding, helping the Foundation to advance its mission.

Industrial and Trade Associations

This category includes industry trade groups and sector associations which represent the interests of companies on local, regional, national, or intra-national levels.
The majority of industrial and trade associations are non-profit entities and are aimed to shape public policy, acting as a focal point to understand industry needs and aid decision making. These organisations also conduct activities that benefit the organisations they represent such as providing access to different resources such as training, funding, and support in developing innovation capabilities.
The Foundation informs industry associations about new trends in manufacturing and acts as a platform to discuss key issues in the industry with policymakers and other stakeholders.

Manufacturing Companies

This category includes both manufacturing companies and companies that directly or indirectly impact the manufacturing value chain. It also includes both large multinational companies and small and medium enterprises. Through its various activities, the Foundation helps companies bring to the attention of policymakers the difficulties that manufacturers are facing, and contributes to finding solutions to those problems. Companies in turn share their real-world experience and best practices on how they are adapting to different manufacturing challenges.

International Organisations

International organisations and the Foundation support common causes such as sustainable industrial development. These organisations have similar aims such as helping policymakers on issues related to smart manufacturing and Industry 4.0. There are plenty of opportunities to collaborate with international organisations, fostering synergies between our capabilities to fulfil our shared objectives.

Academic and Research Institutions

This group includes universities, technical schools, and research institutions. These organisations have an instrumental role in the creation and dissemination of knowledge. Through research activities, academic and research institutions provide know-how to the Foundation on key trends affecting the sector.

In turn, the Foundation's activities such as the World Manufacturing Forum allow different actors to share ideas, helping educators become aware of schooling and training requirements needed in the Industry 4.0 environment.

Other Non-Profit Organisations

This category includes organisations with a different scope from that of the Foundation but are able to contribute to the fulfilment of the Foundation's mission.

Communications and Media Organisations

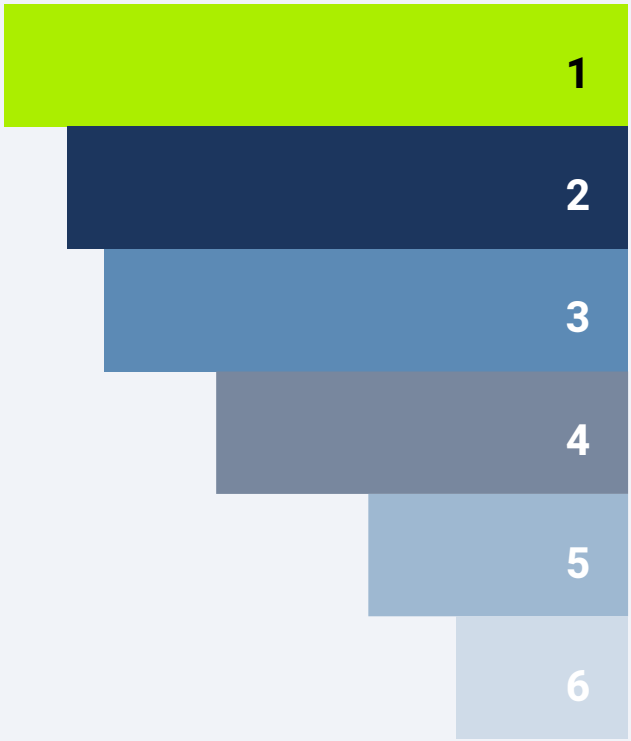
This category includes a broad range of multimedia organisations. Media organisations are invaluable to the expansion of awareness about the Foundation's different activities. In today's digital economy, there are limitless ways to share information to different stakeholders while maximising the impact of the Foundation's various activities.

Civil Society

Civil society represents the broadest group of stakeholders that could have an interest in the Foundation's activities. Civil society refers to, "the wide array of non-governmental and not for profit organisations that have a presence in public life, express the interests and values of their members and others, based on ethical, cultural, political, scientific, religious or philanthropic considerations."[1]

Strategic Plan Survey

Rank the following stakeholder groups (1 being most important, 6 as least important) in terms of relevance to achieve the Foundation's mission?



5.19 - Industry and Trade Associations (including manufacturing companies)

4.12 - Government Institutions

3.96 - Academic & Research Institutions

3.09 - International Organisations, Trade Unions and other NGOs

2.51 - Financial Institutions (incl. multilateral institutions like the World Bank)

2.13 - Media and Publishers

Vision

VISIO

“We strive to enhance manufacturing’s role as a dynamic and positive driver for economic, social, and environmental growth and sustainability”

The new and reformulated World Manufacturing Foundation vision is more concise and stresses on the Foundation’s role to improve and showcase manufacturing’s positive contribution to the society.

It underlines the three key dimensions of sustainable development – economic, social, and environmental.

N

Mission

The World Manufacturing Foundation is an open platform spreading industrial culture worldwide. We promote innovation and development in the manufacturing sector, with the fundamental goal of improving societal well-being and inclusive growth in all nations through dialogue and cooperation among the manufacturing sector's key players. We will pursue our goals by:

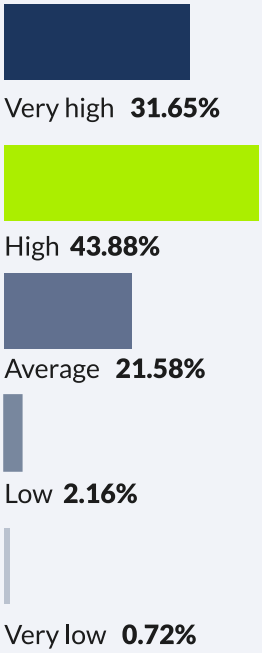
Supporting and **shaping** local and international industrial agendas

Providing a framework through which companies, governments, academic institutions and social organizations can interact or collaborate, acting as a catalyst for finding innovative solutions to major global challenges

Creating and **disseminating knowledge** in both policy and technology through local and international meetings and publications

Strategic Plan survey

How aligned is the Foundation vision with the priorities of your organization?



Very high **31.65%**

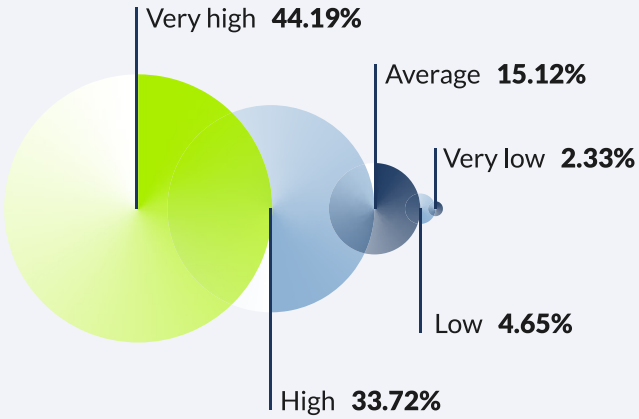
High **43.88%**

Average **21.58%**

Low **2.16%**

Very low **0.72%**

Please indicate your level of awareness of the existence of the Foundation.



Do you think the Foundation's online presence is sufficient?

Sufficient **16.18%**

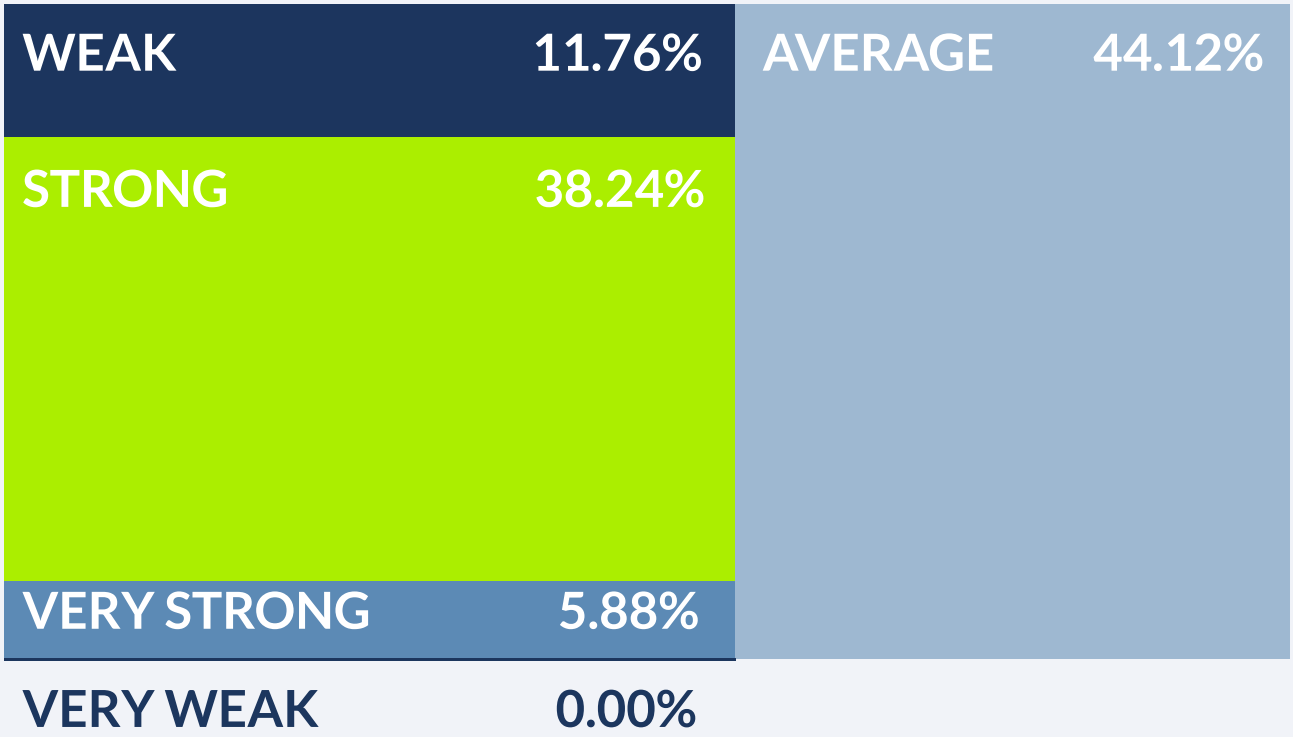
Somewhat sufficient **26.47%**

Neither sufficient or insufficient **29.41%**

Somewhat insufficient **22.06%**

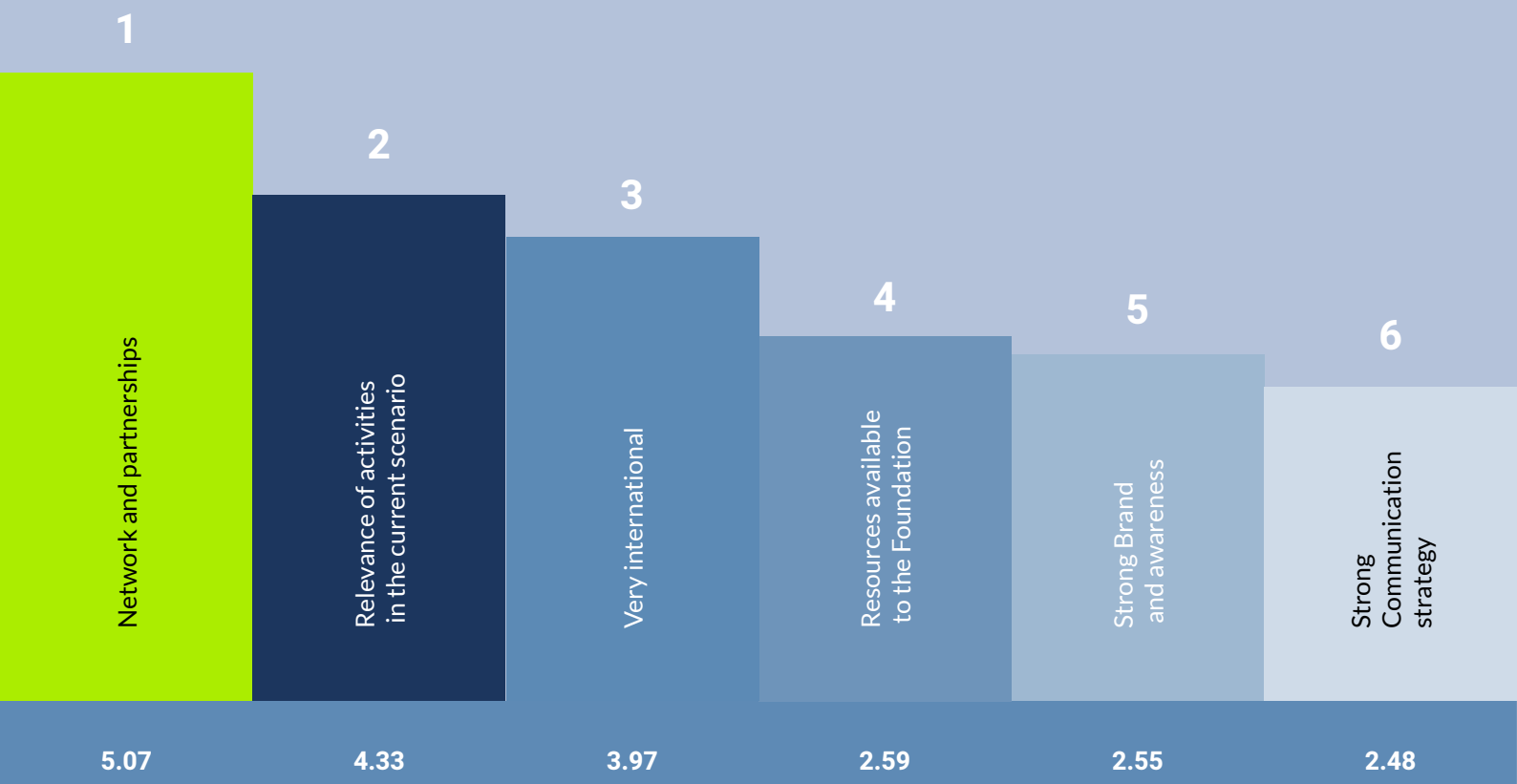
Insufficient **5.88%**

What is your perception of the Foundation's brand awareness?

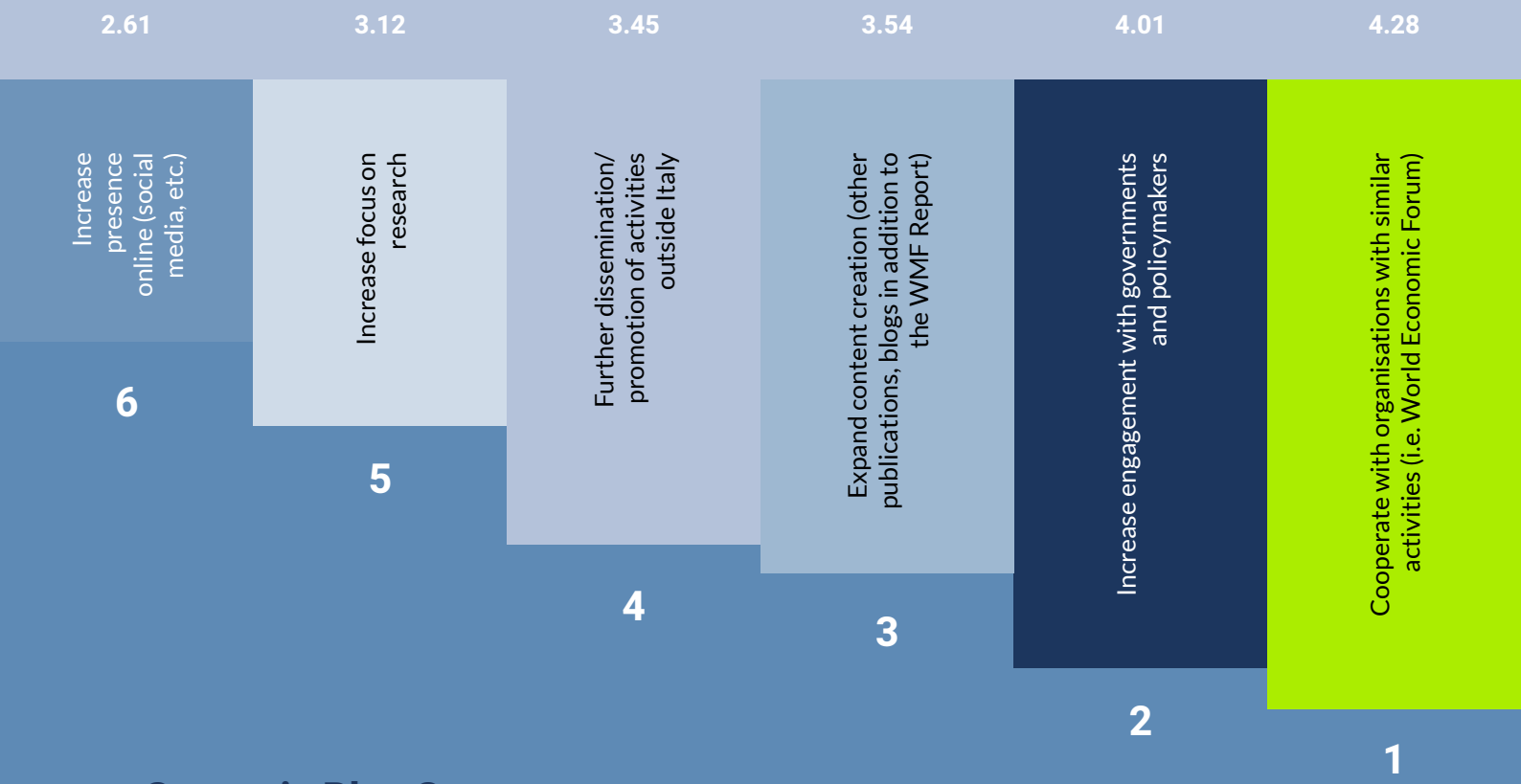


Strategic Plan Survey

World Manufacturing Foundation Strengths: Rank the following from 1-6 (1 as highest) according to your perceived relevance.

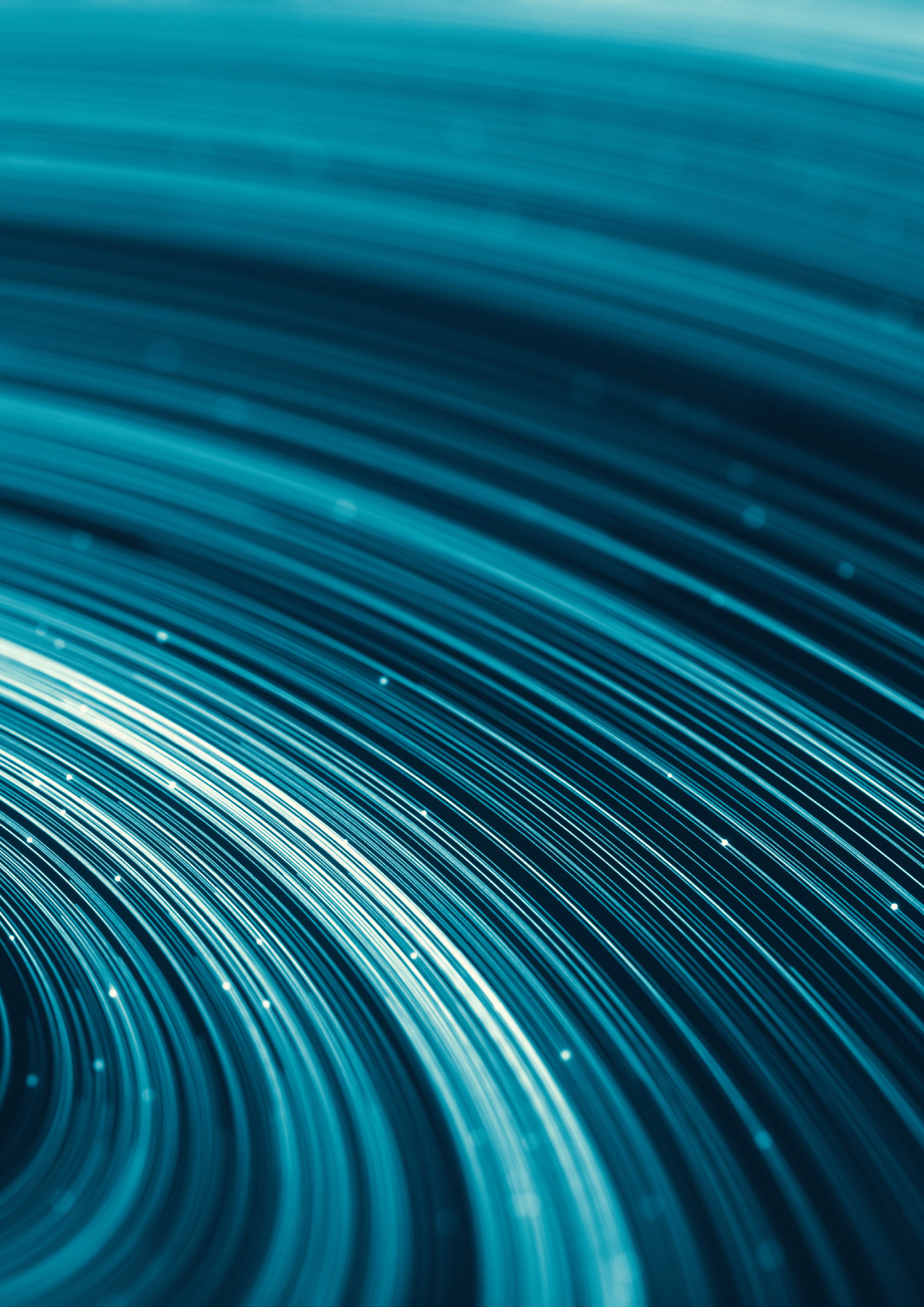


5.07	4.33	3.97	2.59	2.55	2.48



Strategic Plan Survey

Opportunities for the World Manufacturing Foundation: Rank the following from 1-6 (1 as highest) according to your perceived relevance.



1.4
Key Values

The following core values shape the Foundation's strategic priorities and guide its actions, influencing every facet of interaction with our stakeholders.

Sustainability

Sustainability encompasses economic, social, and environmental dimensions. Economic sustainability not only relates to growth in the manufacturing sector but also economic prosperity for all nations and their citizens. Growth and development should also not come at the cost of the society's welfare. Hence, it should take into account the needs of the different communities impacted by the Foundation's activities while also taking also into consideration the needs of future generations. This extends to the environment creating a safe and green atmosphere for generations to come.

Openness

We embrace diversity, advocating acceptance and respect of all persons regardless of their background, gender, or ability. We value differences in culture and backgrounds understanding its potential to be a catalyst for innovation. Moreover, we foster diversity in the stakeholders we interact with – organisations regardless of their size or country of origin.

Excellence

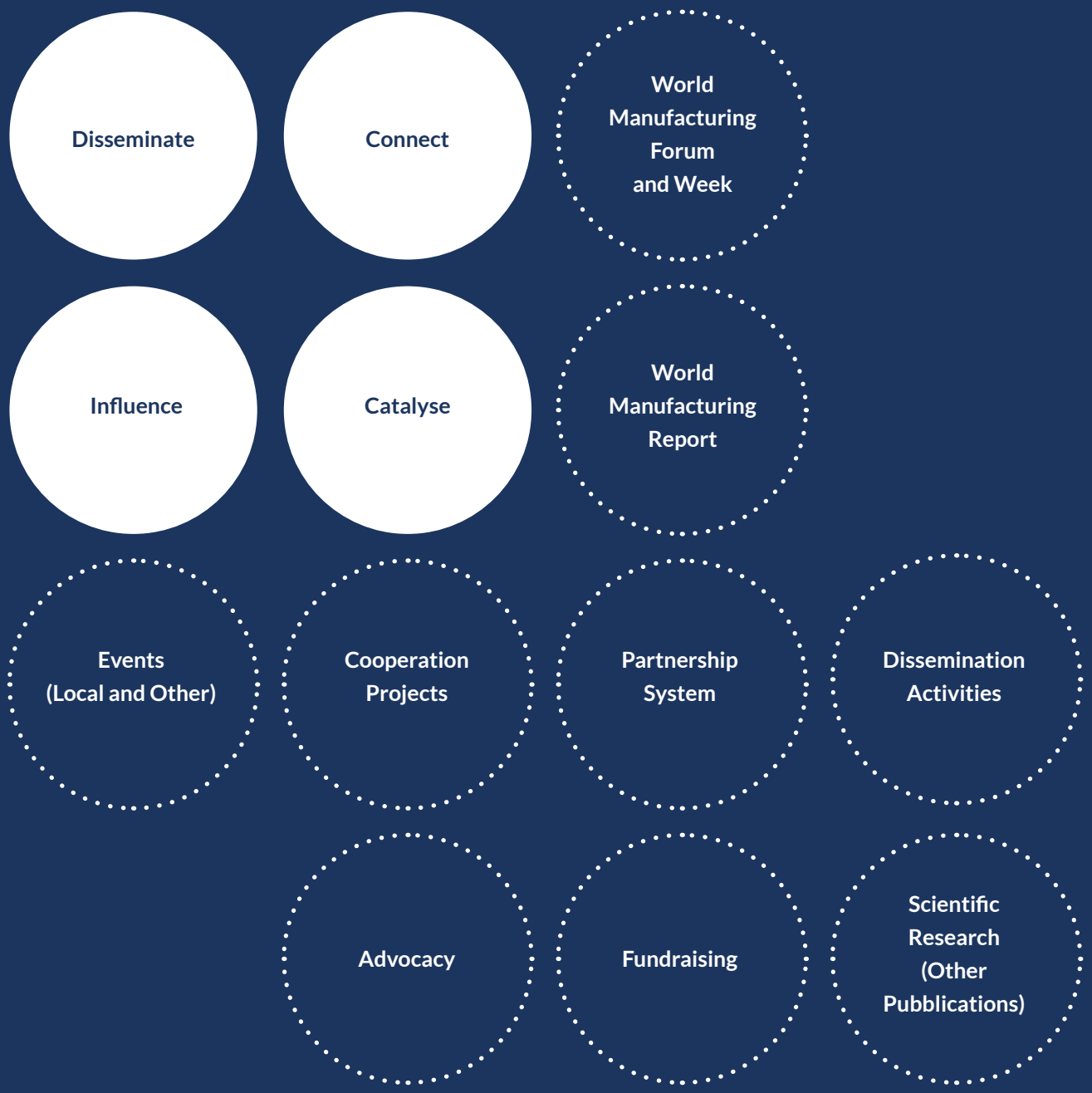
We strive to ensure that our approaches and outputs are in line with the best standards. We strive to continuously adapt to and evolve with rapid changes in the environment and improve our activities to fulfil its mission.

Global Approach

The Foundation has a global perspective acting as a focal point for different stakeholders from different countries – both developed and emerging economies. We aim to bring a global perspective in each of our activities showcasing stories and best practices from across the world.

Future-oriented Mindset

Having a strategic foresight of upcoming trends in the sector, the Foundation acts as a focal point for stakeholders to learn about these new developments and guiding their actions accordingly.


Disseminate
Connect
World Manufacturing Forum and Week
Influence
Catalyse
World Manufacturing Report
Events (Local and Other)
Cooperation Projects
Partnership System
Dissemination Activities
Advocacy
Fundraising
Scientific Research (Other Pubblications)
Activities
Outputs

1.5

Primary Activities and Outputs

To further our mission, we need to bring change within our stakeholders. According to our purpose we have identified **4 main actions** that best represent our commitment and create impact from industrial culture:

A. DISSEMINATE:

Inform, diffuse and promote the transmission of ideas.

B. CONNECT:

Relate different organisations, foster exchanges and build synergies.

C. CATALYSE:

Capitalise and optimise actions, needs of the manufacturing community and enhance scientific content.

D. INFLUENCE:

Represent and advocate shared interests, transmitting our vision and promoting our goals.

These activities are strictly related to nine different outputs. Each of these can be attended by our stakeholders, depending on the type of involvement. The activities aim to create contexts in which dialogue and cooperation are fostered to deliver support while extending our reach. We also strive to help our stakeholders benefit from being part of a group and learn from exchanging ideas.

This creates impact both by addressing the problem, incorporating good practices and solutions, and by expanding the messages, strengthening the role of the Foundation as a relevant voice among the manufacturing sector.

1
World Manufacturing Forum and Week: as a means to inquire about best practices, needs, approaches, mindsets and solutions to relaunch the future of manufacturing and create a holistic, inclusive and accountable background to foresee the economic opportunities of the future.

The World Manufacturing Forum, one of the most prominent activities of the Foundation, is a yearly event that brings together the most important stakeholders from government, industry, academe and other organisations to discuss relevant trends in manufacturing. The success and reputation established through previous editions of the Forum have built consensus and awareness to relevant global stakeholders for a long term and self- sustaining initiative. So far, the Forum has undertaken an increasing political relevance and has the capacity for attracting and engaging the attention of the brightest minds in policy, industry, business and academia. As a networking mechanism, the Forum offers the opportunity for different stakeholders to connect with other actors who are facing similar problems and thereby acting as a platform that enables the generation of solutions to those problems or open opportunities for collaboration. The Forum is also an important platform to share in an internationally prominent stage key experiences and best practices of companies to a wider audience thereby facilitating the transfer of information among different stakeholders.

In its future editions, the Forum will be the highlight of a larger World Manufacturing Week, a series of manufacturing related events that complement technical and plenary sessions present in the Forum.

2
World Manufacturing Report: as a key activity to engage different stakeholders by highlighting best practices and making them part of the solution to the most pressing problems in manufacturing.

The World Manufacturing Report is a whitepaper that examines key relevant topics for current and future manufacturing stakeholders and provide recommendations for future action. The findings and recommendations developed in the Report are useful and accessible for a wide range of stakeholders in order to collaborate within the manufacturing industry and to support a prosperous future for all. The Foundation therefore encourages the implementation of this report's recommendations to accelerate the transformation of the manufacturing industry toward global resilience, thus enhancing societal well-being. The Report is a culmination of a global effort from different stakeholders contributing to it. For instance, the recommendations published in the Report are developed with global experts from different organisations and countries who agree to share their expertise on the subject. The Foundation through its initiatives such as "open calls for initiatives" also allow organisations to share their best practices and be featured in the Report, providing visibility of these projects to a wider audience.

3
Events (Local and Other): as a means to build a diffused and shared manufacturing culture.

Regional and other events that either use the World Manufacturing Foundation brand or are organized by the Foundation, such as meetings, workshops, working groups, and any other related activity that are distinct from the WM Forum / Week. Regional events are held in specific regions of the world are important opportunities to engage local stakeholders. These events could also be utilized as an opportunity to explore a specific issue relevant in a geographical area. Most importantly regional events are important means to transmit the key messages generated from the Foundation's activities to national and local stakeholder communities.

4
Cooperation Projects: as a means to promote inclusive expression and shared learning.

The Foundation, leveraging on its global network, aims to facilitate interaction among different stakeholders. By doing so, stakeholders could undertake high impact projects that benefit the wider manufacturing community. Projects can be aimed at obtaining a common goal and are organised to develop a specific project.
The activities that characterise the implementation of cooperation projects can be identified mainly in exchanges of information and skills and to the joint realisation of common objectives. In most cases the project represents the combined effect of the two different activities. A cooperation project:

- facilitates mutual knowledge
- improves the quality of the project

offers the opportunity to accumulate knowledge, ideas, good practices

shares tools and methodologies to speed up the innovation process

As an example, the Foundation is a partner of the Young Manufacturing Leaders Network, funded by the European Commission in the framework of the EIT Manufacturing initiative, which aims to create a network of young individuals who will promote the importance of manufacturing, and the opportunities within the sector, in their respective countries.

5
Partnership System: as an asset to create a relevant network in order to develop stakeholders' needs and priorities.

A partnership approach is aimed at creating a network of organisations that are put together also for different and individual goals. The Foundation pursues different types of partnerships, from institutional representation to technical partners. The Partnership approach is strategic because it allows us to build a support network for the Foundation to spread our key messages, put together the resources for a common goal, and enhance our role and influence within the context.

This partnership system refers to both actors that have a stake in the Foundation's governance as well as other partnerships that provide value to our different activities. The first group includes the Founding Partners, Institutional Partners and Contributing Partners discussed previously in this chapter. Other forms of collaboration include strategic partnerships with selected organisations such as the Lombardy Region, the EU Commission, and the United Nations International Development Organisation. The Foundation strives to build relationships with organisations that could contribute to the fulfilment of its mission.

In the future, the Foundation also foresees the establishment of local chapters in major regions of the world, carrying the World Manufacturing Foundation brand, and composed of local or regional stakeholders. These chapters will spread undertaking projects and organizing events, in line with the mission of the Foundation.

6
Dissemination Activities: as a method to spread awareness on Foundation activities as well as knowledge, best practices and innovative solutions.

The Foundation participates year-round in different dissemination activities where the Foundation's key activities are promoted alongside content such as the World Manufacturing Report. These events include trade shows, industrial conferences, and workshops with themes that are related to the Foundation's scope. Dissemination activities are also instrumental in strengthening current partnerships and finding new partners.

An integral part of dissemination activities are all forms of communication to enhance the Foundation's visibility. A strategic area is digital communication as a means to reach new audiences and expand the foundation's message and narrate about its activities. The Foundation leverages key digital channels both to innovate communication delivery mechanisms and to reach new targets. Due to the prevalence of social channels, the Foundation maintains presence in all key social media networks. Digital communication is also instrumental to increase awareness about the World Manufacturing Foundation brand and our different activities and constantly maintain engagement with our stakeholders. We leverage digital communication to expand the geographical reach of our promotional efforts.

7

Scientific Research / Other publications: as a key to curate reliable content that reflects on the fast-moving transformation of the global economic and social system.

The Foundation foresees the development of other publications on special topics in manufacturing, complementing the annual Report. All exisiting and future publications provide a holistic perspective that offers accurate, non-partisan information to a wide group of stakeholders. In the future, the Foundation also envisions the creation of different committees comprising of representatives from different stakeholder groups which will undertake specialised research on key emerging topics such as Artificial Intelligence.

8

Fundraising: as a means to be resilient and durable, to expand the network of supporters and to collect funds for new projects.

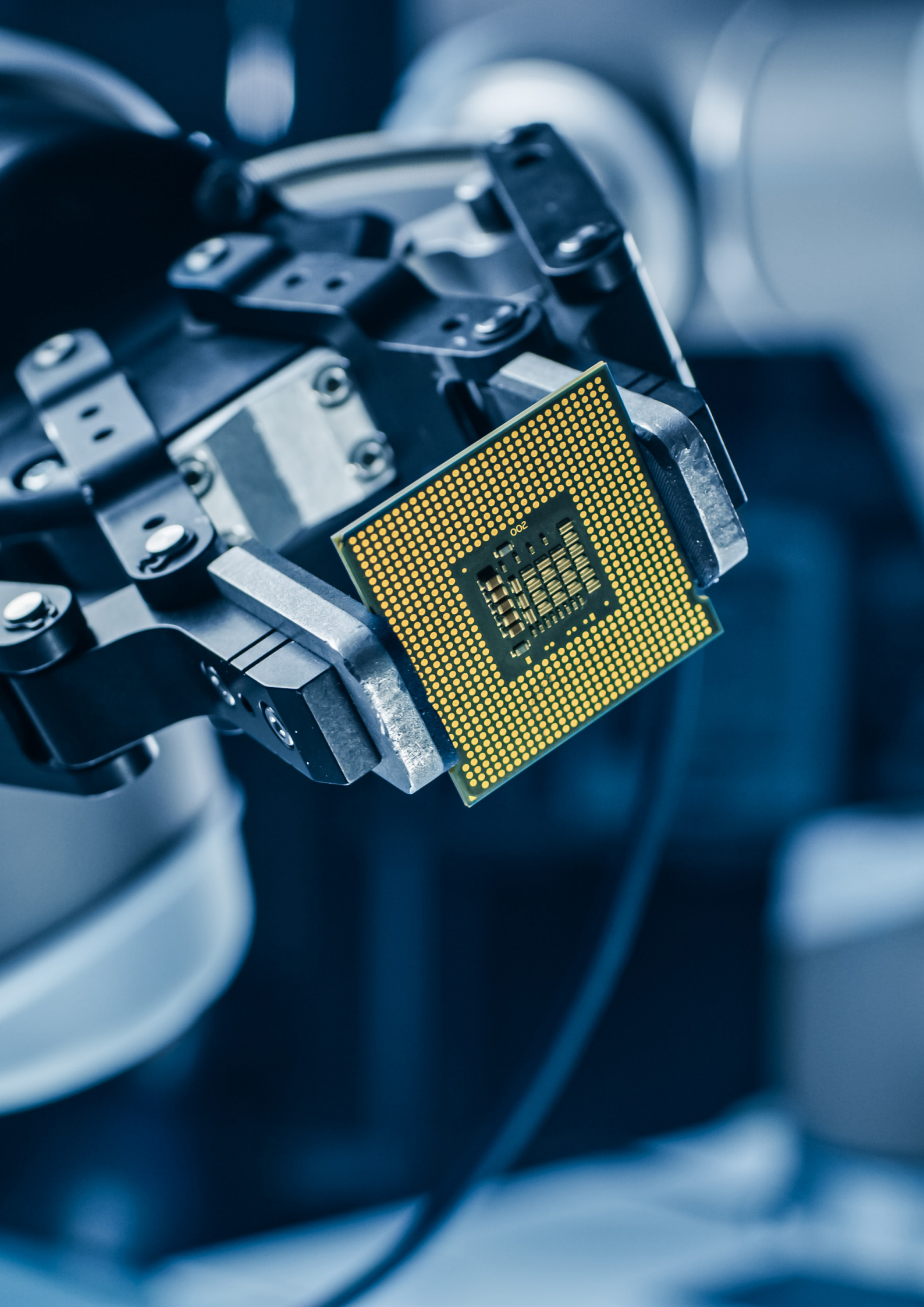
To sustain its activities, the Foundation actively engages different stakeholders to obtain crucial financing.

Financial funding is an enabler that complements the expertise of the Foundation to maximise the impact of its different activities. The Foundation receives funding from its key strategic partners as well as sponsoring organisations for the World Manufacturing Forum, Report, and other activities.

9

Advocacy: as a key factor to building a solid organisation and to influence all stakeholder groups.

Advocacy is one of the Foundation's key outputs. Informed by its Latin root advocare ('to speak out on behalf of someone'), our understanding of Advocacy refers to a deliberate process of directly and indirectly influencing stakeholders and relevant audiences, eliciting them to support and to echo the voice of our Foundation. This process gives rise to a broad network unified by the same aims. The Foundation strengthens its network through a number of activities, such as multi-stakeholder projects, events, scientific whitepapers, and annual reports. Through Advocacy, the Foundation acts as a leader of this network, while empowering its organisation and providing significant support to its stakeholders. Advocacy is a core, circular movement in which all of our main activities, aimed at positively influencing public opinion on a controversial topic, thrivingly converge.



Part 2

Our Strategy

Desired change

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

16 PEACE AND JUSTICE STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS

SUSTAINABLE DEVELOPMENT GOALS

Sphere of interest

COMPETITIVENESS OF MANUFACTURING

Impact level

SPREADING INDUSTRIAL CULTURE

Sphere of influence

Outcome level

6 OUTCOMES

Output level

9 RESULT AREAS

Activity level

4 MAIN ACTIVITIES

Strategy level

3 CHANGE STRATEGIES

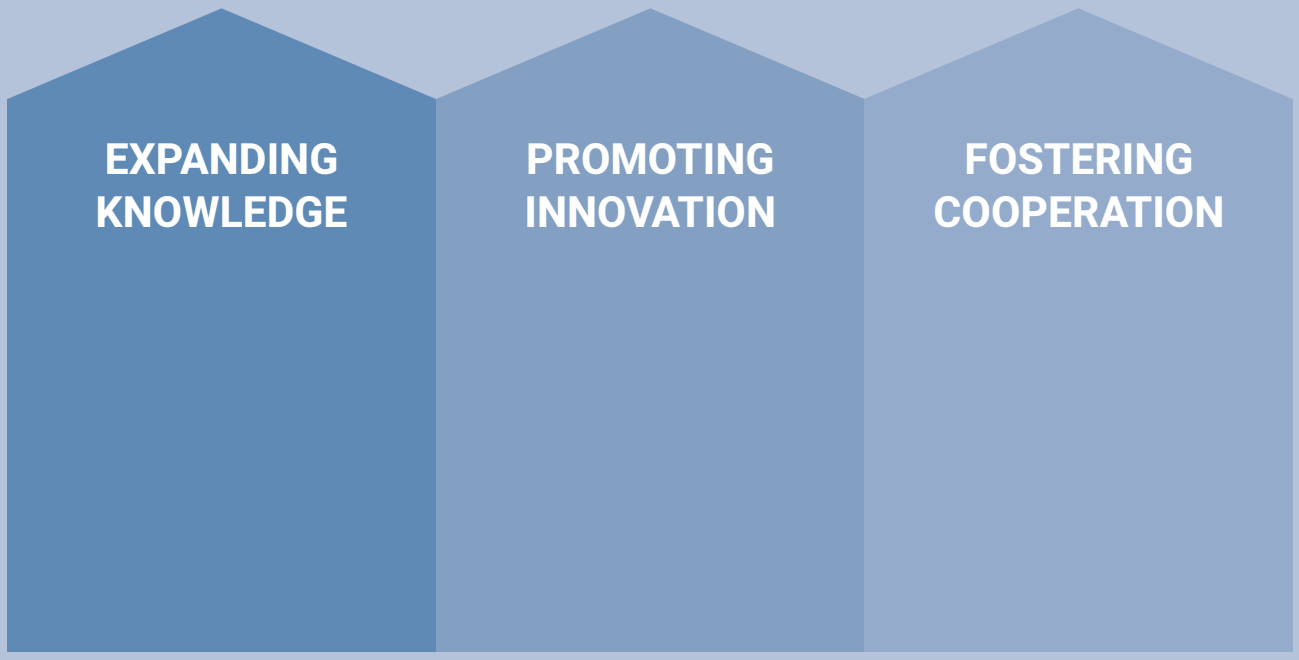
Input level

3 ENABLERS

Sphere of control

“Manufacturing is not only responsible for the creation of products and services that benefit society but also contribute to the creation of new jobs and value to several sectors and economic growth globally.”

The impact statement of the Strategic Plan 2020-2025 is "SPREADING INDUSTRIAL CULTURE."
The Foundation aims to contribute to this impact through three different impacting guidelines:



2.1
Strategic Framework

The long-term programme framework for the years 2020 to 2025 provides strategic guidance for the World Manufacturing Foundation to continue increasing the impact of its activities.
In doing so, the World Manufacturing Foundation Strategic Plan integrates all levels of our organisational performance, by promoting synergies across goal areas to address the desired change of competitiveness of manufacturing and allow the Foundation to contribute in achieving sustainable development goals.
The figure below visualises our strategic framework which is based on the Theory of Change model. The components of this model are discussed in the following sections.

2.1.1 Theory of Change

Our Theory of Change (ToC) describes how and why our interventions are assumed to lead to the spread of industrial culture, our desired impact. To give a clear overview of the different steps of our strategy, we represented our ToC in the visualisation below:
As seen in this visualisation, the Theory of Change maps the intermediate steps that would lead us to our intended impact. It starts with identifying inputs, the resources that are available to the Foundation; activities and outputs which are concrete actions to achieve the desired change; outcomes which are the intermediate effects achieved by our output; and eventually impact, our long term desired result.

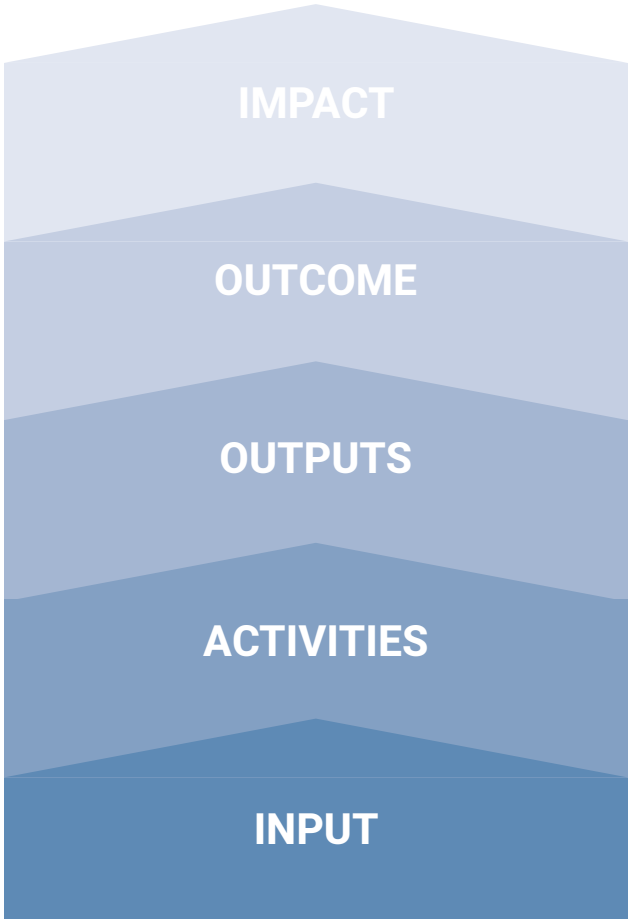
The change pathway has been designed according with three spheres:

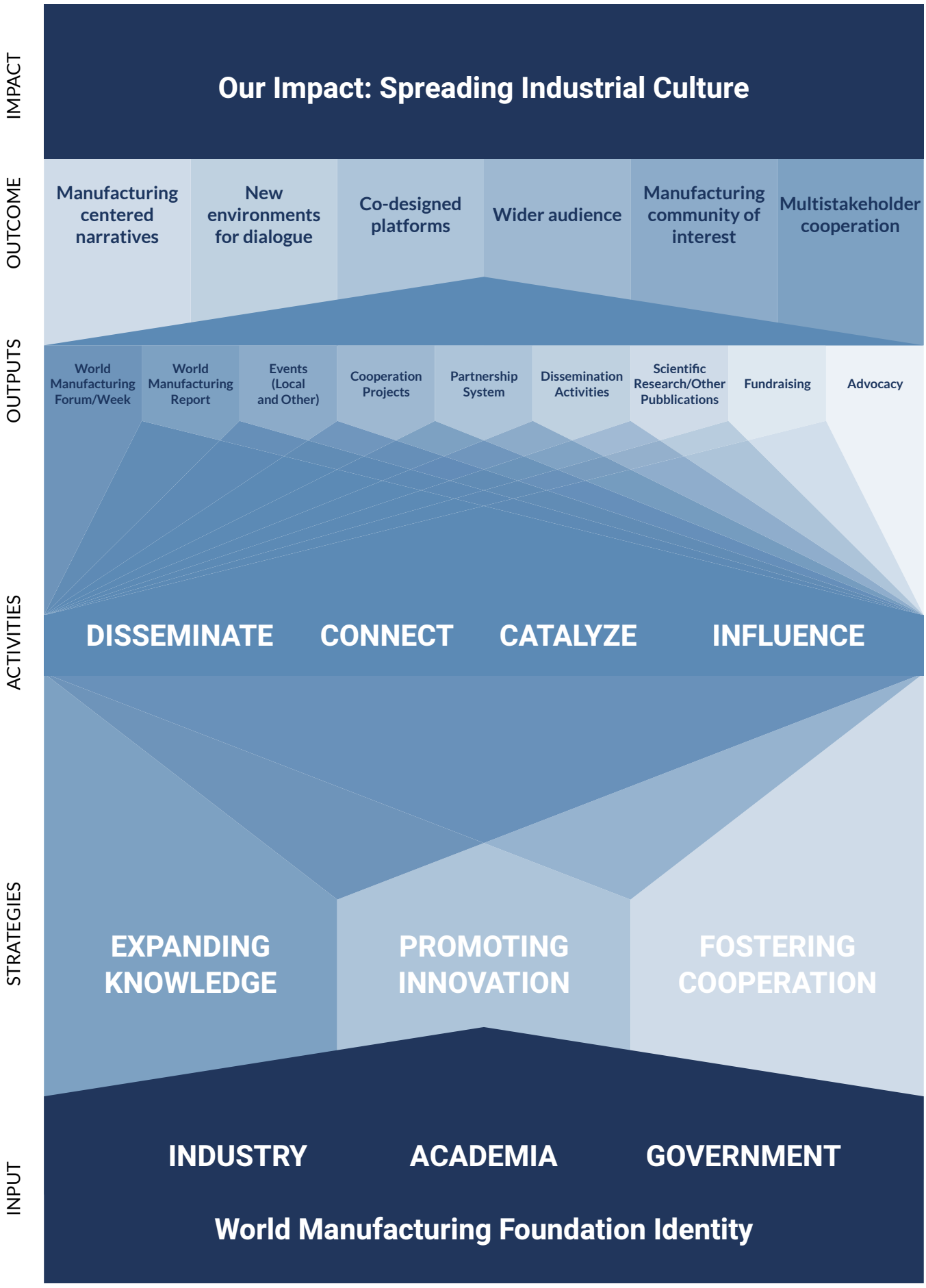
Sphere of control – The Foundation, its partners and founders produce primary actions, relationship, capacities to act on issue at hand.

Sphere of influence (indirect and direct influence) – Outcomes. Take up by stakeholders and other actors influences mind-sets, behaviours, relationship, practices, institutions.

Sphere of interest – Desired change. Further take-up and influence lead to changes in sociocultural, political, economic and environmental domains.

The World Manufacturing Foundation Theory of Change seeks to explain the link between change strategies and the delivery of outputs that contribute to higher-level results, including the Sustainable Development Goals. The figure below outlines each stage in the Theory of Change model.




IMPACT
Our Impact: Spreading Industrial Culture
OUTCOME
Manufacturing centered narratives
New environments for dialogue
Co-designed platforms
Wider audience
Manufacturing community of interest
Multistakeholder cooperation
OUTPUTS
World Manufacturing Forum/Week
World Manufacturing Report
Events (Local and Other)
Cooperation Projects
Partnership System
Dissemination Activities
Scientific Research/Other Pubblications
Fundraising
Advocacy
ACTIVITIES
DISSEMINATE
CONNECT
CATALYZE
INFLUENCE
STRATEGIES
EXPANDING KNOWLEDGE
PROMOTING INNOVATION
FOSTERING COOPERATION
INPUT
INDUSTRY
ACADEMIA
GOVERNMENT
World Manufacturing Foundation Identity

2.2

Our Strategic Path

The Theory of Change model presented in the previous section maps our strategic path –the different steps and actions that need to be done to reach our desired change.

2.2.1 Assumptions

Before discussing each stage in our Theory of Change, it is important to outline the assumptions which are relevant in mapping the relationship between the different results and our impact Assumptions are always context specific and help us to understand clearly how our strategy works. Furthermore, we will monitor different types of assumptions as well as focus and test them to improve new ways of addressing our impact.

In developing our Theory of Change, we identified the associated assumptions and related measures to manage our risks to achieving results, by ensuring that strategies and outputs respond efficiently. These assumptions represent the implicit beliefs that explain the expectation of change that underlies the links between levels of results.

The Foundation programmes meet the needs and the stakeholders' expectations

Stakeholders increasingly take part in the Foundation programmes

Availability and quality of data, information and trends about manufacturing

The content released is relevant for the stakeholders

The Foundation implements awareness about manufacturing issues in a targeted way

The Foundation communicates in a simple, accessible, and active way

The Foundation builds efficient and healthy collaborations

Partner capacities are strong and effective

Public support for the work of the Foundation at a global scale

Sustainable and innovative principles are adopted

Key actors take action independently

Relevant stakeholders act according to World Manufacturing Foundation recommendations

Manufacturing issues are relevant in actual context

Community take out prejudices about the role of the manufacturing in society

The community acts to support a future-oriented manufacturing and prioritize innovation and sustainable practices

The Foundation is well resourced to contribute to its impact.

2.2.2 Inputs

Our resources (inputs) are linked with our Triple Helix approach, that let us act as a key accelerator process, due to our multi-faceted and multi-disciplinary vision.

In creating a powerful synergy between the Industry, Academia, Government, the Triple-Helix model defines the identity of the Foundation. It metaphorically embodies the dynamic intersection among our founders, Confindustria Lombardia, IMS International, and Politecnico di Milano. The leading role of a Triple Helix system is the generation, diffusion, and use of knowledge and innovation. Collaboration among these actors is intended to overcome barriers enhancing the ability to address challenges that cannot be solved by one group alone. The intersectoral collaboration the Foundation has established makes use of this model to have a 360-degree view on manufacturing while empowering its competitiveness.

Our connection with the Industry acts as a boundary-spanner, serving as the locus of production and breeding ground of innovative manufacturing practices which constitute **industrial experience.**
Academia has a main role in the generation of **research** and spread of knowledge thanks to research on key and emerging manufacturing topics. Government is instrumental in the formulation and implementation of **policies** that empower the manufacturing sector. Thanks to these policies, the government has a key role in implementing recommendations made by the Foundation and thereby maximising our impact. The Foundation, as an open platform, helps to shape government policies and allows policymakers to better understand the needs and perspectives of different stakeholders.

The Foundation leverages on the powerful synergies among these Triple Helix spheres enabling us to achieve our desired impact of spreading industrial culture.

2.2.3 Activities

The Foundation engages with delivery partners, communities, governments and others to advocate for change and create impactful solutions to manufacturing challenges. Interconnected activities aim to consolidate strong results in terms of delivering relevant alignments.

Our strategic activities have been identified as a set of four key areas that have strong commitment in networking, engagement and leadership competences.

DISSEMINATE, CONNECT, CATALYZE, INFLUENCE: these actions are strictly related to our stakeholder's engagement level, according to the different set of actions that will be implemented over time.

Disseminate industrial culture through widespread diffusion of the importance and key trends impacting the manufacturing sector

---

Connect different stakeholders from industry, academia, government and the broader society to discuss and find solutions to important manufacturing challenges

---

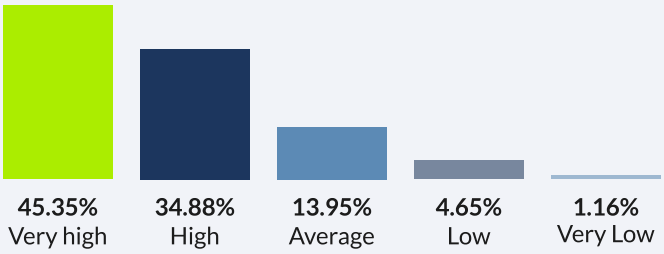
Catalyse mobilise and empower stakeholders to pursue actions that advance the Foundation's mission

---

Influence national and regional industrial agendas leading to policies that benefit the manufacturing community.

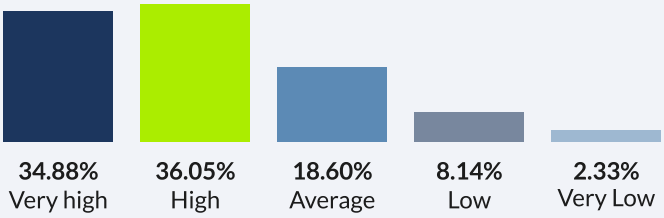
Strategic Plan survey

Please indicate your awarness of the following main activities of the Foundation: Forum



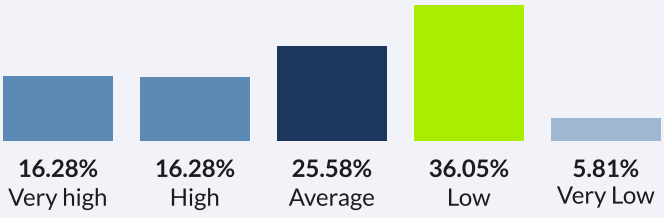
45.35% Very high
34.88% High
13.95% Average
4.65% Low
1.16% Very Low

Please indicate your awarness of the following main activities of the Foundation: Report



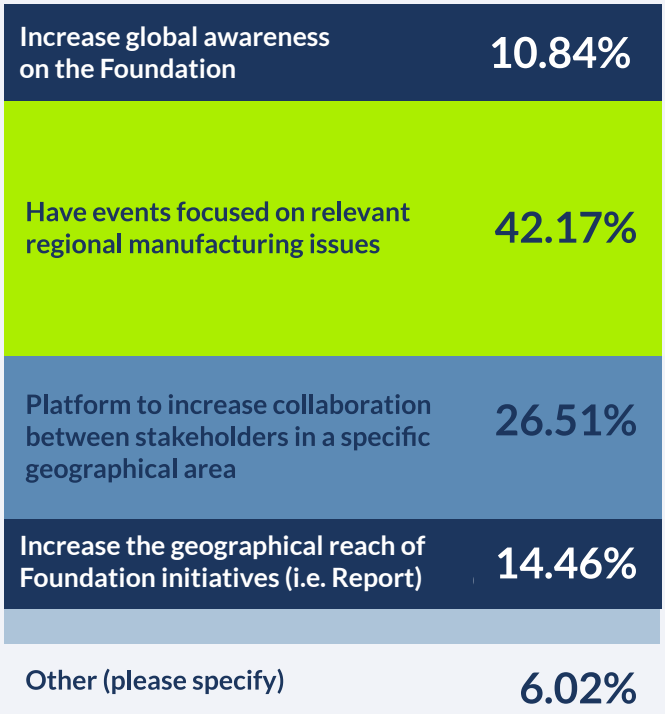
34.88% Very high
36.05% High
18.60% Average
8.14% Low
2.33% Very Low

Please indicate your awarness of the following main activities of the Foundation: Regional Events



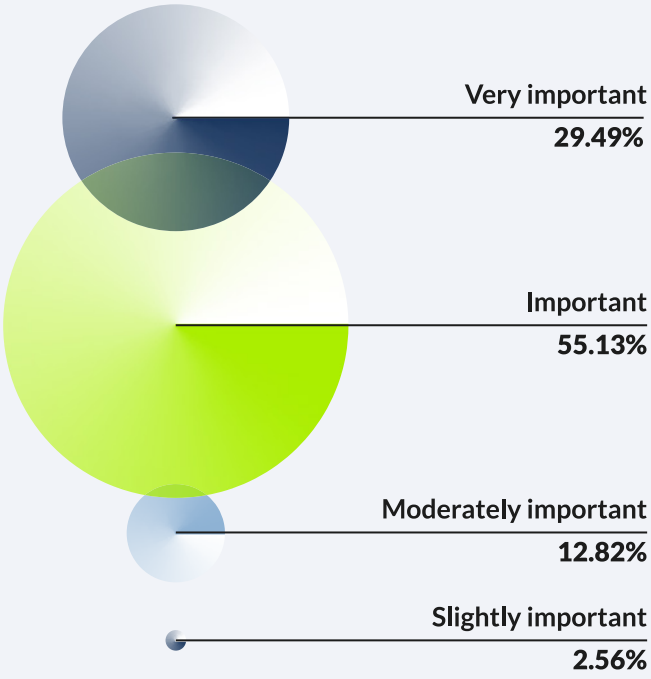
16.28% Very high
16.28% High
25.58% Average
36.05% Low
5.81% Very Low

What do you think is the main benefit of Regional Events?



Strategic Plan survey

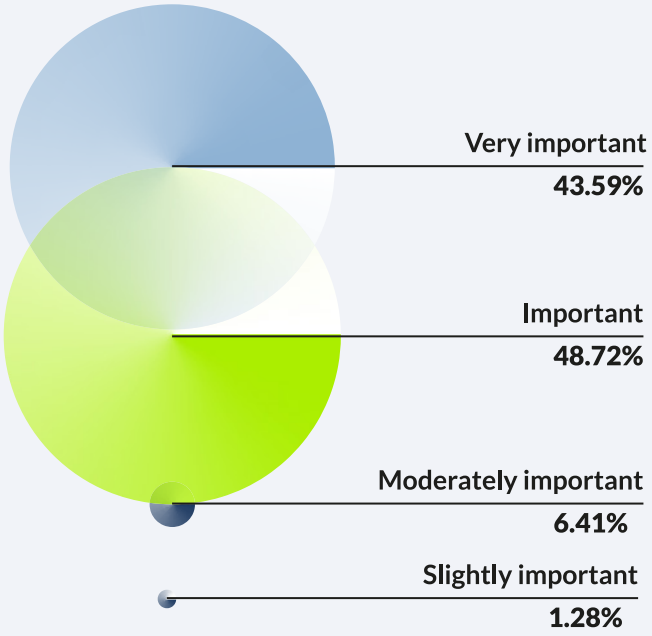
Please indicate your perceived importance of the following main activities of the Foundation: Report



What do you think is the main benefit of the World Manufacturing Report?

Learn about new developments in the manufacturing sector	29.63%
Get key recommendations to solve manufacturing challenges	25.93%
Learn about best practices/ case studies	22.22%
Know about regional/global perspectives on the manufacturing sector	20.99%
Other (please specify)	1.23%

Please indicate your perceived importance of the following main activities of the Foundation: Forum



2.2.4 Outputs

To achieve our impact, we need to bring change through actions and activities strictly connected with our long-term outcomes. The primary actions and main activities – as described in Part 1.5 Primary Actions and Main Activities - will structure an ecosystem of actions and reactions closely interconnected and dynamically interweaved.

1. **World Manufacturing Forum / Week**
2. **World Manufacturing Report**
3. **Events (Local and Other)**
4. **Cooperation Projects**
5. **Partnership System**
6. **Dissemination activities**
7. **Scientific Research/ Other Publications**
8. **Fundraising**
9. **Advocacy**

2.2.5 Outcomes

Considering the range of different aspects that need to change to ensure the spread of industrial culture, we have chosen the results that best represent the most effective progress in achieving our impact. To produce the intended objective, we need the support of a positive implementation environment. Moreover, the full achievement of these outcomes will not be attributable only to the Foundation, but rather will result from the combined and collaborative contributions of the Foundation, its partners and all the stakeholders involved in the process.

To reach its impact, the Foundation should organise its goal areas by ensuring the following six conditions:

1. **Manufacturing centered narratives are implemented.** Content about manufacturing is well created and articulated in effective formats, so as key actors and relevant stakeholders are more informed about new topics and issues, gaining easy access to a large amount of reliable, responsible and in-depth studies, researches, publications and documents is key. Accordingly, the community perceives the manufacturing sector as a positive driver for sustainable development, while it easily finds and receives effective and accessible data on the industrial ecosystem.
2. **New environments for dialogue are created.** Relevant stakeholders take part in a wide range of physical and digital opportunities to discuss issues, promote and share innovative solutions and risks, as well as have key actors participate in joint actions aimed at amplifying the discussion about the manufacturing sector at a regional, national and international levels.
3. **Co-designed platforms are developed.** Within the Foundation's influence sphere, key actors are willing to build new platforms to promote an exchange of ideas; relevant stakeholders find new ways to collaborate with the Foundation while a wide network of partners is created on a global scale.
4. **A global audience is reached.** An increasing number of individuals and a large portion of civil society increases their awareness about the manufacturing sector as a positive force. Key actors and relevant stakeholders receive constant, ongoing information about the manufacturing sector through profiled channels and tools, while the global community receives trends and related issues on the economic transformations.
5. **A manufacturing community of interest is consolidated.** Stakeholders increase the sense of belonging to a specific cluster committed to take action and to support the dissemination of success stories regarding manufacturing business practices, by influencing society at large.
6. **Multi-stakeholder cooperation is promoted.** By adopting the triple helix model, stakeholders act independently in synergies between different expertise areas. Autonomous projects thus facilitate mutual knowledge to speed up the innovation process. The Foundation also aims to spur global cooperation, uniting actors from different regions of the world.

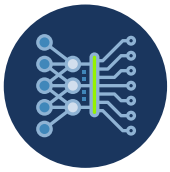
2.2.6 Our Impact

We believe industrial culture represents a fundamental tool to stimulate, support, and empower all the manufacturing players in order to contribute to a significant change in the manufacturing sector. Spreading industrial culture worldwide represents a key to support societal prosperity through manufacturing in order to promote global resilience.

In light of this, our Theory of Change paints a vision providing a perspective on how our organisation can contribute to the spread of industrial culture as a primary asset to transform manufacturing.

The impact statement of the Strategic Plan 2020-2025 is "Spreading industrial culture." The Foundation aims to contribute to this envisaged impact through three different impacting guidelines (change strategies):

EXPANDING KNOWLEDGE:



Providing information, good practices and solutions for our stakeholders' strategy to support their approach and help them explore new responsible actions and trends, fostering a positive perception of the sector.

PROMOTING INNOVATION:

Encouraging our stakeholders to behave in a future-oriented way, making them aware in order to accelerate the digital transformations.

FOSTERING COOPERATION:

Bringing together our stakeholders' needs and promote a collaborative learning model, in order to shape the future including different perspectives.

Strategic Plan survey

What do you think is the main benefit of the World Manufacturing Forum?

Learn about new developments in the manufacturing sector	Networking	Discuss possible solutions to manufacturing challenges	Sharing of best practices/ case studies

Every single strategic direction is articulated within a system of integrated actions and activities, focused on our mission's accomplishment.

According to the strategic guidelines, industrial culture is disseminated under certain conditions that ensure the involvement of every group of stakeholders, which are:

Receive and easily find information of interest;

Gain the opportunity to deepen issues and themes, also through opportunities for exchange and dialogue;

Being in contact with similar organisations and not, to discuss and maybe build partnerships and relationships, even in the long term.

This set of framework fosters the construction of a shared, widespread and accessible industrial culture that really can promote change and encourage stakeholders to act as responsible and active players.

2.2.7 Our Desired Change

According to our stakeholders, the manufacturing sector is a strategic driver for economic prosperity and societal well-being. In accomplishing our mission, we strive to create the ideal framework of a cultural environment which would enhance competitiveness in the manufacturing sector. More awareness in the industrial sector is thus our long-term desired change. At a global level, our commitment is deeply aligned with selected goals identified as the United Nations Sustainable Development Goals 2030 (see Part 2.2.8).

COMPETITIVE MANUFACTURING

To become a real driving force in the contemporary and future context, the manufacturing sector should detect the opportunities to innovate and to create within the specific scenario. Along with our partners, we strongly believe that the manufacturing sector is shaping the new economic and social development pathways. According to this vision, the manufacturing sector should undertake specific actions to strengthen its innovation processes and projects in the future, applying a set of correlated tools aimed at transforming the current context. The manufacturing industry is currently achieving significant results in identifying key opportunities to act through industrial transformation that will inspire education, sustainable development and societal impact.

First of all, a competitive manufacturing sector can offer a multidirectional industrial vision that faces contemporary challenges and actively contributes to economic and social development. Within the scope of the Fourth Industrial Revolution, a competitive and future-oriented sector must develop some strictly interconnected features

RESILIENT MANUFACTURING

A sector that is able to adapt and respond effectively to societal megatrends and challenges by changing business models and putting sound strategies to manage risks. This also pertains to the ability to respond to risks (i.e. cyber security threats) and having the capacity to overcome disruptions that may occur.

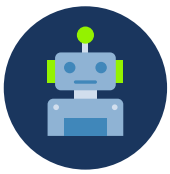
INCLUSIVE MANUFACTURING

Empowers individuals of any gender, age, race, or socio-economic background by involving them in diverse activities related to manufacturing. This can be achieved by providing access to opportunities, teaching the required skillsets, and other measures that promote inclusive innovation. This dimension also takes into account human-centric automation, realising the potential of technology to complement valuable human skills.

SUSTAINABLE MANUFACTURING

Achieving growth by not putting unreasonable strain on the environment, or at the expense of future generations. This dimension includes mindfulness on the impact of different activities in the manufacturing value chain that lead to the development of new ways of production. More importantly, this aspect calls for fostering the use of sustainable materials and the responsible generation and use of resources.

INNOVATIVE MANUFACTURING



The manufacturing sector is constantly improving and at the leading front of technology. The Fourth Industrial Revolution is associated with rapidly evolving new technologies that will fundamentally shape the future of production as well as the workforce. For example, Big Data and Artificial Intelligence will enable cognitive manufacturing, transforming the industry through higher efficiency and optimisation of resources. Competitiveness can hence be promoted through the adoption and use of these technologies.

ATTRACTIVE MANUFACTURING

A sector that is appreciated for its contribution to societal well-being and is considered as an attractive workplace for young people and other job seekers. Manufacturing, notwithstanding its historical contribution to value creation, has long been regarded as old-fashioned. A competitive sector is able to showcase its positive aspects hence able to present a positive image to communities and to the society as a whole.

Competitiveness is a fundamental quality to emerge with respect to other sectors and to play a leading role in the development of society. It requires collaborative efforts across the value chain, involving individuals, the private sector, the public sector and policymakers to proactively shape a new, positive future for manufacturing.

This will be a future crafted by the manufacturing community's vision; to achieve this goal, stakeholders have a key role in pushing companies to consider societal well-being as a key factor. They need to apply sustainable actions, behaviours and practices; they are asked to effect policies and programs that incentives innovation, inclusiveness and ethical development; they need to promote innovation, awareness and new approaches; they have to play its part in adopting innovative mind-sets and in perceiving the manufacturing sector in a positive way.

2.2.8 Our Commitment to Sustainable Development

"The 2030 Agenda for Sustainable Development is a universal framework for action to end extreme poverty, fight inequality and injustice, and protect our planet. Every Member State of the United Nations signed on to this ambitious and transformative agenda, in recognition of significant, persistent challenges despite decades of growth and progress. With an unprecedented pace of change compounding these challenges and even creating existential crises, a common framework for fundamental, sustainable transformation and joint action is imperative." (Source: UNSDG – SDG Primer Report – 2019)

How the World Manufacturing Foundation contributes to the UN Sustainable Development Goals

The World Manufacturing Foundation welcomes the SDGs and supports the UN in making our planet more sustainable and acting responsibly along the impact value chain. The SDG focus on social and economic global priorities based on the idea that shared responsibilities and collective actions have a key role in bringing progress and change. Fundamentally, achieving the SDGs requires the active involvement of all stakeholders: the United Nations system, national, regional, and local governments, the private sector, civil society, academia and people at large. Success depends on pursuing a whole-of-government and whole-of-society vision with an eye to meeting the high ambitions and challenges of the goals. The 2030 Agenda for Sustainable Development gives particular evidence to the monitoring and evaluation process and its principles and requirements guide and influence how evaluations have to be conducted. People, planet, and prosperity are at the heart of the UN Agenda, which focuses a list of 17 strategic objectives that must be globally reached by 2030.

Particularly, the SDG 8, 9, 16 and 17 are of great importance for the World Manufacturing Foundation.

SDG N.8 - DECENT WORK AND ECONOMIC GROWTH: PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL.

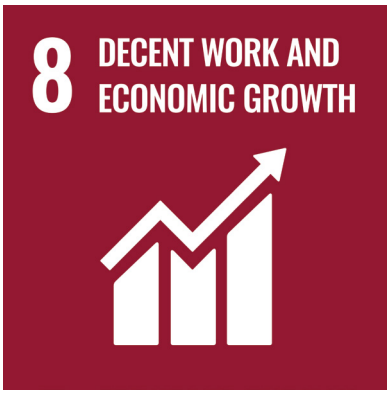
World Manufacturing Foundation contribution to SDG N. 8.
We are fully committed to ensuring an inclusive economic growth by a series of actions that can leverage entrepreneurship and innovation as a new mind-set for a more productive industrial ecosystem.
We will continue to implement our activity programme at a regional, national and global level by focusing also on developing countries which can benefit from exchanging practices with companies around the world.

By organising all dissemination activities and fostering a strong digital communication, we will increase a positive perception of manufacturing. Through on-the-ground work, we address the challenges of digitalisation to innovate delivery of education and training. Accordingly, a new workforce can be created thanks to increased access to innovative tools and technologies, making our efforts in building a decent work environment a key target, which is relevant to UN SDG 8.

SDG N.9 - INDUSTRY, INNOVATION, INFRASTRUCTURE: BUILD RESILIENT INFRASTRUCTURE, PROMOTE SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION.

World Manufacturing Foundation contribution to SDG N. 9.
We are deeply engaged in spreading an industrial culture by expanding knowledge and promoting innovation in terms of digital capabilities and skills that contribute to increase opportunities in the industrial sector at a global level. We have developed a strong research network to address skills development needs by disseminating business cases and technical examples of industrial best practices that can leverage an awareness of manufacturing as a social driver for sustainable development and societal well-being.

SDG N.16 - PEACE, JUSTICE AND STRONG INSTITUTIONS: PROMOTE PEACEFUL AND INCLUSIVE SOCIETIES FOR SUSTAINABLE DEVELOPMENT, PROVIDE ACCESS TO JUSTICE FOR ALL AND BUILD EFFECTIVE, ACCOUNTABLE AND INCLUSIVE INSTITUTIONS AT ALL LEVELS.



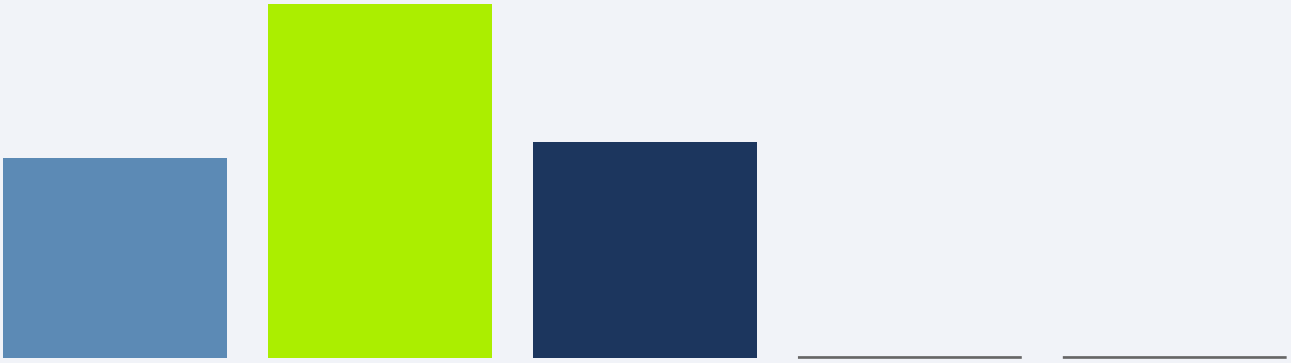
World Manufacturing Foundation contribution to SDG N. 16.
In designing and delivering its programmes, as well as in the international component of our mission, we encourage and facilitate the participation of a wide range of organisations, contributing to an open, responsive and accountable decision-making process on sustainable industrial development at the international level. We work to improve our institution's role as an effective, accountable and transparent organisation at all levels. We adopt procedures able to create the conditions for an open platform that can provide an inclusive, participatory and engaging exchange among all people to increase access to information and key topics regarding the manufacturing sector.

SDG N. 17 - PARTNERSHIP FOR THE GOALS: STRENGHTEN THE MEANS OF IMPLEMENTATION AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT.

World Manufacturing Foundation contribution to SDG N. 17.
We focus on building effective cooperation projects, as well as partnership systems where multi-stakeholder synergies work in delivering long term relationships among all stakeholders and activities. We seek to establish effective partnerships at regional and national levels and internationally including co-partners, institutions, trade association and private companies. The implementation of crossover dialogues and collaborations is at the core of our strategies aimed at building a responsible partnering network that would grow over time.

Strategic Plan Survey

How much do you think is the impact of World Manufacturing Foundation activities to the following U.N. sustainable goals? Decent Work and Economic growth-Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors-By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value.



25.64%
Very high

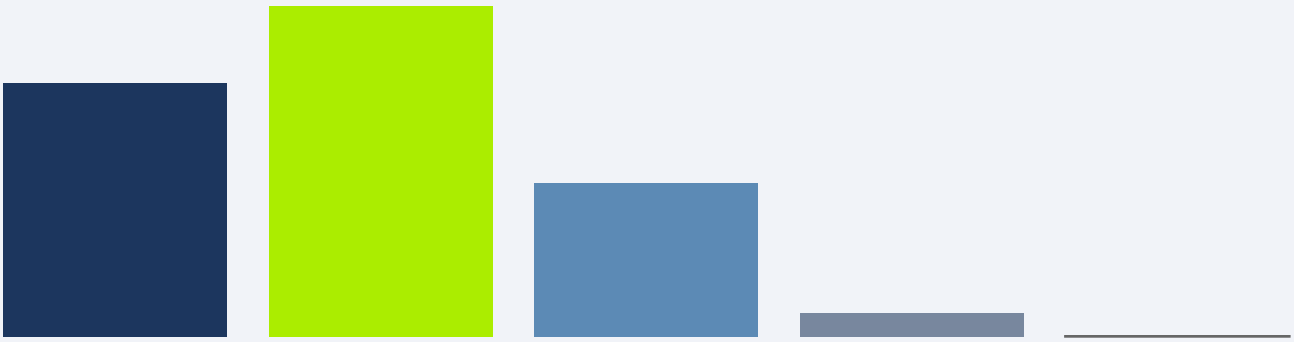
46.15%
High

28.21%
Average

0.00%
Low

0.00%
Very Low

Industry Innovation and Infrastructure-Promote inclusive and sustainable industrializationand, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries-Enhance scientific research, upgrade the technological capabilities of industrial sectorsin all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending-Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities.



33.33%
Very high

43.59%
High

20.51%
Average

2.56%
Low

0.00%
Very Low

Partnerships for the goals-Enhance the global partnership for sustainable development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the sustainable development goals in all countries, in particular developing countries-Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.

24.36%
Very high

42.31%
High

30.77%
Average

2.56%
Low

0.00%
Very Low

2.2.9 Evaluation Approach and Methods

HOW WE IMPROVE

Impact assessment is a fundamental aspect of our organisation's strategy. We conceive our mission as an ongoing development towards collective results. In order to consolidate our role and develop our achievements, data learning and implementation are key steps for acknowledging our long-term outcomes.

The measurement and evaluation process will also contribute to increase the Foundation's accountability, reliance, and transparency through an inclusive approach that ensures a better understanding of our stakeholders' needs, as well as opportunities for new collaborations.

Data evaluation is a significant process that provides insights about our progress. By adopting a framework of indicators for ingoing learning and tracking, we will positively gain in terms of efficiency and effectiveness.

Our activity will be monitored by strategic KPIs that will enable our systemic growth on different levels, such as leadership, culture and governance. In addition, we are planning to share every step of our evaluation stages through an open dialogue with each stakeholder' cluster. Furthermore, the process will help us identify good practices as well as guidelines that should be incorporated in our future actions, in accordance with our mission.

EVALUATION PURPOSE AND SCOPE

We plan to develop our indicator system according with our set of levels, such as strategy, outcomes and outputs that will be detailed during the Activity Plan phase.

For the following five years, the KPIs structure will be confirmed by constantly implementing it and evaluating its effectiveness. Additional indicators will be developed in the Action Plan phase to establish a clear connection between the rates and the strategic objectives, revealing the deep impact of every single activity. A review document, published once a year, will deliver the evaluation findings as well as assumptions, qualitative overview on specific patterns and lessons learned.

Furthermore, we will elaborate an annual Evaluation Plan that will map the entire monitoring and evaluation process through the five years. The circular process involves five different steps:

1. **Planning** - Selecting, organising and calculating all the resources needed for the data collection phase as well as related actions, including resources of data, models, typologies and methods.
2. **Data collection** - Collecting primary and secondary resources of data, scheduling all the results and organising all planned activities.
3. **Data analysis and reporting** - Analysing and matching data, according to our KPIs.
4. **Findings and conclusion** - Highlighting key findings in accordance with our evaluation criteria, as a fundamental step that enables us to assess all type of future interventions.
5. **Follow up and implementation** - Gathering all information and reporting the final outputs in a formal document, open to the internal team and to all the stakeholders. The strategy will be thus implemented according to the evaluation key findings.

PRINCIPLES OF EVALUATION

To be credible, reliable and trustworthy we confirm our approach in following the main principles for a good evaluation practice:

Independent and impartial:

We collect, analyse and evaluate data without prejudices, aims or intentions to facilitate our organization in an objective and impartial way, with professional integrity.

Transparent, participative and inclusive:

We collect data thanks to an open and collaborative consulting our key informant and relevant stakeholders, respecting their privacy and safety needs. The anonymity and confidentiality of respondents will be safeguarded.

Ethically conducted:
We evaluate and consider all the collected information through curated and professional standards.

Utilisation focused:
We highlight the process by focusing on our work's impact.

Robust in methodological approach:
We use a clear, effective and organised methodology.

EVALUATION CRITERIA

The evaluation criteria defines the benchmark against which we assess our impact. These are functional in defining indicators and key questions and evaluating the different levels of our framework's results. We decided to adopt the OECD DAC's "Quality Standards for Development Evaluation" to ensure the highest quality in our assessment method.

- Relevance: the extent to which the project objectives are consistent with partner and beneficiaries' requirements, needs, and the current situation. An assessment of project coherence in achieving its objectives.
- Efficiency: the extent to which inputs are converted into results/outputs.
- Effectiveness: The extent to which the development intervention's objectives are expected to be achieved.
- Impact: The extent to which the project brings changes.
- Partnership: The extent to which the intervention integrates a cooperation model and addresses issues such as relation, inclusion and participation.

EVALUATION METHOD

We will adopt a mixed-method approach, both quantitative and qualitative. Primarily, thanks to quantitative data, we are able to provide precise data like counts, ratios and percentage that can be statistically analysed and replicated for comparison of means and elements; quantitative data are fundamental elements to design what variables are relevant to measure and foresee rates according to project objectives. Secondary, qualitative data are related to the sphere of perception and are focus on the context, perspective and value and will help us evaluate attitudes, beliefs and expectations.

DATA SOURCES

We decided to use multiple tools in order to collect our data. First of all, we will use secondary resources of data to learn facts about the perception of the manufacturing context according to our stakeholders' vision and to collect information about stakeholders beliefs and behaviour, such as:

Document review;
Statistical data form other organisations;
Online data.

Moreover, we will set different methods to receive primary resources of data to learn about specific issues related to the organisation activities, visions and beliefs to implement our strategy:

Survey and questionnaires;
Interviews;
Focus groups

Once data is collected, we will code them analysing and organising the results by creating effective charts and infographics apt to manage and explain data, confirming the overall quality standards. The full assessment process is determined to flawlessly measure our impact; it is designed to understand and learn, year by year, how we can develop our strategy by aligning our accomplishments with our stakeholders' expectations and by implementing annual activities, communication tools and networking projects. In doing so, we believe that we can greatly achieve our mission, in recognising the central role of our founders and stakeholders as well as a key function of all the active actors who must be involved at every stage. Moreover, we plan to strengthen the accountability and power of our organisation by leading the interests and the needs of its community, due to its opened and faceted nature.

2.2.10 Stakeholder Engagement and Communication Plan

Stakeholders are at the heart of our strategy. In order to guarantee opportunities for discussion, exchange, interaction and involvement, we have identified a set of actions aimed at actively involving them, stimulating their feedback, promoting interests and creating opportunities to actively interact at all levels. Such engagement helps us learn about emerging manufacturing topics while supporting us in creating long-term value. Our broad and consistent stakeholders' engagement is essential to address their needs and concerns, to organise our activities at the best as well as to maximise the impact level of our actions.

Chiefly, we aim to involve our stakeholders at different levels through several planned activities.

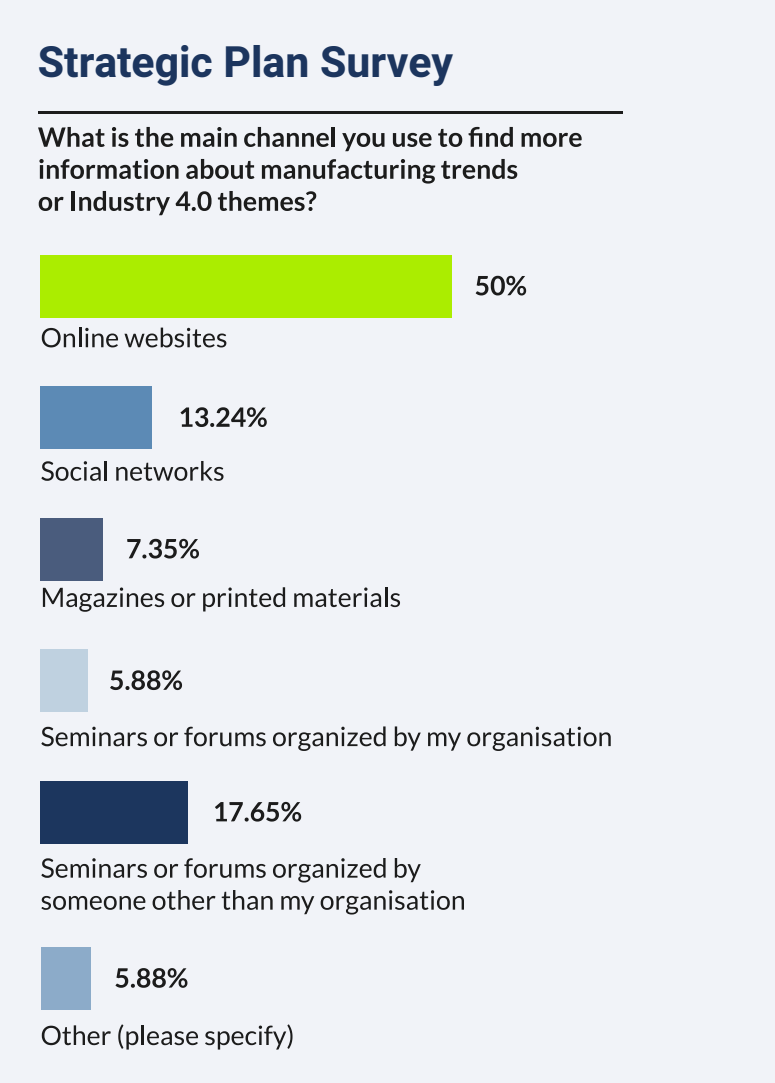
Over the next 5 years, we plan to build a structured partnership program with our broad network of regional, national, and international collaborators, as a means of strengthening our organization. This project will entail the development of a different range of multi-year partnerships, which will support the Foundation's mission through a multi-layered approach.

In addition, we are planning to boost a partnership system to invest in dynamic engagement projects, which will further empower the appeal of our role and support us in the achievement of our mission.
Thanks to our consistent network of international cooperation, we will empower our flexibility in being complementary with our partners' strategies by defining and pushing their agenda.

Moreover, our participatory evaluation model will engage our stakeholders along the whole assessment process, providing many opportunities of dialogue and active participation from which our organisation can benefit:

- Opportunity for feedback and clarifications about their needs and expected accomplishments;
- Opportunity to build relationships and ensure a better understanding of common interests and further collaborations;
- Opportunity to reach increased number of geographically dispersed stakeholders;
- Interactive learning experience;
- Increased buy-in and ownership of process and results;
- Increased knowledge about the extent to which our activities have been effective.

In addition, active leadership in networks and coalition will help us to expand our message. According to this scope, we will develop different communication tools to communicate actively and consistently at furthering organisational goals, presenting our clear vision to key audiences.



IMPLEMENTING AN EFFECTIVE COMMUNICATION STRATEGY

Strategic communication is an important tool that allows us to spread our message to engage our partners and members to achieve our mission. An effective communication plan will help us to build a common space of exchange, prosperity, stability and cooperation, based on mutual interests and commitments. The overall objectives that will guide our communication plan can be summarised as:

- Effective communication and promotion of the Foundation actions and values;
- Strengthening of the overall communication environment, including the dissemination of in-depth content on manufacturing and promoting the importance of industrial culture;
- Greater public awareness of the foundation's activities and conveying of contents that promote the positive perception of the manufacturing sector as an agent of economic prosperity.

In order to develop a clear, interesting and effective communication, we will diffuse our message in an open, engaging and qualified manufacturing centred narratives to communicate key issues, trends and innovative solutions, focusing on what issues are more relevant to our stakeholders and frequently using visual aids to draw attention to key points, increasing readability.

The communication concept will be aimed at strengthening the identity of the World Manufacturing Foundation as a reference editor of contents for the dissemination of industrial culture. We aim to design an open platform to expand stakeholders' voice: a new accessible environment to share points of views, join discussions, share knowledge, reach and engage new publics. The concept will expect an evolution in the positioning and role of the Foundation, capitalising on what has been acquired so far and trying to amplify the extent of its long-term impact.

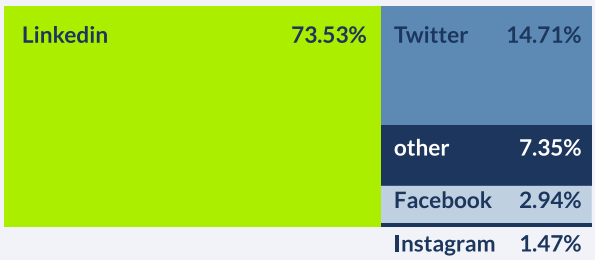
KEY AREAS OF ACTION

The strategic communication of the Foundation will focus first and foremost on the development of positive and effective messages, which should enable the stakeholders to learn more about our organisation, investigate issues of interest and learn about information on the manufacturing sector involving innovative and good solutions practices. These messages should also clearly communicate the value of industrial culture.

Rather than explaining scientific and technical details, our messages will try to explain the benefits of the spreading of industrial culture and the role of the sector to promote societal wellbeing and economic prosperity in all countries, at all levels of industrialisation. This positive narrative should also be communicated through real life success stories that will resonate with the target audience.

Strategic Plan Survey

In which social channel would you prefer search information on the World Manufacturing Foundation?



The communication will focus on the proactive dissemination of Foundation values and activities. In particular, dedicated communication material will be developed on priority issues, in which the strategic communication of the Foundation must be improved, such as:

- Promoting our identity by presenting a consistent visual image of the World Manufacturing Foundation;
- Improving media presence;
- Communicating news in an easy and attractive way;
- Developing and refining digital tools (web site, dedicated landing pages, social media pages).

Moreover, communication campaigns will be developed targeting key audiences and focused on specific issues of relevance to those audiences.

- Develop effective networks of communicators

The development of communication networks will be a means to maximise the impact of the communication activities undertaken by the Foundation. Networks should provide a platform for to exchange ideas, amplify communication messages and coordinate activities. Moreover, networks of journalists and media will be developed in order to communicate better. The networks will be built progressively to include key communicators in institutions at national, regional and international level.

- Support and amplify partners' expression

The Foundation will actively engage in efforts to promote the dissemination and expansion of the message of its partners, in particular through cooperation and support for activities. The Foundation will work closely with them to agree on common information campaigns and mutually engage in communication channels to reach a wider range of people.

- Engagement with civil society

The Foundation will reach the civil society to exercise its role of ambassador promoting the industrial culture and supporter of the manufacturing sector, also through actions and channels that allow it to better convey its message.

- Increase awareness, develop critical thinking and promote manufacturing literacy

The Foundation will try to raise public awareness on the manufacturing sector, documenting and promoting

general information and spreading best practices even to a wider public, trying to stimulate curiosity and interest.

BUILDING A SUCCESSFUL COMMUNICATION PLAN

The World Manufacturing Foundation has a considerable social dimension. Every aspect of its commitment is deeply exposed to media influence and interaction. This is one of the main reasons why we will emphasise our work on building a strong reputation across all platforms as well as providing the activities and events we promote the visibility they deserve. In this respect, the communication plan will be a key tool to amplify the dissemination of our messages and to reinforce the institutional ecosystem of the Foundation itself along with related contents (vision, mission, goals, impact and activities). Accordingly, we intend to disseminate information about specific issues, new trends and best practices as well as communicate our programs in order to build a transparent, accountable and innovative framework. Moreover, we will develop specific format to communicate our identity, our key values and distinctive asset, as well as transmit relevant information concerned with specific topics about the manufacturing sector.

We are planning to adopt a tone that is accessible, balancing the use of technical and scientific terms, communicating in simple and understandable ways, tailored to the specific needs of different users, according with the type of channel identified. The content developed will be well-matched with a rapidly changing language, preserving the depth and the scientific authority of the shared data. Moreover, we will adopt digital tools which will enhance the contents through a distinctive visual concept.

All the content produced will be shared trough formats and channels relevant with specific objectives and key messages, in order to disseminate meaningful and powerful issues. When creating the right content mix, we will follow a few key points, as follow:

- authentic content, supported by evidence;
- professional language;
- purposeful messages.

The set of contents will be organised on different supports, such as:

- data, graphics, statistics reports;
- written texts, insights and focus;
- infographics, illustrations, animations;
- photos, videos.

We will communicate with members and external audiences through an integrated communication plan, well designed and tailored to each specific target audience, with a full range of tools to reach new audiences, implement and develop communication in existing channels and to strengthen our digital presence to build a reactive and informed online and offline audience, such as:

Offline tools

- Press conferences
- Media relations
- Scientific reports and books
- Events and meetings
- Focus groups
- Scientific committees

Online tools

- Web pages & blogs
- Social media
- Digital papers
- Digital PR
- Newsletter
- Webinar
- Videos

Strategic Plan Survey

The following are other activities that the Foundation can engage into to fulfil its mission.
Please check those you think are most relevant.

21.07% - Partnerships / Alliances with similar organizations, creating a network institutions with a common aim to spread industrial culture.

17.33% - Dedicated committees focused on specific topics (i.e. technical committees focused on AI, Big Data, Circular Economy).

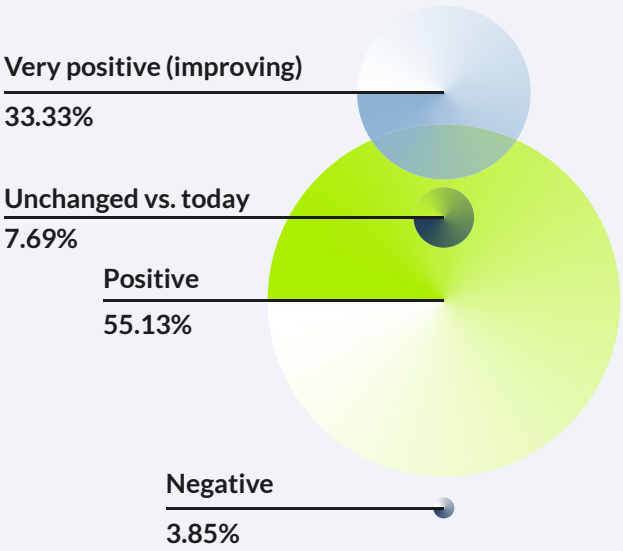
13.87% - More frequent publication of short reports/ studies/essays about a specific manufacturing topic to complement the World Manufacturing Report.

11.47% - Online community for members of the Foundation where they can interact , share information and access exclusive content.

8.53% - Newsletters with updates about the Foundation and the manufacturing sector sent to subscribers.

10.40% - Share relevant and updated manufacturing data ("databank") in the World Manufacturing Foundation website.

How would you describe your outlook for the Foundation in the next 5 years?



According to our mission, we are fully aware of the role that knowledge resources made available in digital format take in contemporary society. Therefore, we intend to address not only our network of members and participants, but also the wide manufacturing community and civil society, who can entertain long distance relationships with the organisation to access the variety of competence we have about industrial culture.

In terms of digital accessibility, we will carry out a general redefinition of our digital strategy, at the time of improving our web presence. Therefore, we invest both in our own institutional presence, through a deeply revised web site, which will be structured in an innovative way, using a new visual identity; both on our digital relational dimension, thanks to an informative stream constantly conveyed through the different social networks.

One of the conditions necessary for optimal use of digital resources has been identified in the possibility of users to access to specific manufacturing topics we deal with through dedicated digital platforms. Alongside this, specific attention will be given to the tools that visitors can use to keep in contact with us, even when we don't promote specific activities. Furthermore, we will periodically give insights about specific issues and updates about the contents produced, to convey a constant information flow.

Both online and offline communication tools will be adapted for specific stakeholder's needs, carrying out actions aimed at involving specific clusters in a timely and consistently manner. To achieve this objective, tools will be developed according to the level of relevance and complexity required by each group and articulated in a coherent system so as to meet the expectations of each cluster. In particular, we will organise our communication plan in 4 different communication layers, responding to 4 different levels of complexity; each layer identifies with specific media and tools.

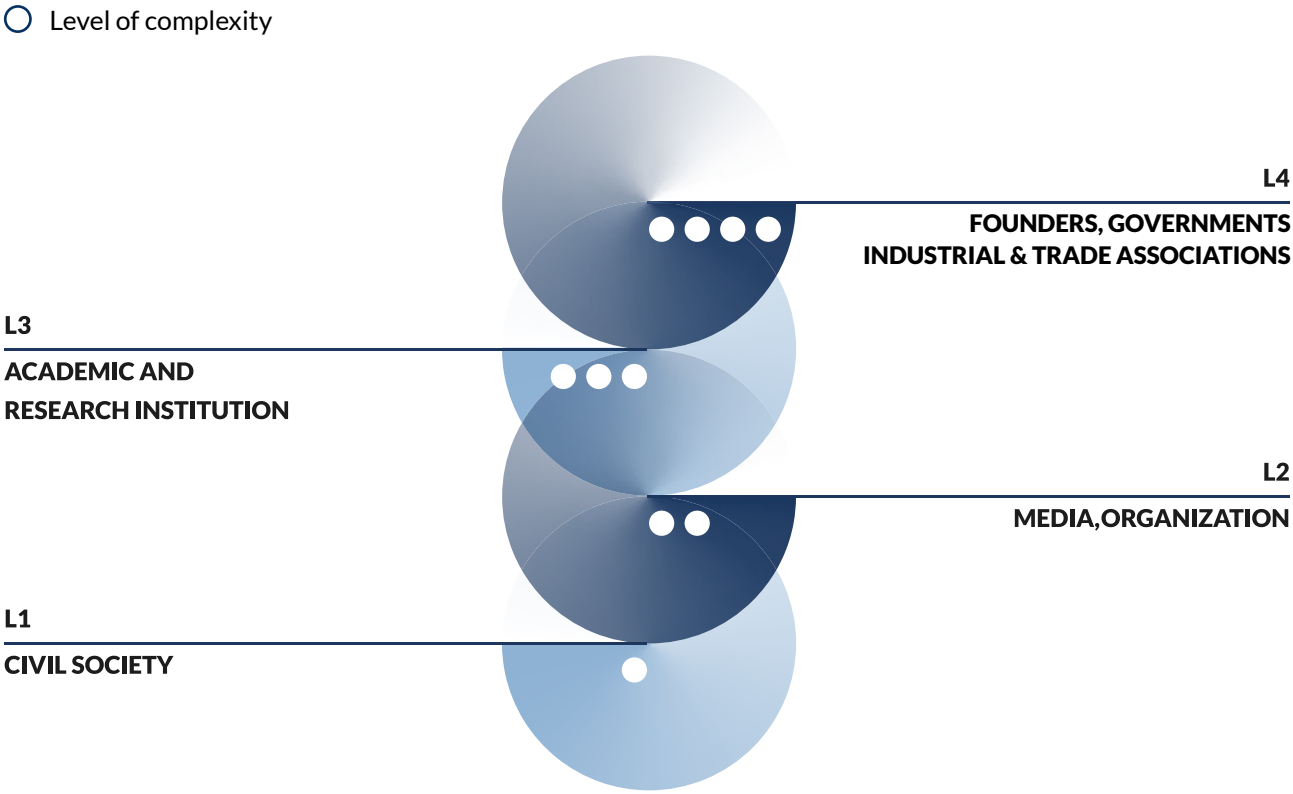


Figure 9a:
Tools by level of complexity

Our stakeholders will be involved in a constant and continuous dialogue in order to create long-lasting conversations which will eventually increase transparency, inclusion and trust. A range of activities have been planned for each phase of the process, that will be repeated annually, improving the single performance in terms of reach, nurture level and retention score. The stakeholder "journey" will be well-guided, with recurrent invitations to actively participating in our community life. Here we show an example of the engagement strategy adopted for the strategic plan release phase:

DATA MANAGEMENT

To ensure that this strategy works well, we will collect useful data regarding our activity.

We will collect quantitative data regarding the number, volume and consistency of our communication activity, including the volume of our audience for each communication channel.

We will then collect qualitative data regarding the quality, effectiveness and relevance of the messages we disseminate, as well as the ability to involve our stakeholders. We will measure the perception of our online presence and the perceived quality of this activity, together with other data necessary to evaluate the success of our actions, especially online.

Data sources will be available through online insight software and satisfaction surveys, consulting key groups to make sure we are meeting their information needs.

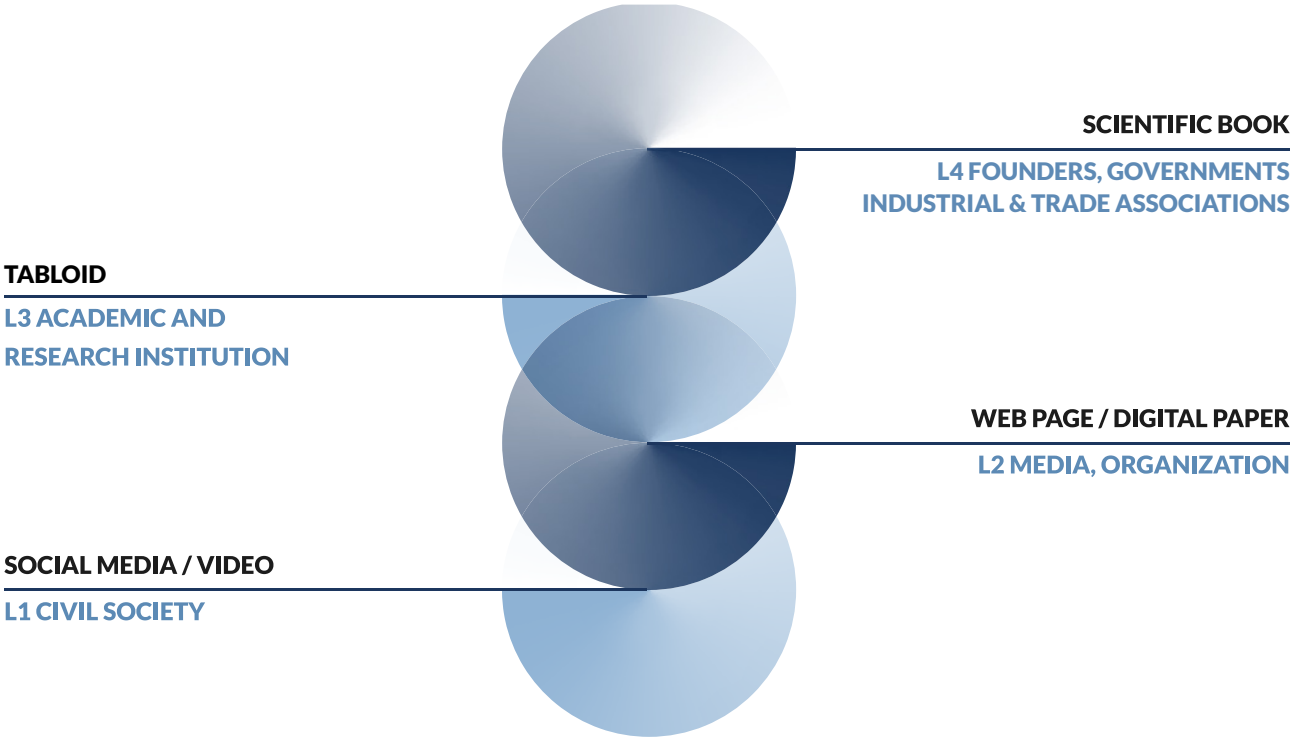


Figure 9b:
Tools by level of complexity

2.3

Our Action Plan Roadmap 2020-2025

The Action Plan 2020-2025 consists of specific activities that will map our key achievements during the years. This allows us to track our progress towards specific outcomes and goals, thanks to an impact assessment model which has been designed to document and revise our strategy year by year. Within the strategic framework, the vision outlined will be supported by a description on how the Foundation will meet its objectives through detailed actions in order to make sure that our outcomes will concretely fulfil our mission.

In the Action Plan we will identify all the progressive steps needed to achieve our impact. We selected an effective, relevant and measurable way, by describing the way in which our purposes are arranged in programs, projects and specific activities.

We are committed to a well-organised and detailed set of actions; we aim at achieving internal growth objectives thanks to a progressive multi-year work by improving the success and the effectiveness of our external impact towards our stakeholders. Within the Plan, we aim to explain in depth how we will achieve our desired change, by creating the conditions that will share value through short-term actions, medium-term perspectives and long-term visions, including key insights we gathered during continuous dialogue with our community. **In this regard, the rolling Action Plan as a whole will cover a five year period (long term). Specific actions are envisaged for a two year period (medium term) and the plan is fine-tuned every year (short term). This will be done for each activity identified in this Strategic Plan.**

The Foundation will implement its Action Plan to align with stakeholders' priorities and expected accomplishments, in order to translate strategy in a detailed and operational plan.

Our Roadmap

1. ESTABLISH THE GROUND: 2020

The first phase of the action plan development is to analyse past and present key performance indicators and devise appropriate indicators for future activities. In this phase, the Foundation reflects on key lesions learned to gain insights that will drive strategic decisions. Data collection is integrated into organizations' work and seen as relevant and helpful, tracking progress towards outcomes.

The Foundation improves its communication with members and external audiences with an integrated communication plan. Communication strategy is designed for and tailored to each specific target audience with a range of integrated digital tools and offline communication. In this first step the Foundation reaches new audiences, implements and develops communication in existing channels and starts to strengthen its digital presence and influence among social network and tailored tools. The Foundation devises an **articulated partnership strategy** that wants to converge with member strategy and has an active participation in networks, encouraging cooperation and working to increase the number of collaborations.

In this phase, the Foundation builds on its good reputation, a focused strategic role and works well with a small number of organizations to improve its authority.
The Foundation aims, through its actions, to build strong relations and develop a long-term partnership and fundraising strategy that brings multiple institutional donors who provide support.

2. PURSUING OUR VISION: 2021-2023

In this phase, we envision the **activation of further long term partnerships.** We envision a Foundation that has is considered as a model in its field in terms of collaboration and teamwork and its reputation reflects this. We aim to have a profiled network and an articulated strategy that is distinct thanks to our flexibility in being complementary with strategies of our partners. The Foundation broadens cooperation projects with partners in different fields related to its mission.

At this stage, communication is consistent and aligned with its mission and the target audience is actively engaged. All the communication activities previously envisioned are implemented with related content and new digital tools are developed.

Influencing policymakers is part of the Foundation's core strategy.
This will be guided by a coherent advocacy strategy that reactively influences stakeholders.

3. LIVING OUR IMPACT: 2024-2025

At this stage, we envision that all programs are well defined, aligned, integrated and operate in consultation with partners to maximise their effectiveness. Strong research and contribution to the field are incorporated into works that reflect best practices.

With regards to communication, we envision active leadership in networks and coalitions to help define and push partner's agenda. By this stage, we aim a network that is highly effective, and consistently and proactively engaged with members and audiences. In addition, the Foundation has developed different communication and digital tools for each target audience and communicates actively through every channel. Communication tools are well designed, integrated, and easily accessible. The Foundation has a clear outlined strategy with target audiences and messages are consistent and highly effective at furthering organizational goals. The Foundation broadly disseminates its information in a timely manner, in early accessible forms and presents a clear and specific message to key audiences.

With regards to partnerships, we envision a wide range of multi-year partners that support the foundation in different ways and many new funders and joint ventures. The Foundation is considered a model in its field in terms of collaboration and teamwork. Its reputation reflects this, thanks to its network that is distinct from other partners due to its flexibility in being complementary with strategies of the other members. **The Foundation consolidates its presence globally with the presence of organisations that disseminate the Foundation's mission.** Furthermore, the Foundation starts to invest in impact projects to empower its role and develop innovative solutions to strengthen its impact and achieve its mission and its goals.

The Action Plan will be a constantly evolving work tool which we want to review over time to follow the changing needs of the manufacturing community to create the most diversified and inclusive environment.

We incorporate sustainable actions along our roadmap, according to responsibility, accountability and principles of relevance, by planning metrics and budget to fully program actions. Our goal is to devise workable ways to succeed in our mission while saving time and resources. We commit to monitor our outputs in order to handle and map our progress efficiently, committing the internal team, our founders, partners and members to contribute to our impact.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Appendix 1

Throughout the years, the manufacturing sector has proved to be one of the most important and resilient sectors. As a major driver of the economy, the growth in manufacturing has significantly contributed to job creation and overall global wealth.

Manufacturing Scenario

Manufacturing and Societal Well-being

Since the First Industrial Revolution, the distribution of jobs within various sectors of the economy has changed. Considering the United States as an example, the manufacturing sector have absorbed jobs lost in agriculture over the years as noted in Figure 10.[2] Many activities in other sectors depend on the manufacture of products. As a result, the growth in the manufacturing sector has also resulted to new jobs in other areas such as trade, professional services, education, and financial services.

Apart from job creation, manufacturing has been pivotal in driving productivity and innovation. The US manufacturing sector for example, with a share of approximately 16% of total value added, is responsible for 64% of private sector R&D expenditure and for 49% of innovation expenditures.[3]

Manufacturing is also spreading wealth worldwide through global supply chains, the production of high value products such as automobiles, aircrafts, and products that use semiconductor components require wide networks of multi-tiered suppliers and heavily use manufacturing technology products.

Manufacturing creates multiplier effects that generate value for other sectors. The latest numbers quantify this effect in the US with an additional $2.74 USD being added to the economy for every $1 spent in manufacturing.[4] Other estimates suggest an even more significant effect, of up to $3.60 for every dollar of manufacturing output.[5] This higher figure suggests that value generated from manufacturing not only comprise upstream value, which includes processing of raw materials, intermediate inputs and the production process, but also the broader downstream value chain as goods are sold to final consumers. Manufacturing therefore can have a significant effect for downstream services including transportation and retailing of goods, as well as other related services such as maintenance and repair, leasing, and professional services.[6]

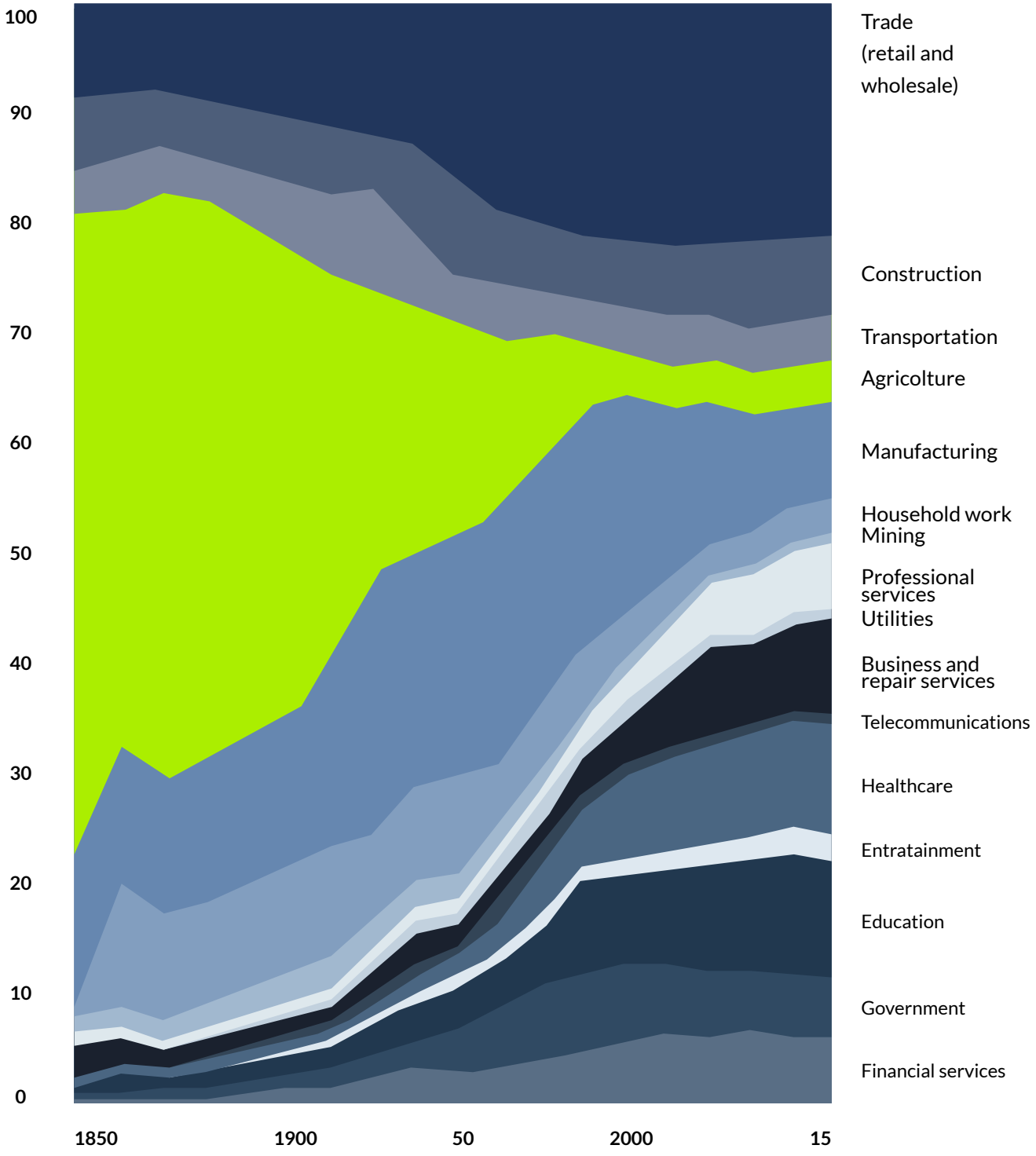
Although the sector is not immune from economic downturns as evident in job losses in the in the aftermath of the 2009 global economic crisis, recent data points to an increase in economic activity. In Europe for example, the share of total value added increased by 6% following the economic crisis in 2009. Moreover, over 1.5 million new jobs have been created since 2013.[7] Interestingly, following the economic crisis, EU member states with a strong industrial base recovered more quickly. These figures suggest a resurgence in manufacturing activity in Europe.

Manufacturing has also been an important engine of growth for developing countries in recent decades. As seen in Figure 11, there has been an increasing trend in manufacturing value added globally and the growth more pronounced in developing and industrial economies. For instance, the Asia and Pacific region has dominated global manufacturing production since 2012 and export driven development policies have led to sustained economic growth.[8] In contrast to other developing regions which exported mainly semi-processed commodities, East and South East Asian countries primarily exported manufactured goods. As these economies consolidated their labor-intensive manufacturing industries, they began transitioning into skills- and technology-intensive manufacturing which included metal products, automotive and telecommunications which led to sustained economic and income growth.[9]

Apart from the economic impact, the Fourth Industrial Revolution could also contribute to social equality and stability. According to a survey by Deloitte, executives overwhelmingly believe Industry 4.0 will lead to more social and economic equality and stability.[10] This has

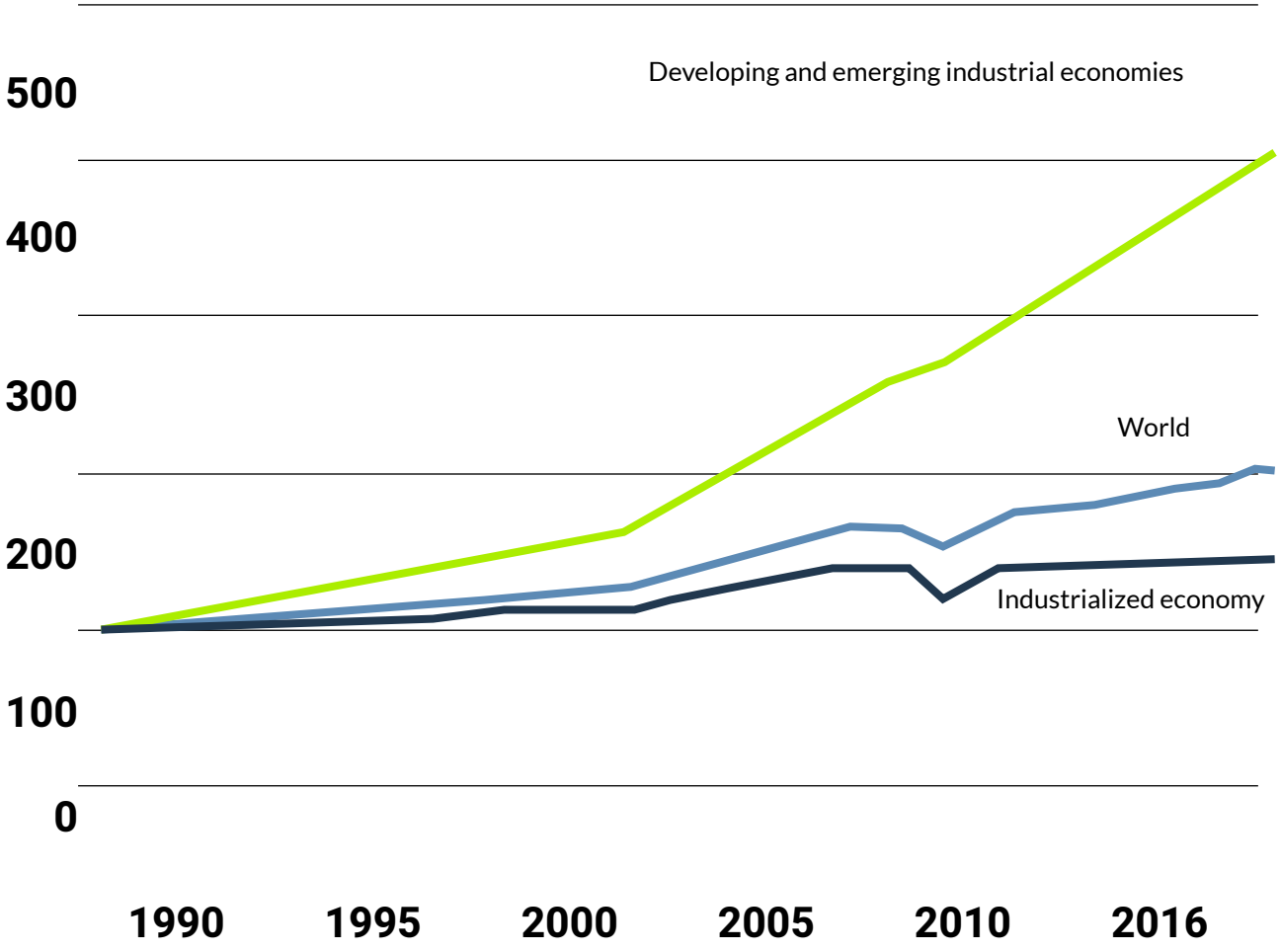
Large-scale sector employment declines have been countered by growth of other sectors that have absorbed workers

Figure 10 - Share of total employment by sector in the United States, 1850-2015



been confirmed by the 2019 World Manufacturing Foundation Strategic Plan Survey with 88% indicating that manufacturing is a social equalizer. Respondents noted that opportunities in the sector could help people from marginalised or underrepresented backgrounds to improve themselves economically by increasing their access to better paying jobs. However, respondents have noted that manufacturing can be a social equaliser only if executed correctly, for instance when the welfare of workers is protected or there is enough diversity in the workplace and is offering enough opportunities for people from disadvantaged backgrounds.

Figure 11:
Trend in Global Manufacturing Value Added (UNIDO)
MANUFACTURING VALUE ADDED (index, 1990=100)

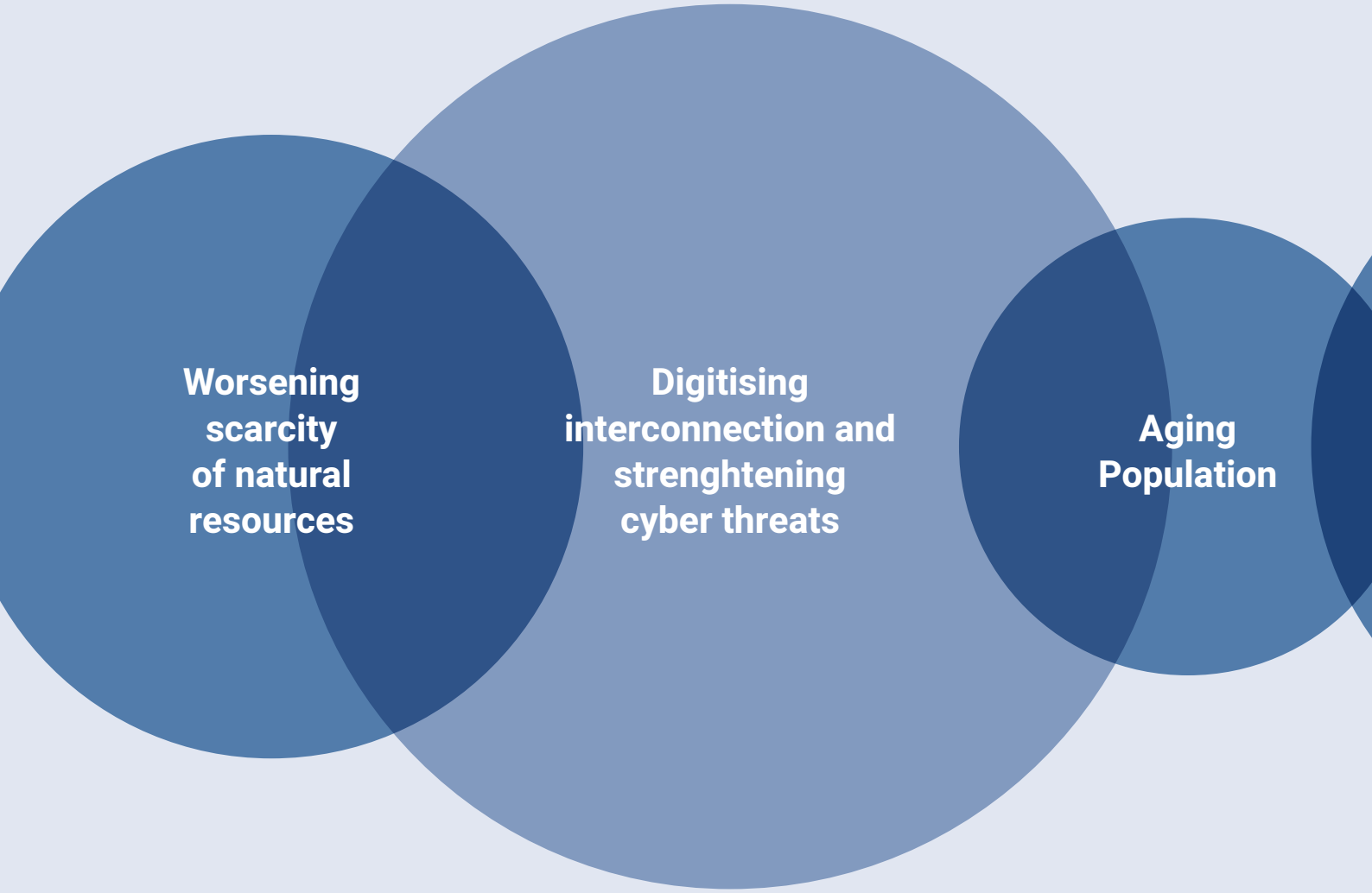


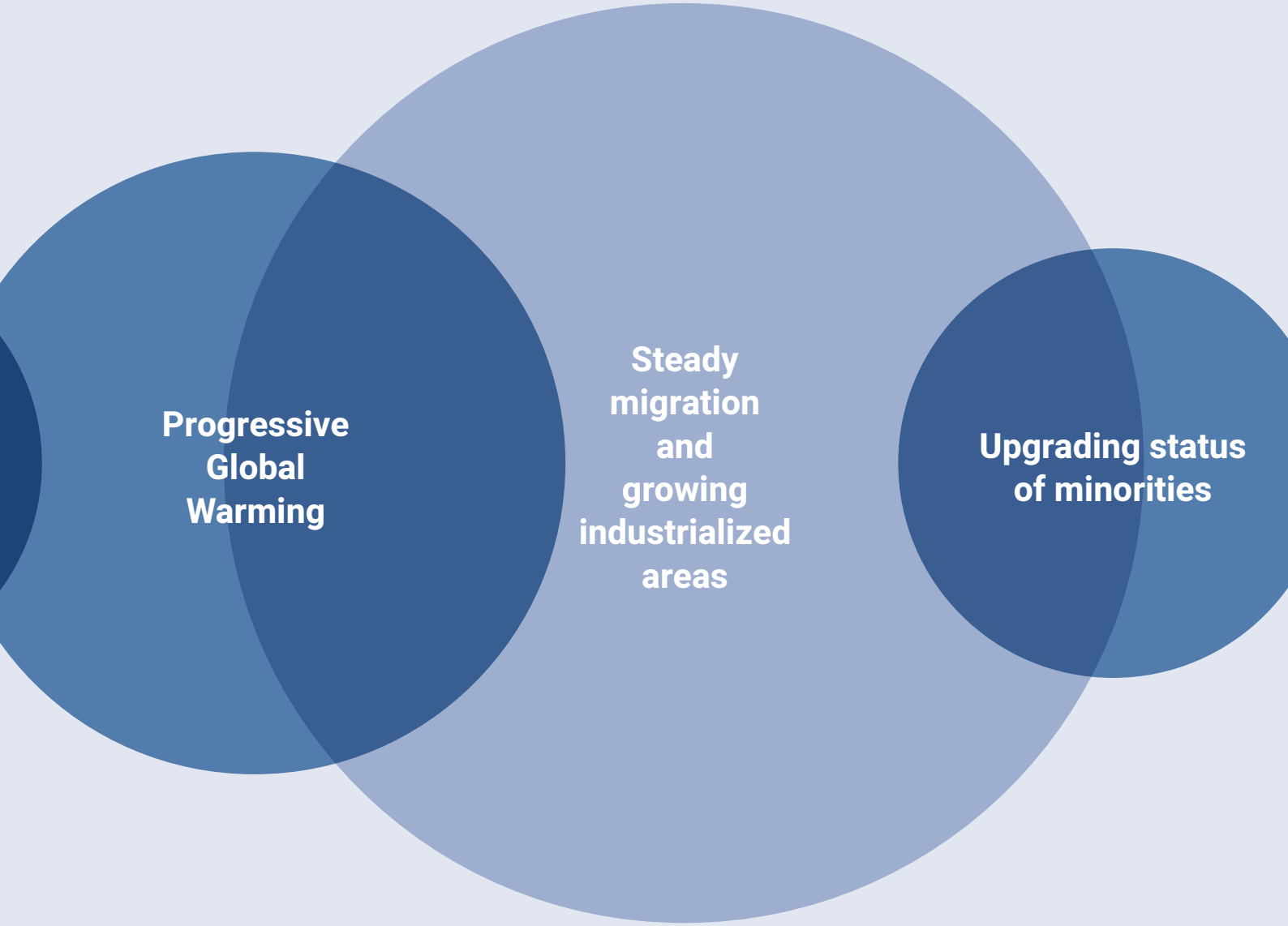
The Changing Landscape of Manufacturing

Societal Megatrends Will Shape the Transformation of Manufacturing

Broader societal megatrends continue to influence manufacturing stakeholders. These trends are shaping not only business and industry but will also have a profound impact on society and overall human development. The 2018 World Manufacturing Forum Report: Recommendations for the Future of Manufacturing has identified some of the most important and significant trends for the manufacturing industry (Figure 12).[11] Adapting to these trends is indispensable for manufacturing stakeholders and requires close collaboration between different actors. This can be achieved by international cooperation and the development and sharing of innovative practices to build a sustainable future.

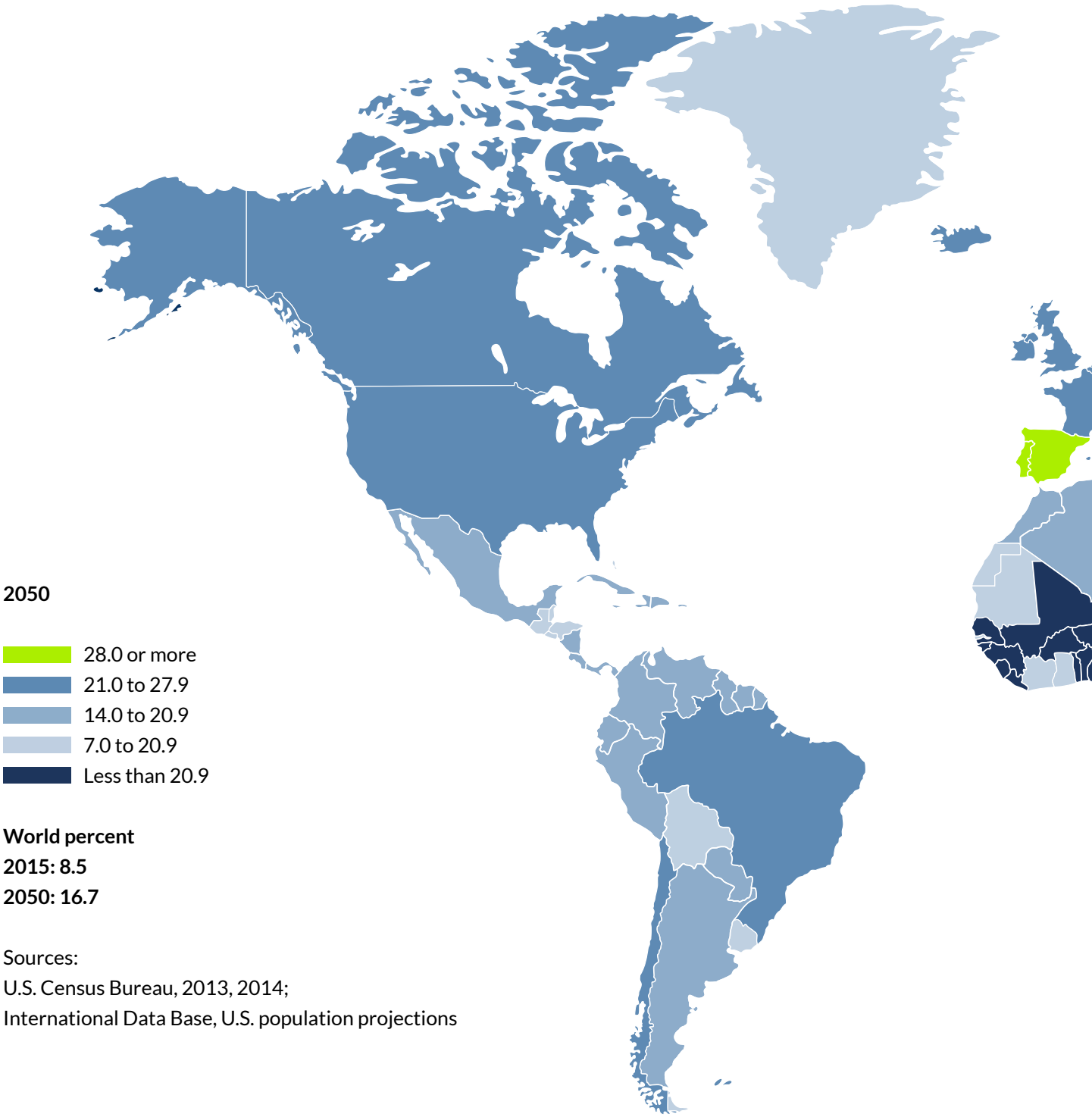
Figure 12:
Societal Megatrends (2018 World Manufacturing Forum Report)




Progressive Global Warming
Steady migration and growing industrialized areas
Upgrading status of minorities

Demographic Changes

Rising average life expectancy coupled with lower fertility rates in advanced economies are having profound economic and social impacts on society. The percentage of the population aged 65 and over will increase dramatically (see Figure 13).[12] According to the OECD, there were 28 people aged 65 and over for every 100 people of working age and this ratio is expected to double by 2050.[13] For the manufacturing sector, this means older or retiring workers will reduce the supply of available manufacturing talent. Considering variations among the world's geographical regions, Europe is the most vulnerable, with the ratio of 65-year-old individuals to the population approaching 50%.[14] In other parts of the world, the story is more



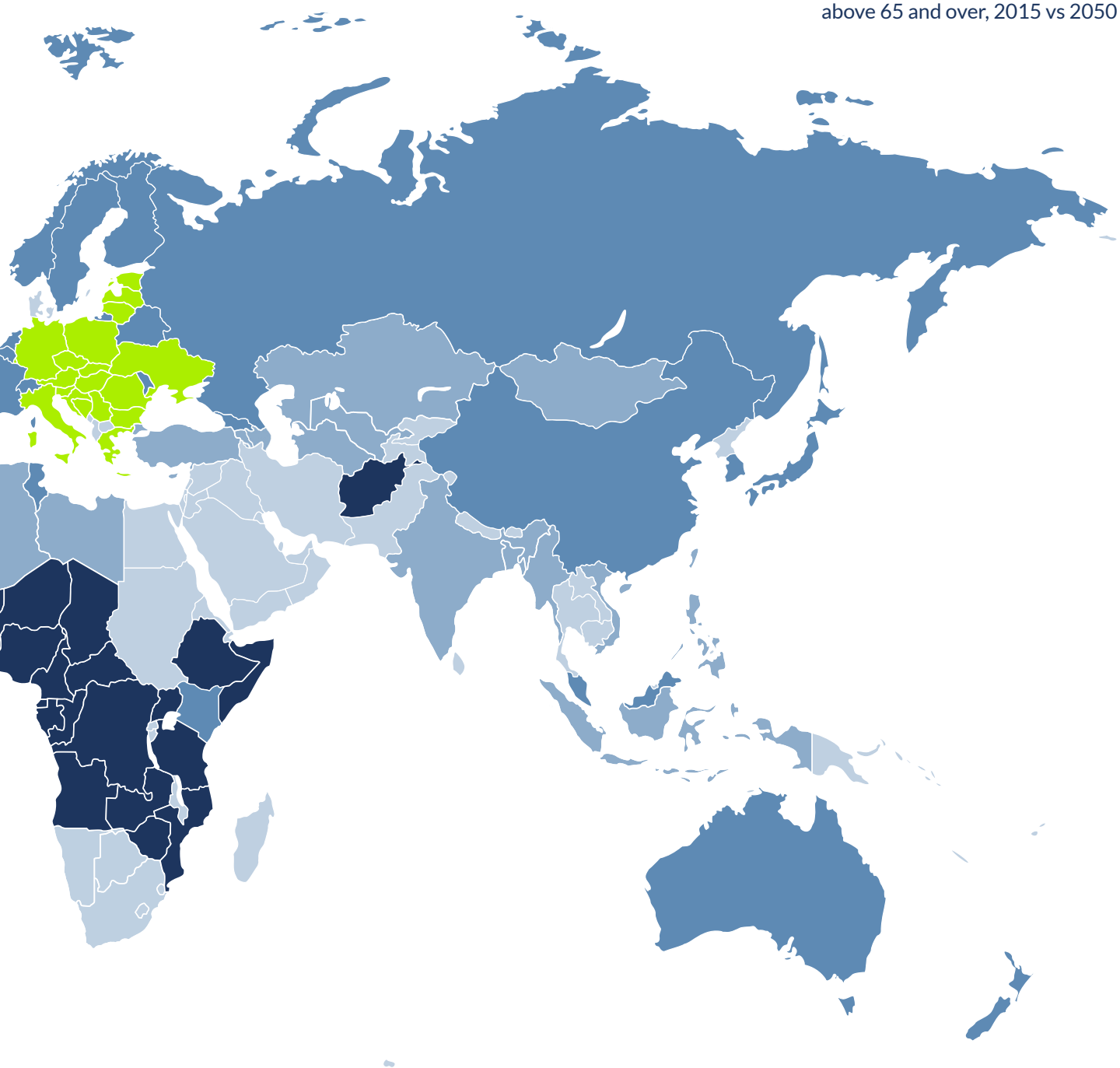
Sources:
U.S. Census Bureau, 2013, 2014;
International Data Base, U.S. population projections

comforting. Fertility levels in what the United Nations designates as lesser developed countries (LDCs), a group consisting of 48 countries exhibiting the lowest indicators of economic development, although declining, will remain high and will be double that of more developed regions.[15] These countries stand to gain from their relatively young populations.

The challenge is for these countries to capitalise on this demographic dividend, by leveraging on their younger workforce to increase output and fuel economic growth.

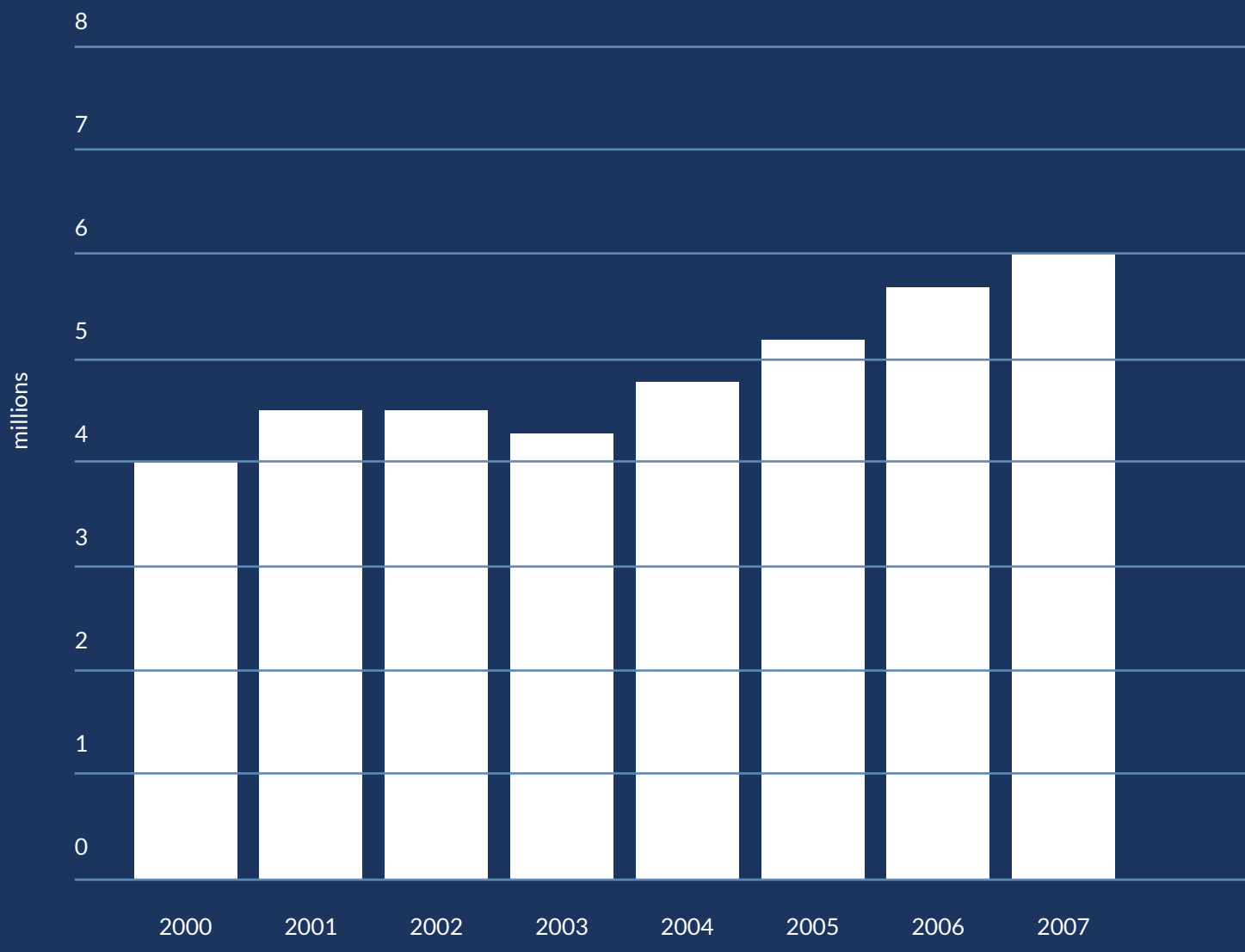
This would entail providing adequate education and training to generate more job opportunities.

Figure 13:
Percentage of Populations
above 65 and over, 2015 vs 2050



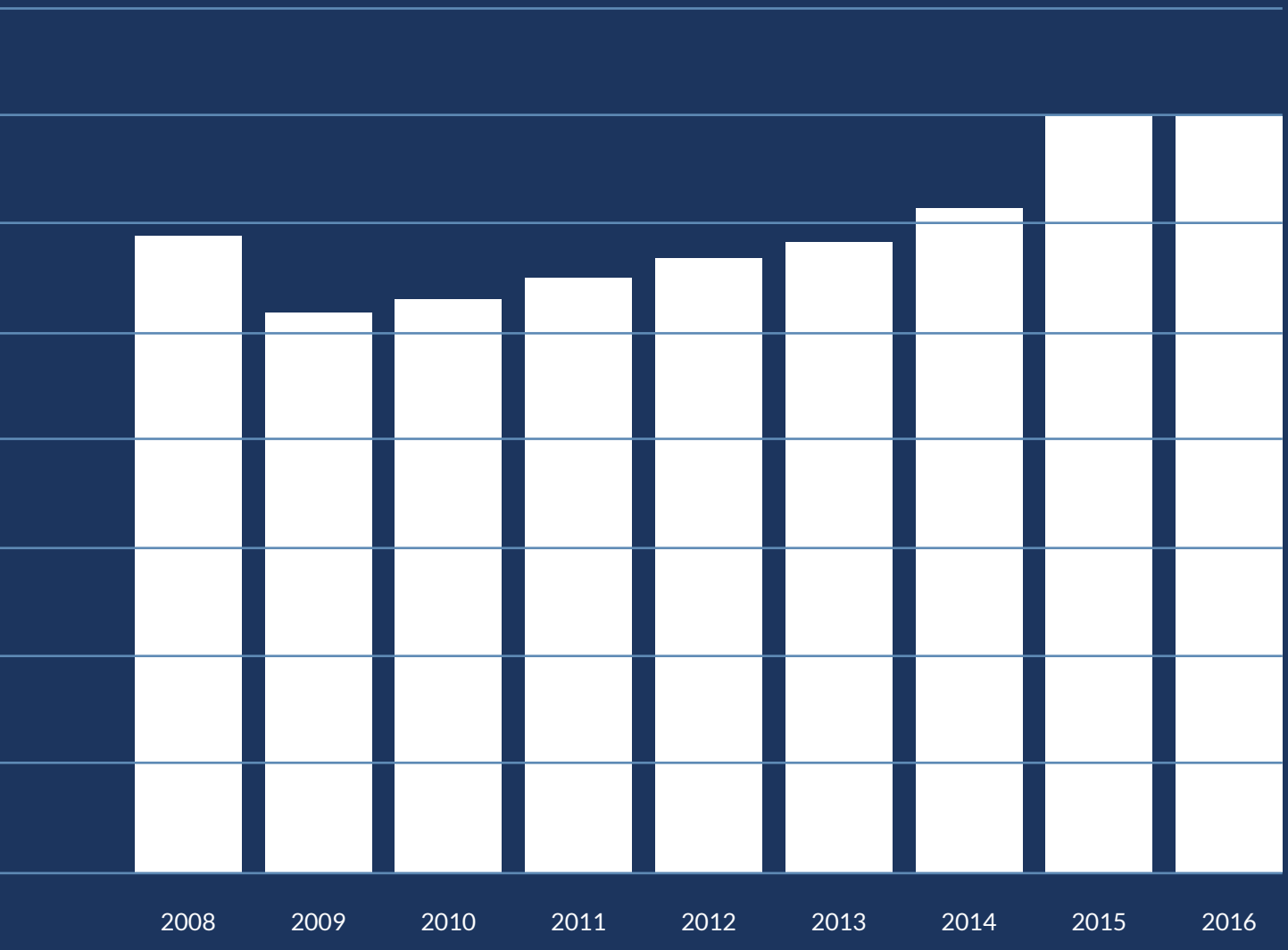
Workforce Diversity

Workplaces are becoming increasingly diverse as firms expand to new geographical markets. Global migration has also steadily increased as evidenced by inflows of foreign nationals into OECD countries (Figure 14).[16] Inclusion of migrants or foreign-born workers amid the ongoing demographic changes felt in the world's most developed economies could promote employment and productivity. In addition, having workers from different backgrounds support and often lead to increased technological and scientific innovation.[17] The implication for organisations is the need to create environments and incentives that allow them to capitalise from the benefits of a diverse workforce.



Female participation in the workforce is another important element of diversity. For example, although nearly half of the total US labour force comprises of women, women account for less than a third of the workforce in manufacturing.[18] Attracting, and retaining women has proved to be difficult and capitalising on this labour source could be critical in solving skills shortages in the sector. The same can be said for differently abled people and other underrepresented populations in manufacturing.

Figure 14:
Inflows of Foreign nationals into OECD countries
(International Organisation for Migration)



Cybersecurity and Responsible Data Use

As huge amounts of information are exchanged through digital means, threats to cybersecurity has become more important than ever. Surprisingly, a 2018 survey by Accenture found out that only 56% of surveyed executives said that their companies have an overall information security strategy.[19] The consequences for companies in the case of data breaches are profound not only in terms of economic losses but also the risk of losing trade secrets and intellectual property. An analysis of the cost of data breaches in 16 geographies and 17 industries indicate that the cost has risen by 12% over the last five years and is now estimated at $3.92 million USD on average for companies analyzed. Recent regulations such as the introduction of the General Data Protection Regulation (GDPR) which introduced significant penalties for organisations in effect require organisations to take pro-active steps and investments in safeguarding their data assets.

Environmental Megatrends

Nearly 50% of respondents in the World Manufacturing Foundation Strategic Plan Survey indicated that environmental concerns represent the top megatrend impacting of the future of manufacturing (Figure 15).
Climate change has dominated the environmental debate in recent years. Co2 emissions have reaching unprecedented levels leading to warming of global temperatures, rising sea levels, and extreme weather events. Many developing countries are also among the most impacted as these countries often depend heavily on their natural environment and they have fewer resources to cope with the changing climate. [20]
Climate change could negatively impact the firm productivity. A study analysing data from 500,000 Chinese manufacturing plants during the period 1998-2007, estimated the effects of temperature on firm-level productivity, factor inputs and output. It predicted that by the middle of the 21st century, if no additional adaptations occur, climate change will reduce Chinese manufacturing output annually by 12 percent—equivalent to a loss of nearly $40 billion in 2007 dollars.[21]
Major economies such as the United States and China are unsurprisingly the biggest contributors to global Co2 emissions as seen in Figure 16.[22] It is not surprising that regulations have focused on cutting emissions, as evidenced in Co2 emission standards in the automotive sector, which increases the cost of compliance.

Shift to Local Production

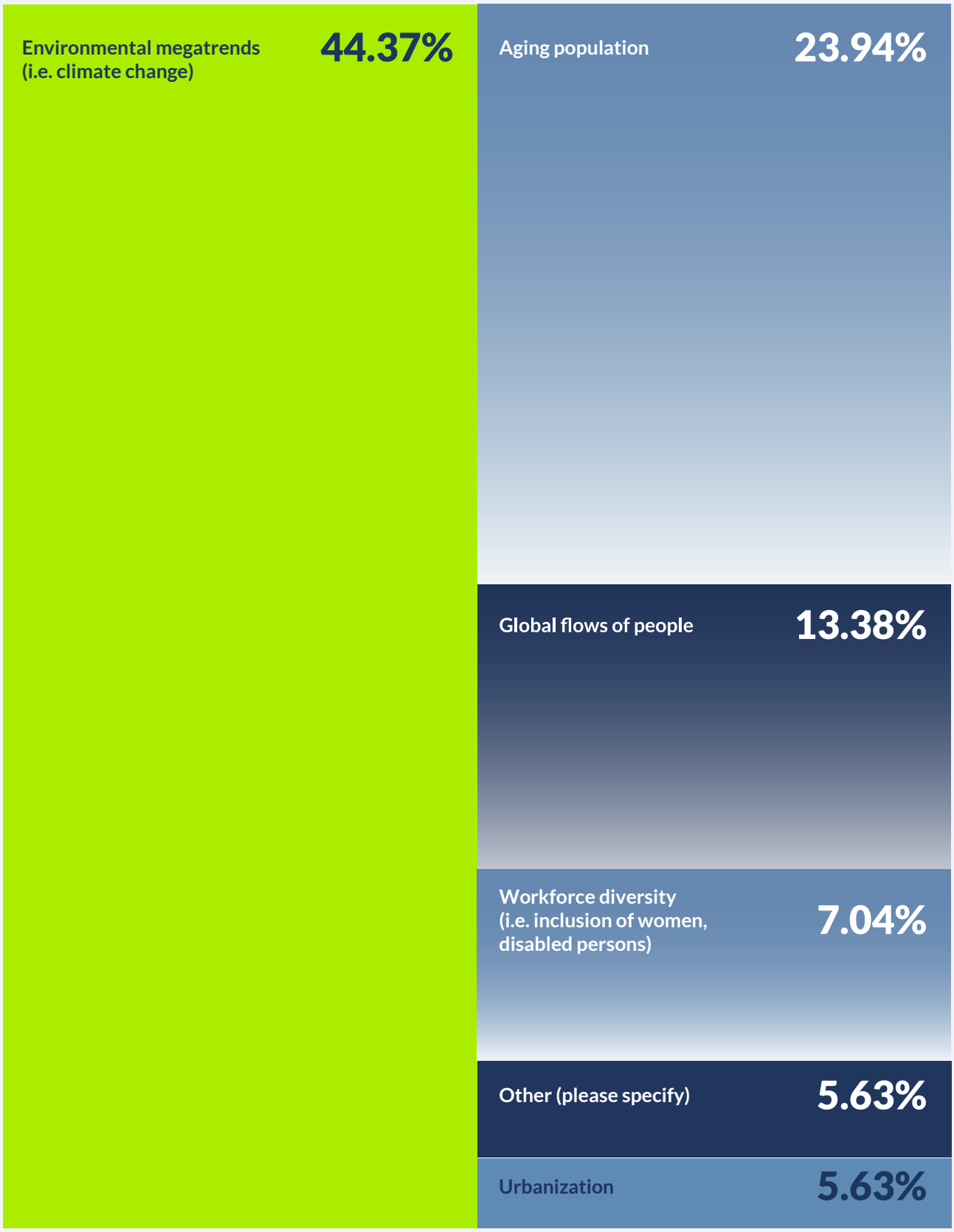
In recent decades, manufacturers have engaged in large scale outsourcing of manufacturing operations to lower production costs and access qualified workforces. In recent years, there is a trend towards more re-shoring and a deeper integration of local manufacturing in the global supply chains. In Europe for example, in the first decade of the century, unstable location advantages in some sourcing countries and the mounting global crisis helped make a case for reshoring.[23]

Whereas globalisation paved the way for outsourcing and global supply chains in the recent past, nowadays there is a trend towards geographical clustering of supply chains evident in the mega-supply chain clusters of Europe, North America and East Asia with centres of gravity in the US, Europe and China respectively. There are multiple reasons for this development, among them firm reorganisation, faster delivery times, and automation of production processes, and the greater need to control quality. [24]

Domestic policies can also have a major impact on the decision to produce locally or abroad. For instance, bringing manufacturing back to the home country can be regarded as a veiled form of protectionism where both purchasing local goods and producing them locally are viewed as patriotic acts that contribute to the home country's economic development. [25]

(Figure 15) Strategic Plan Survey

The following are examples of megatrends that are widely felt in the society today. Which do you think will have the most impact on the manufacturing of the future?



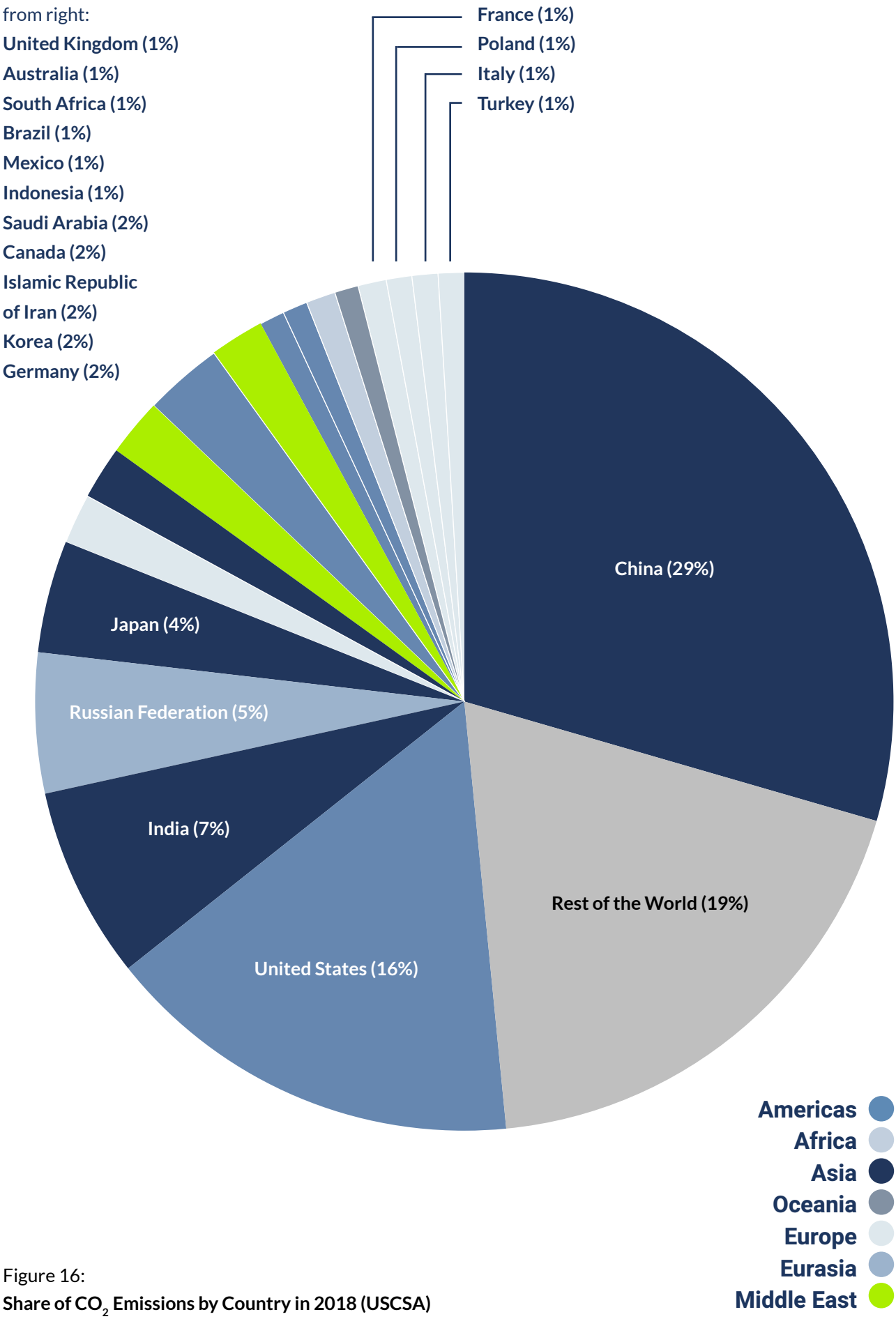


Figure 16:
Share of CO_2 Emissions by Country in 2018 (USCSA)

Unique Trends Present both Risks and Opportunities for Manufacturing

The current manufacturing paradigm and the broad societal megatrends present unique challenges for the manufacturing sector. Manufacturing has long been regarded as a "peacemaker," with its substantial contribution to the economy and society. However, these new challenges are rapidly changing the status quo, and considering the significance of the manufacturing sector regarding value creation and societal well-being, these emerging challenges need to be discussed and addressed by manufacturing stakeholders. In the context of the societal trends previously identified, some of the most pressing challenges are as follows.

Digitisation and Automation of Manufacturing

Manufacturing is undergoing an unprecedented transformation characterised by the emergence of digital and cognitive technologies. Industry 4.0, or the increased interaction between people, physical and cyber systems is radically changing how companies conduct their processes in a very profound way, more so than the previous industrial revolutions did. This time however, manufacturing is becoming more connected and data driven with new technologies having a significant effect on manufacturing supply chains. The 2018 MHI Industry Report, a survey of more than 1,100 manufacturing and supply chain leaders identifies the most significant of these innovations (Figure 17).[26] Robotics and Automation and Predictive Analytics have been identified to be among the most relevant supply chain innovations. Supply chain executives who participated in the survey believe that these supply chain innovations have the potential to disrupt the status quo and create a sustained competitive advantage for companies that embrace them.

Artificial Intelligence is among those that are expected to significantly revolutionise industry. PwC estimates that by 2030, artificial intelligence would contribute $15.7 trillion USD to the global GDP thanks to improved labour productivity, personalisation, time saved and quality.[27] Focusing on manufacturing, a separate study by Accenture indicates a value added of $3.7 trillion USD by 2035, as intelligent automation replace manual tasks, allowing workers to shift efforts to higher value added tasks and at the same time improving the productivity of capital stock.

The Digitisation of Manufacturing is an Opportunity to Transform the Workforce

The rapid evolution of technologies in manufacturing is also continuously changing the skill sets required from workers. In addition, these developments lead to the creation of new roles within manufacturing while rendering others obsolete. The importance and urgency of the phenomenon is extensively discussed in the 2019 World Manufacturing Report: Skills for the Future of Manufacturing.

The manufacturing industry has plenty of jobs available but not enough qualified people to fill them. Figures from the US Bureau of Labour Statistics indicate a widening gap between job openings and new hires (Figure 18). The difficulty in hiring qualified workers with the required skills already manifests in severe shortages for certain occupations.

Top Impacts

Technologies that will have an impact on the supply chain in the next 10 years

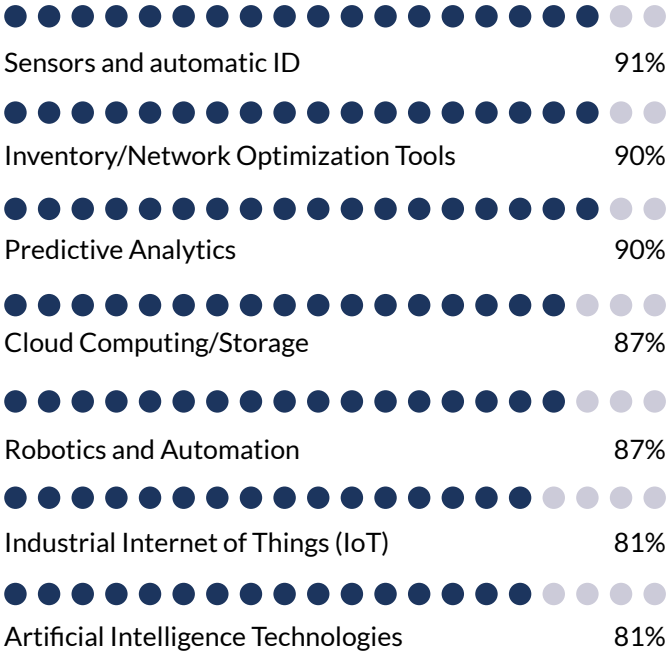


Figure 17:
Top 7 of 11 Supply Chain innovations (Source: MHI)

According to Deloitte and the Manufacturing Institute, there will be 4.6 manufacturing jobs to fill in the US between 2018 and 2028, but only 2.2 million of those are expected to be filled due to skills shortage. [28]

Automation will also result in new jobs being created while displacing others, especially those that involve mostly repetitive tasks. As illustrated in by data from McKinsey in Figure 19, the forecasted change in the time spent on different types of skills will change significantly.[29] Not surprisingly, the time spent on physical or manually intensive tasks is expected to decline and the same trend is expected for basic cognitive skills. Time spent using higher cognitive skills based on higher levels of reasoning is expected to increase. As workplaces increasingly emphasise collaborate projects and working in teams, social and emotional skills are expected to increase in relevance.

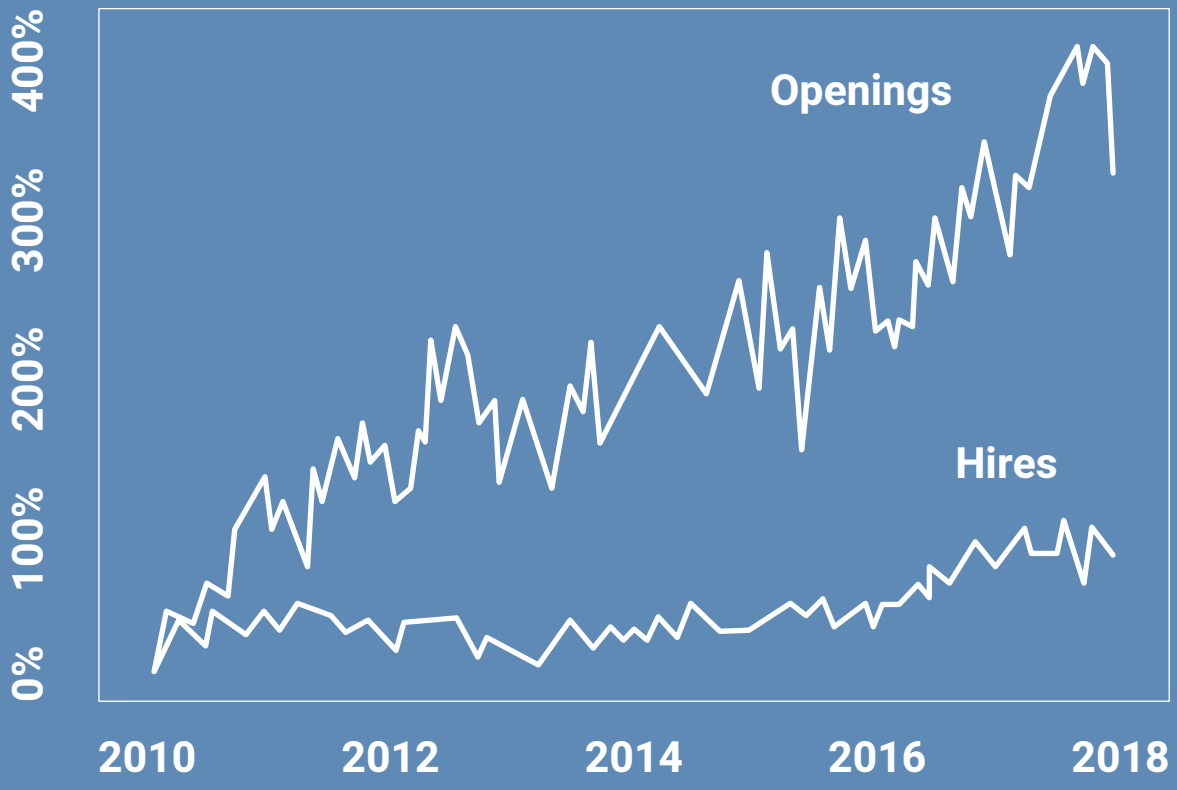
Technological skills, not surprisingly will have the most change as companies adopt more advanced technologies. The proliferation of new technology enablers such as artificial intelligence or specific technologies such as machine learning, internet of things, cloud computing, and data analytics will increase the technical content of jobs. Automation of workplaces will mean more time spent working with machines and will emphasise skills such as human-machine interaction working with different user interfaces and complex processes.

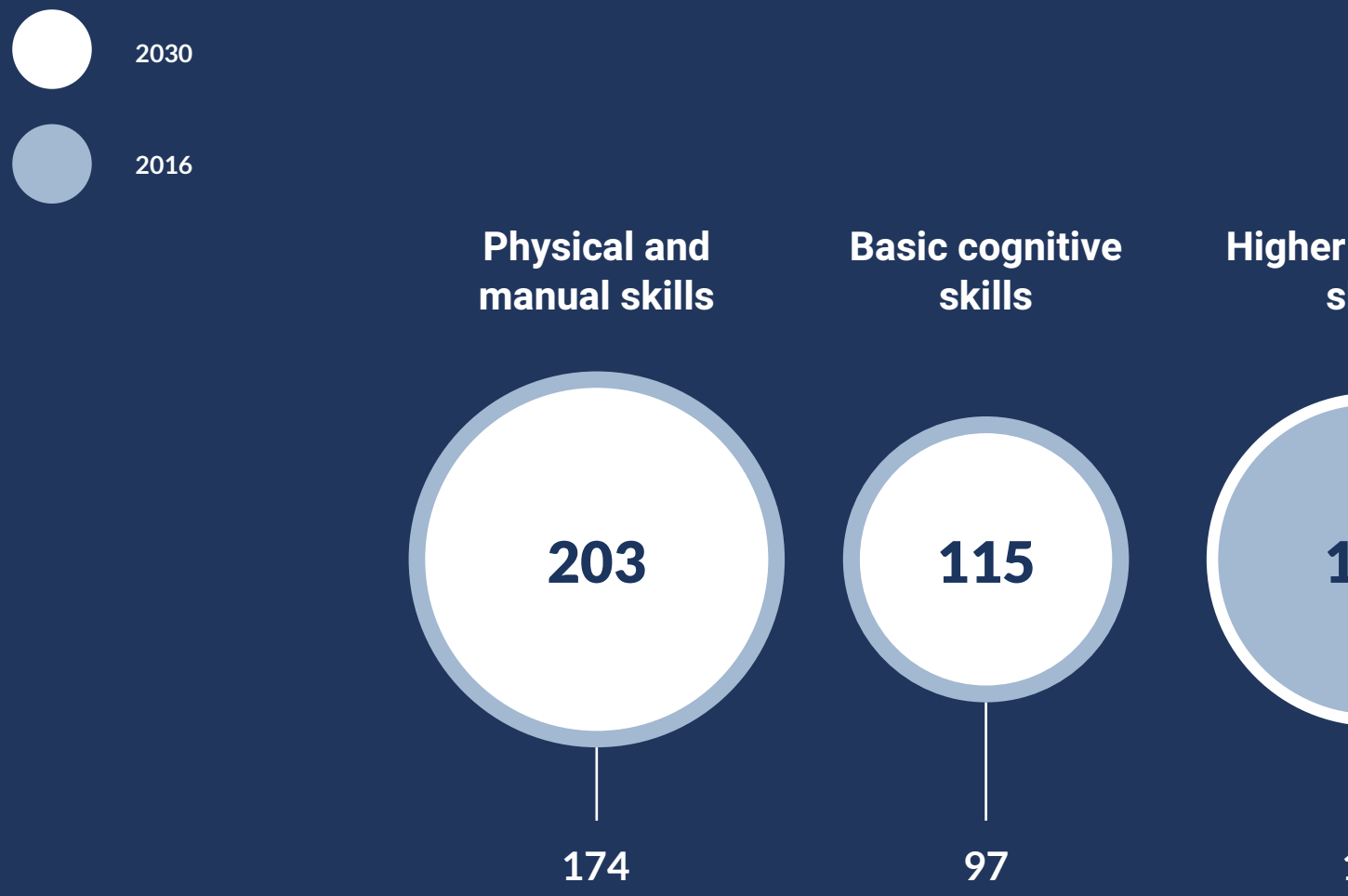
The success of digitisation in manufacturing could be hindered by the growing skills shortage. In G20 countries for example, the skills shortages could potentially cost as much as $11.5 trillion USD in lost GDP growth in the next decade.[30] Skills shortages also lead to slower innovation, reduced productivity and lower business performance.

Considering the skills shortage in manufacturing, it is imperative for different manufacturing stakeholders to put more resources on the skills development of the workforce and encourage a culture of “lifelong learning,” a learning that starts from school and continues through a worker’s professional career. Particular attention should also be given in supporting SMEs in skills and training ensuring they have access to relevant training opportunities.

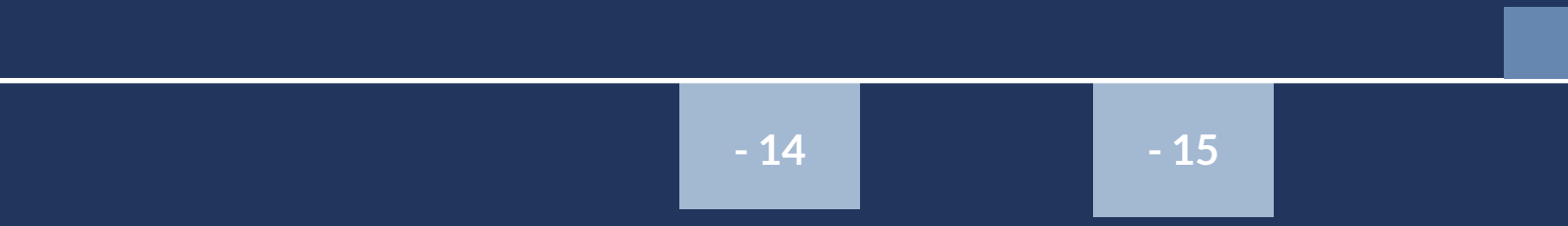
Figure 18:

Manufacturing Openings and Hires % Cumulative Change since 2009 (Bureau of Labor Statistics)





Change in hours spent by 2030, %



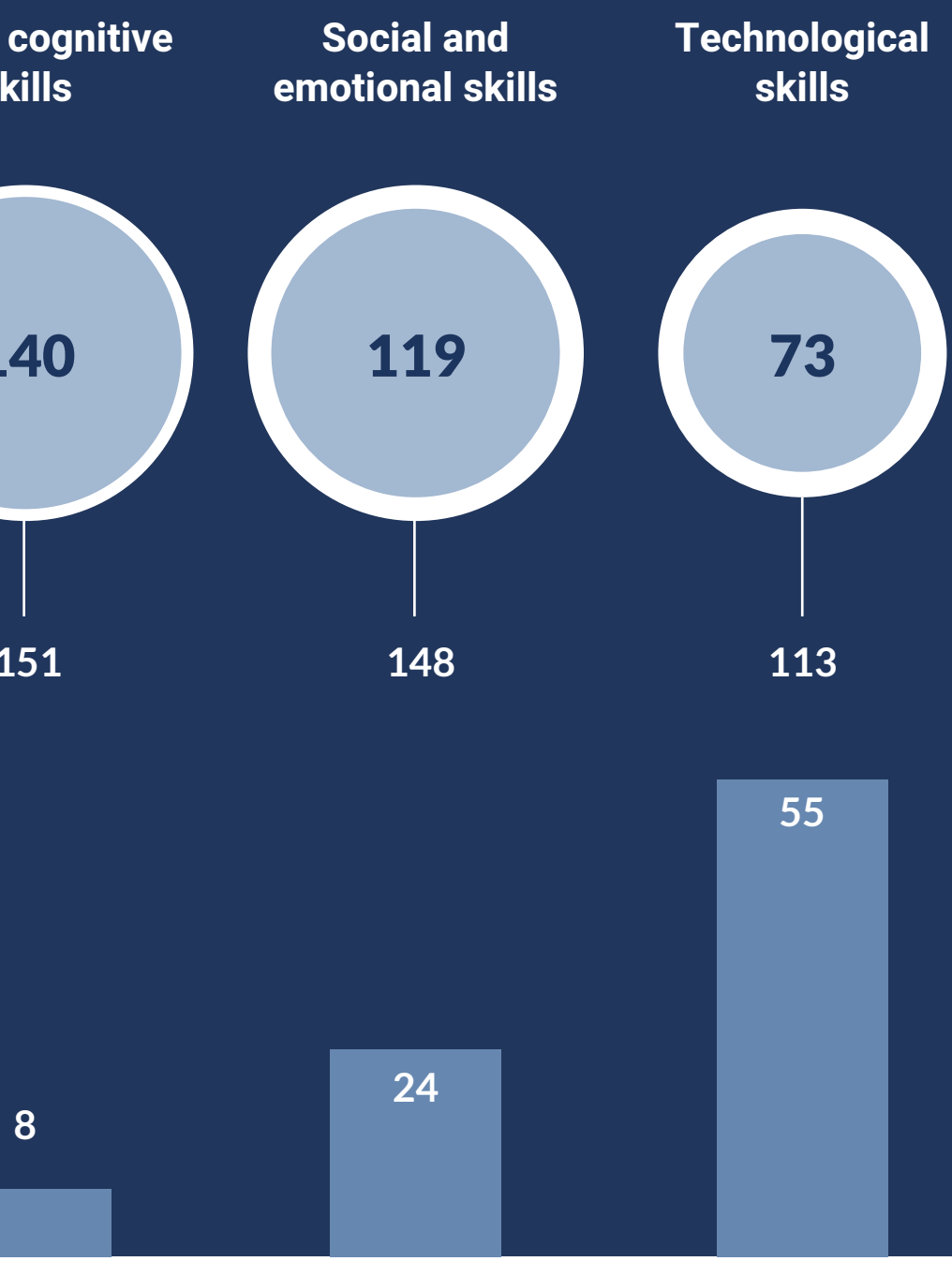


Figure 19:
Total Hours Worked in Europe and United States, 2016 vs 2030 estimate, billion (McKinsey)

Digitalisation: The biggest challenge for SMEs

What are the biggest challenges?
Does the EU need to intervene?

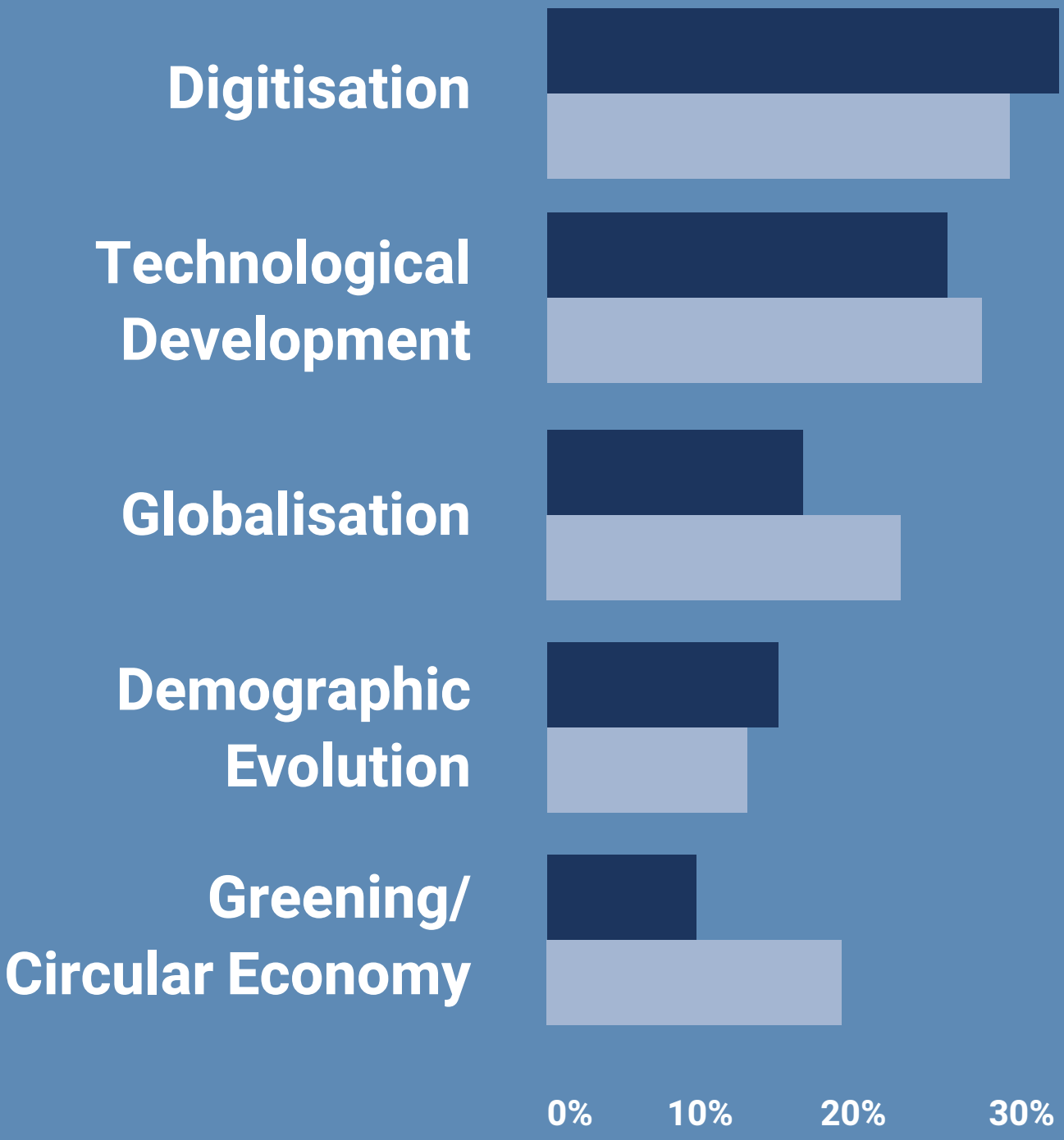


Figure 20:
Biggest Challenge for SMEs (SME United)

The Digitisation of Manufacturing is Fueling a Digital Divide Among Companies

While manufacturing challenges affect both large companies and SMEs, the capability to respond to these challenges vary significantly between these two groups. Large companies can devote substantial resources to digital transformation, while the opposite is true for SMEs. Hence, although SMEs equally see the benefits of digital transformation in improving operations, they often lack the knowledge and competencies to implement those programs. Data from SME United indicates that digitisation is the biggest challenge that SMEs are facing, alongside technological development (Figure 20).[31] An important aspect is to ensure that the workforce in SMEs possess the necessary skills, for example digital strategy and project management skills which are fundamental to initiate the digitalisation process and successfully adapt new technologies.[32] In addition due to lack of financing, it is comparatively more difficult to scale up and maintain their innovation activities compared to large enterprises. SMEs face more difficulties to obtain finance for their innovation, whether from external, internal or government sources, For example, in Europe, 12.9% noted that a 'lack of external finance' was important in hampering their innovation efforts, double that of large enterprises (6%).[33]

New Business Models Such as Servitisation and Emerging Industries will Drive Manufacturing Growth in the Future

In recent years, there has been a strong trend towards servitisation, defined as a process of building revenue streams for manufacturers from services.[34]

Servitisation in manufacturing is not a new phenomenon. However, what is new in the current "Age of Servitisation" in manufacturing is how companies can implement servitisation using new technologies. In particular, new technologies and capabilities are enabling servitisation such as such as Internet of Things (IoT), advances in sensor technologies, the ability to quickly convert operational data into real business intelligence through advanced analytics, and the ubiquity and range of mobile technologies and devices. [35]

The benefits of servitisation can be profound. From an economic perspective, this model creates potential revenue streams for companies providing economic stability (services vs. products). According to the 2017 Barclay's Annual Manufacturing Report, 83% of servitised manufacturers said they added a service component to sell more products.[36] It also allows manufacturers to increase customer retention as customers are locked into the company's services for the entire product life cycle. However, despite the promise of servitisation, companies report that the lack of understanding about servitisation as well as financial constraints constitute as barriers that are preventing them from servitising their products, or at least the reason they are delaying it. [37]

Emerging industries are also expected to fundamentally transform manufacturing value chains An interesting example is the advent of e-mobility is revolutionizing automotive value chains requiring manufacturers to re-configure production facilities and rethink their existing production processes. In the same way, advancements in e-mobility could enable automated transport of parts in production providing seamless movement of goods.

Environmental Considerations Present New Challenges and Opportunities for the Future of Manufacturing

Amid limited natural resources and pressure to reduce energy consumption, manufacturers are under increased pressure to find innovative ways to operate more sustainably. There is a growing shift from a traditional economy to a reuse and circular economy in manufacturing (Figure 21).

The linear model used traditionally in which raw materials are sourced from the environment, used in production, and then disposed as non-recyclable waste has proved to be unsustainable. While to some extent this is remedied by the reuse economy where some used products are recycled, there is a stronger case for the circular economy, which prevents waste in the first place through more efficient use of materials and products and emphasis on their re-use. In case new raw materials are needed, they must be obtained sustainably in a way that the environment is not damaged.[38] As consumers increasingly consider environmental sustainability in their purchase decisions, and environmental legislation becomes stricter, companies will have to redesign their products to stay competitive in the market.[39]

The circular economy represents unique challenges to manufacturers regarding how they can devise new ways to produce sustainably. Several barriers prevent manufacturers from fully adopting the circular model. Among them include extensive supply and manufacturing footprints which means that individual product components are sourced from several countries.[41] Such situation requires a holistic understanding of how materials are sourced and processed allowing them to identify areas to adopt remanufacturing practices and create mutually

beneficial partnerships with their suppliers. [42]

The "greening" phenomenon however not only present challenges but also provide benefits and opportunities for companies. A study by Amundi found out that companies with high commitment to the environmental sustainability (as measured by Environmental, social, and governance scores) tend to perform better in the stock market.[43] In manufacturing, companies pursuing sustainability enjoy benefits such as increased operational efficiency, ability to reach new customers and competitive advantage, strengthen brand reputation and public trust. [44]

From a Linear to a Circular Economy

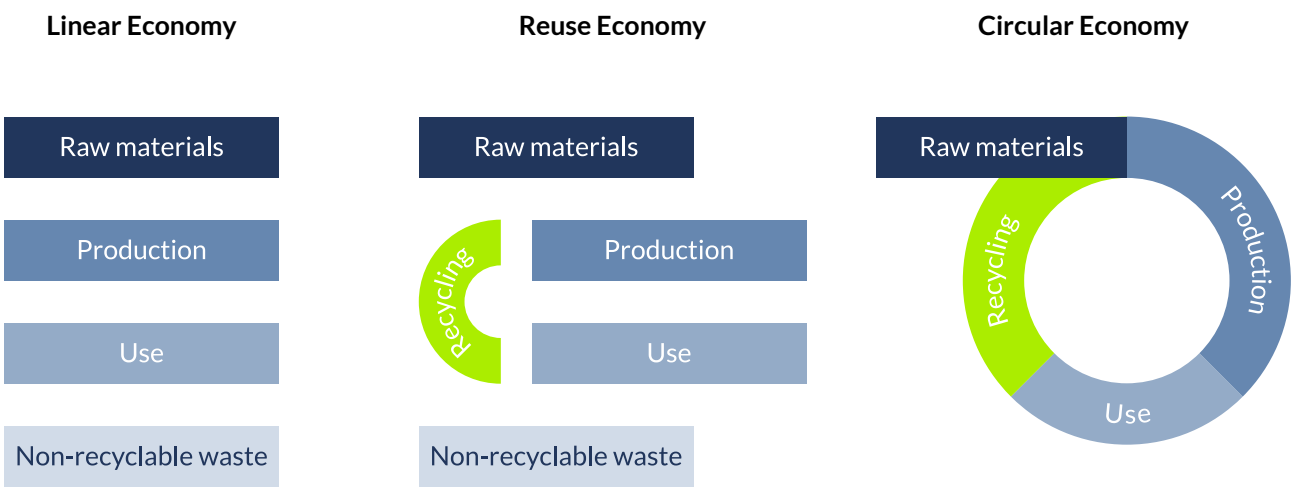


Figure 21:
Linear, Reuse and
Circular Economy (Govt. of Netherlands)[40]

Relevance of Stakeholder Cooperation

Multi-stakeholder Cooperation is Relevant in the Changing Manufacturing Paradigm

The scale of the abovementioned challenges is unprecedented, and manufacturers must seek creative ways to adapt in order to survive. The complexity of challenges has also increased the need for closer cooperation among different stakeholders, who are bound by shared interests and face common problems. This includes pooling resources and sharing knowledge and insights in seeking novel solutions and approaches.

Triple-Helix Model as a Model of Cooperation

Triple Helix Models have gained prominence in recent years. They describe different types and degrees of collaboration between the three main actors involved in innovation which include State, Academia, and Industry (Figure 22). The triple Helix Model attempts to capture this transformation of roles and relationships among the emerging primary institutional triad of university, industry and government which are conceptualised as intertwined spirals with different relations to each other in the classic innovation regimes.[45]

In a broader sense, the main role of a Triple Helix system is the generation, diffusion and utilisation of knowledge and innovation. Collaboration among these actors is intended to overcome barriers enhancing the ability to address challenges that cannot be solved by one group alone.

Traditionally, each actor in the Triple Helix Model assumes a specific role in the Triple Helix model.
Industry serves as the locus of product development and production.
Government is the traditional regulatory role being the source of contractual relations and the one that guarantees stable interactions and exchange. Finally, universities are the main source of new knowledge and technology, the generative principle of knowledge-based economies.[46]

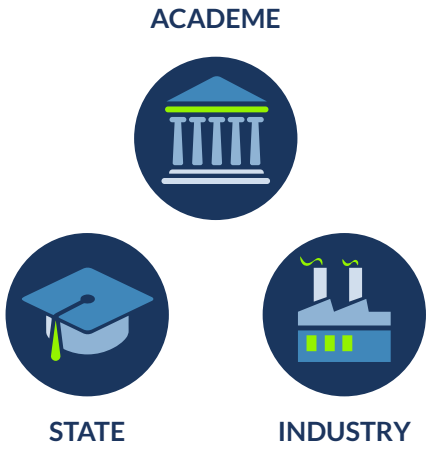


Figure 22:
Triple Helix Model (Etzkowitz, 2003)[47]

However, the evolution of today's knowledge-based society has augmented these traditional roles with other actors also assuming the roles of their counterparts. For example, innovation has been traditionally linked with product development and hence primarily the responsibility of Industry. In recent years, universities are assuming a more prominent role in innovation, especially in creating favourable conditions for an open innovation mentality. In addition, there is an increasing shift towards more collaborative relationships among the three major institutional spheres. This is the case when innovation policy and innovation practices are increasingly the outcomes of interaction and co-creation rather than prescriptive measures from government. [48]

A variant of the Triple Helix model known as the Quadruple Helix model also foresees integrating the perspective of the society, in particular from media-based and culture-based public.[49] These four groups—academia, industry, government, and society—are not involved in unidirectional push-pull relationships, but rather in multi-layered, dynamic, bi-directional interactions. This makes society a major actor in national innovation systems and hence highlights the importance of actively integrating the public into innovation projects.[50]

The value of the Triple Helix model is reflected in the World Manufacturing Foundation Strategic Plan Survey where 62% of respondents reported that their organisations are already involved in partnerships that involve Industry, Academe, and Government (Figure 23).

Do you take part in partnerships involving Education, Industry and Governments (Triple Helix Model)?

YES	61.83%
NO	38.17%

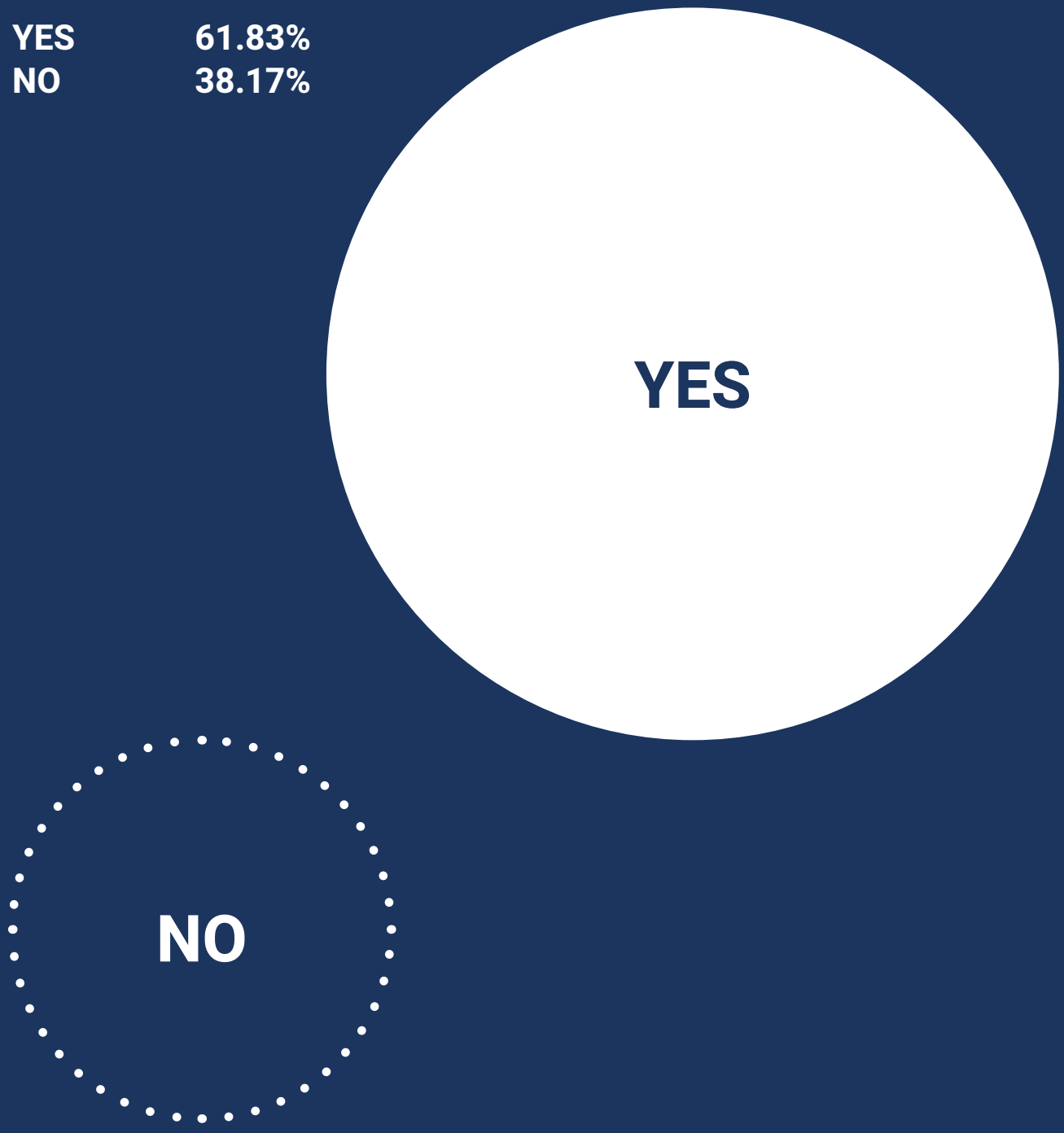


Figure 23:
Participation in Triple Helix Partnerships

Regional and Intra-regional Cooperation Promote Cohesion in Manufacturing

Michael Porter argued that the existence of regional clusters which are defined as "geographic concentrations of interconnected firms and institutions in a particular field, "provide a region with competitive advantage."[51] Within the context of clusters, networking among different actors such as companies, universities, governments and research institutions permits collaboration enabling them to share resources and knowledge on projects.

In addition to regional cooperation, cooperation among regions can identify areas of common interest such as policies, organisational issues, technological concepts as well as common goals. An example is the Four Motors for Europe, a transnational, interregional network of four highly industrialised and research-oriented regions in Europe which includes the Auvergne-Rhône-Alpes of France, Baden-Württemberg of Germany, Catalonia of Spain and Lombardy of Italy.

Manufacturing-focused Events as Platforms for Collaboration

A platform that has gained more prominence are manufacturing summits that bring together different stakeholders to discuss important trends affecting the sector. In these events, stakeholders can discuss shared challenges and find solutions to those commonalities. This fosters a spirit of collaboration and pooling of different perspectives in decision making. This is evident in global forums where stakeholders from both developed and emerging economies are represented. In the same way, these platforms can pool best practices from both large multinational companies and SMEs on how they are tackling manufacturing challenges.

The demand for manufacturing events has greatly increased in recent years amid continued disruption in the manufacturing sector. Manufacturing events have become an accessible platform to learn about new technologies and developments in sectors such as Artificial Intelligence, Internet of Things, Data Security and many other topics. Manufacturing events have also evolved to important networking opportunities allowing actors to individuals to exchange ideas with peers on different topics.

The market for manufacturing events is very saturated, with numerous manufacturing events taking place in every major region of the world. Events can be open to interested parties or by invitation only and usually attended by C-Suite level executives and industry leaders. A more well-rounded approach is to engage participants from major stakeholder groups from the actors in the Triple Helix Model identified previously - industry, academic and research Institutions, and government. In terms of format, manufacturing events use a combination of keynote speeches and panel discussions, with some being part of bigger exhibitions or expositions.

Given the many players in the market, competition for funding is intense, prompting different players to offer a unique value proposition. Organisers have invested on building brand awareness to maximise engagement from various manufacturing stakeholders. Collaborations with respectable organizations on national, regional, and global levels also lend more credibility to events, which often involve the participation of international experts and institutions.

Non-profit organisations such as the World Manufacturing Foundation can assume a strategic role to allow these platforms like manufacturing forums to flourish, facilitating exchanges between different stakeholders. In addition, given their impartiality and non-commercial nature, non-profit organisations can help support policymakers identify the most contentious issues and devise strategic actions that benefit the manufacturing sector.

World Manufacturing Foundation in the Current Manufacturing Paradigm

The World Manufacturing Foundation is relevant in the current scenario as it serves as an important platform for different stakeholders to cooperate in the face of the changing manufacturing paradigm. In this regard the Foundation is able to bring together key actors from the Triple Helix Model and society and involve them in various activities. Given the rapid pace of innovation in the sector, stakeholders need to be informed about new trends in the sector which include new technological and policy developments.

Appendix 2

Stakeholder Survey Questionnaire

Background

The World Manufacturing Foundation Strategic Plan Survey was developed to engage different actors from different stakeholder groups and solicit their opinion on different aspects of the Stakeholder Plan. This was done to ensure that the views expressed in the Strategic Plan encapsulate the views of stakeholder groups that affect and are affected by our different activities.

Methodology

The Stakeholder Interview took different forms. Telephone Interviews are 60-90 minute interviews that are focused on open-ended questions, and targeted at a selected group of individuals. The second type is an online questionnaire also targeted at selected individuals representing key organisations. The stakeholders for Type 1 and Type 2 Questionnaire are among the ones that are pre-selected by the Foundation and have a great understanding about the mission of the Foundation such as Ambassadors and Partners. Lastly, a Type 3 Questionnaire (general survey) is the most comprehensive and composed of both open-ended questions was sent to the Foundation's mailing list, which includes previous participants to the World Manufacturing Forum. The differences between the three questionnaires are summarised below.

Type	Format	Respondents	Questions	Total Number of Questions
1	Telephone Interviews	Selected	Open Ended	12
2	Online Questionnaire	Selected	Open Ended + Multiple Choice	31
3	Online Questionnaire	World Manufacturing Foundation Mailing List	Open Ended + Multiple Choice	67

Structure

The questions in the survey cover the following topics.

Manufacturing and Competitive Scenario

The respondents were asked about their opinions on the general importance of manufacturing and the drivers of future manufacturing. In addition, they are asked about how cooperation among stakeholders could be leveraged upon to respond to identified manufacturing challenges.

Foundation Identity and Positioning

The respondents were asked to give their views on the Foundation's vision, mission, and their relevance to their organizations' priorities. Respondents were also asked about what they perceive as strengths, weaknesses, opportunities and threats of the Foundation.

Stakeholder Analysis

The respondents were asked if they partner with similar organisations such as the World Manufacturing Foundation and what kind of organisations they would like the World Manufacturing Foundation to partner more with.

Strategic and Action Plan

The respondents were asked their opinions on the Foundation's strategy and the courses of actions that World Manufacturing Foundation should implement in the next five years.

Profile of Respondents

Gender: The respondents by gender distribution are as follows.

80%
Male

20%
Female

Country of Origin

The Strategic Plan Survey has a global scope with 57% of respondents coming from outside Italy.

43%
Italy

57%
Outside Italy

Organisation Type

The respondents come from varied types of organisations with roughly two thirds coming from the industry (companies and industrial and trade associations)

67% **Industry**

7% **Government**

10% **Others**

16% **Academe/Research**

Role

The majority of respondents have executive/director roles in their organisations

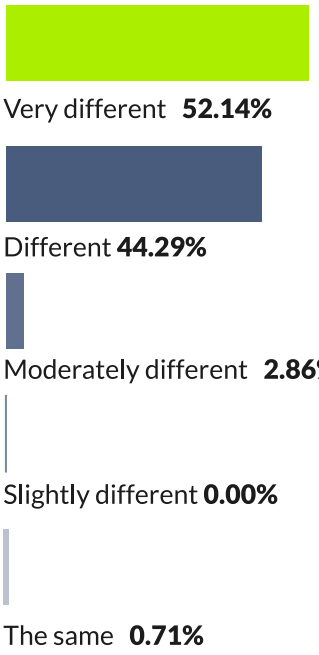
39%	Director
12%	Other
13%	Professor/Educator
3%	Staff
3%	Researcher
30%	CEO/President/Other C-level

Selected Results from the

World Manufacturing Foundation

Strategic Plan Survey

How do you see the manufacturing sector in 10 to 20 years (vs. today)?



Very different **52.14%**

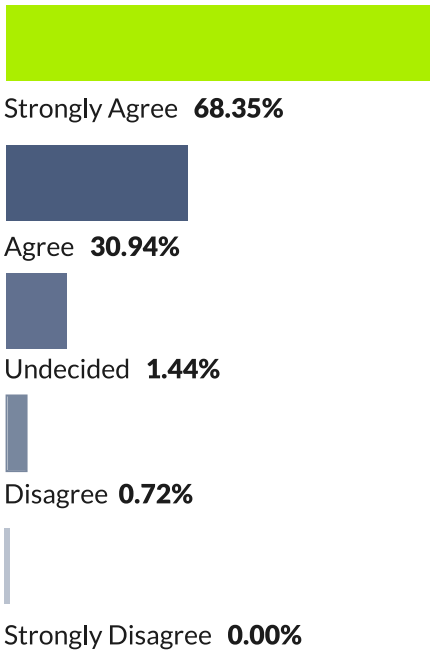
Different **44.29%**

Moderately different **2.86%**

Slightly different **0.00%**

The same **0.71%**

How much do you agree with the following statements? Manufacturing creates added value for other sectors (i.e. professional services, resource extraction, etc.)



Strongly Agree **68.35%**

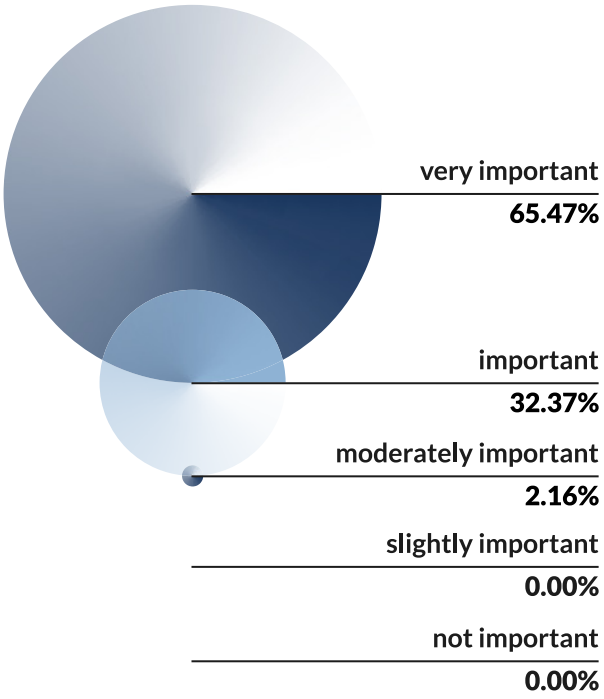
Agree **30.94%**

Undecided **1.44%**

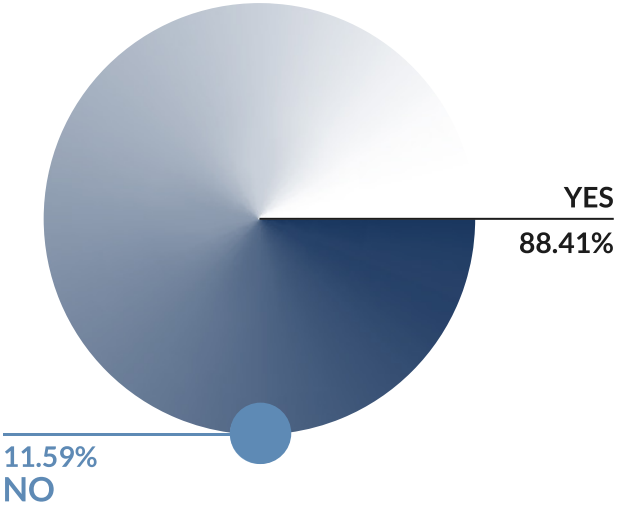
Disagree **0.72%**

Strongly Disagree **0.00%**

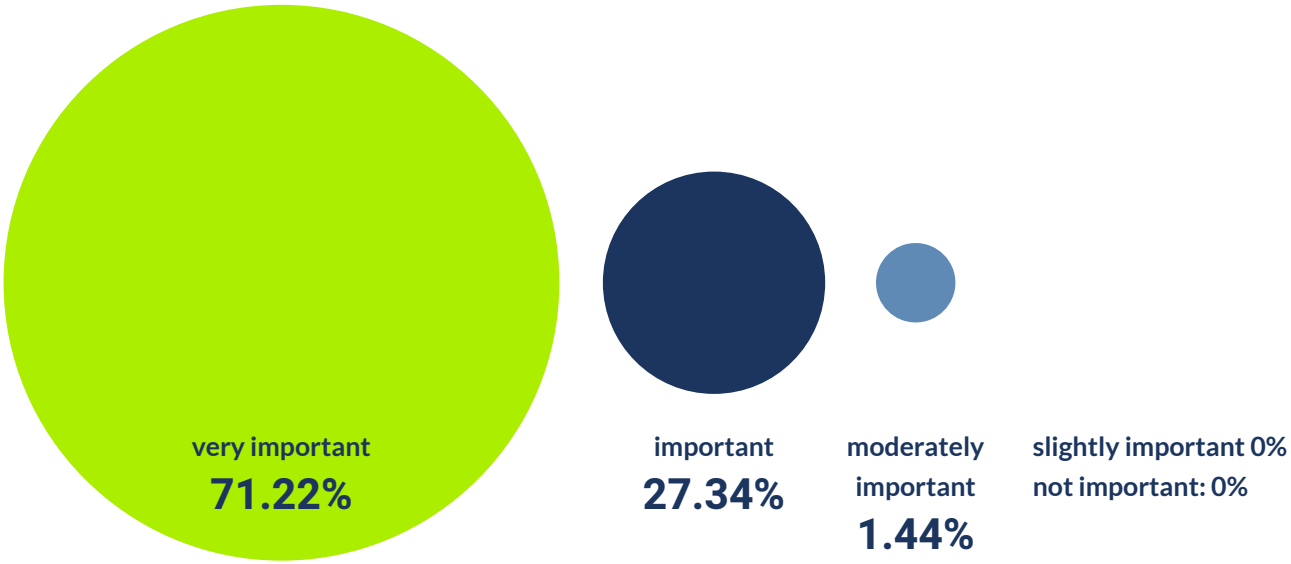
In your opinion, how important is manufacturing in enhancing the societal wellbeing of the world?



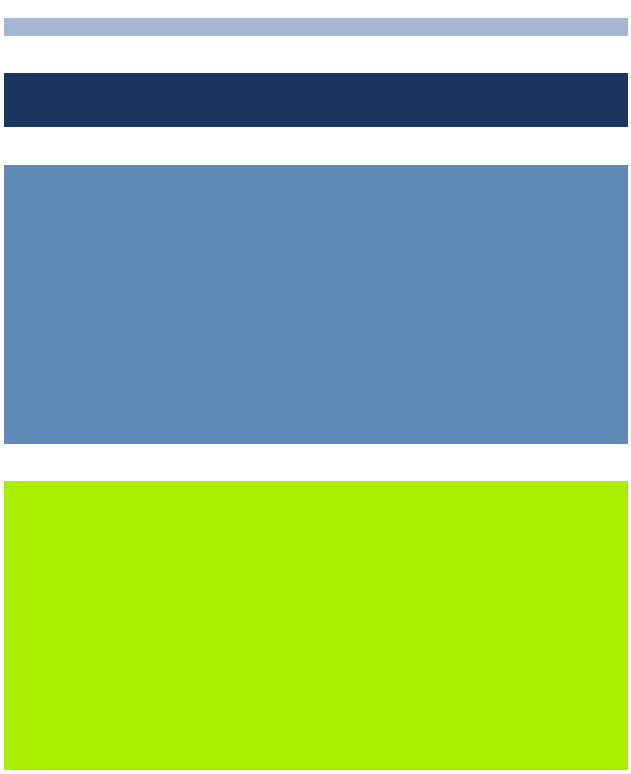
Do you believe that manufacturing is a social equaliser?



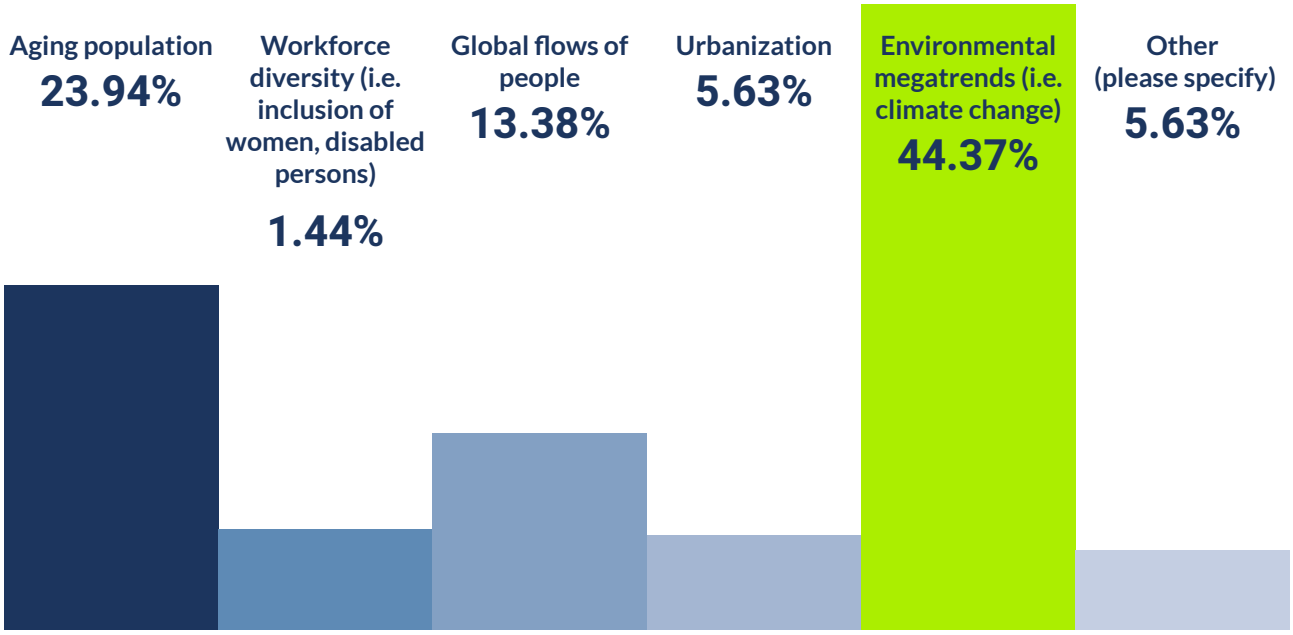
How important is digital transformation in shaping the future manufacturing?



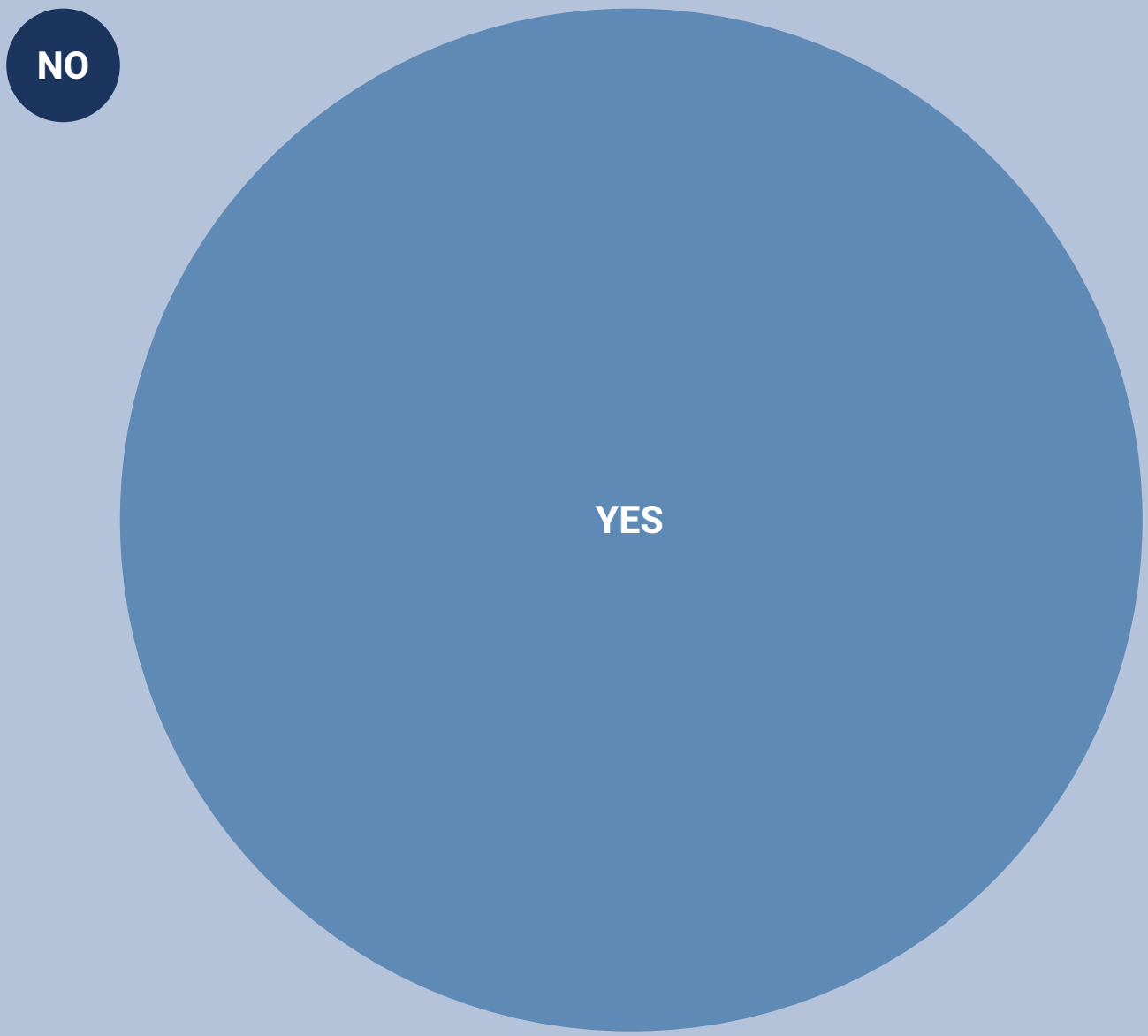
To what extent do you agree that environmental issues are important in shaping the future manufacturing?



Which of the following mega-trends do you think will have the most impact on the future of manufacturing?

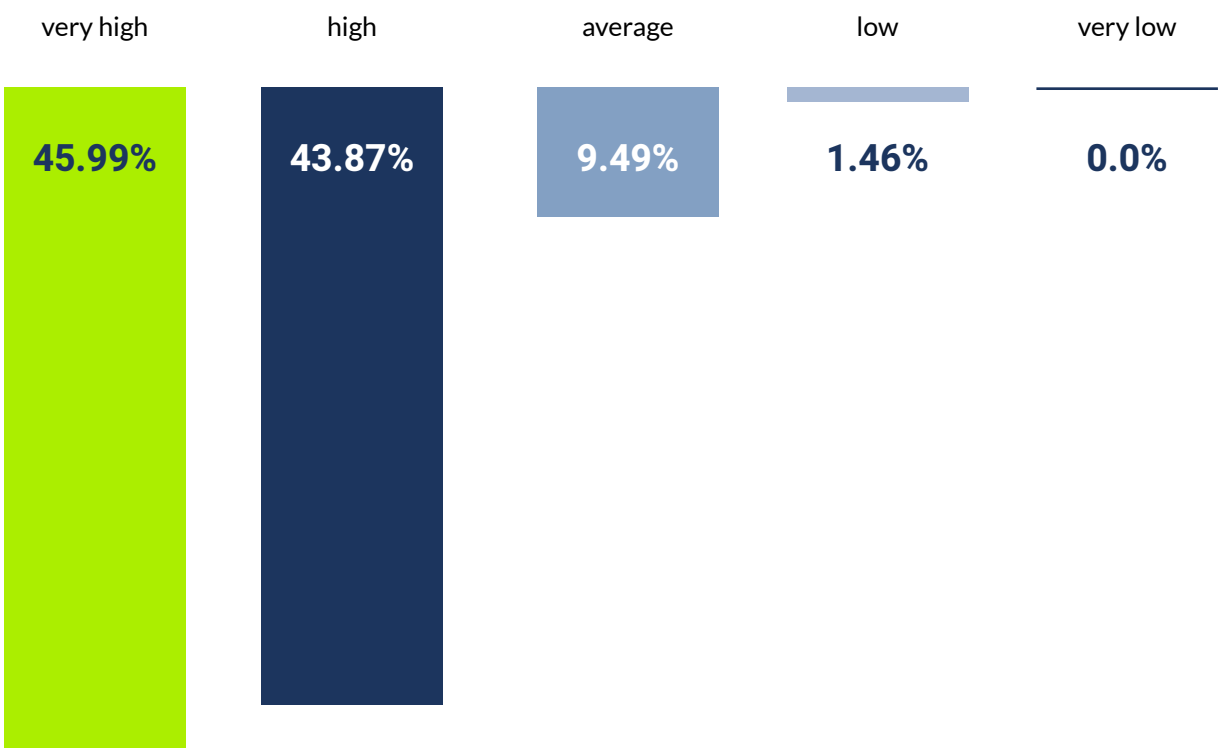


Do you think manufacturing needs to be more inclusive (i.e. increase participation from women, disabled people, older workers, immigrants)?

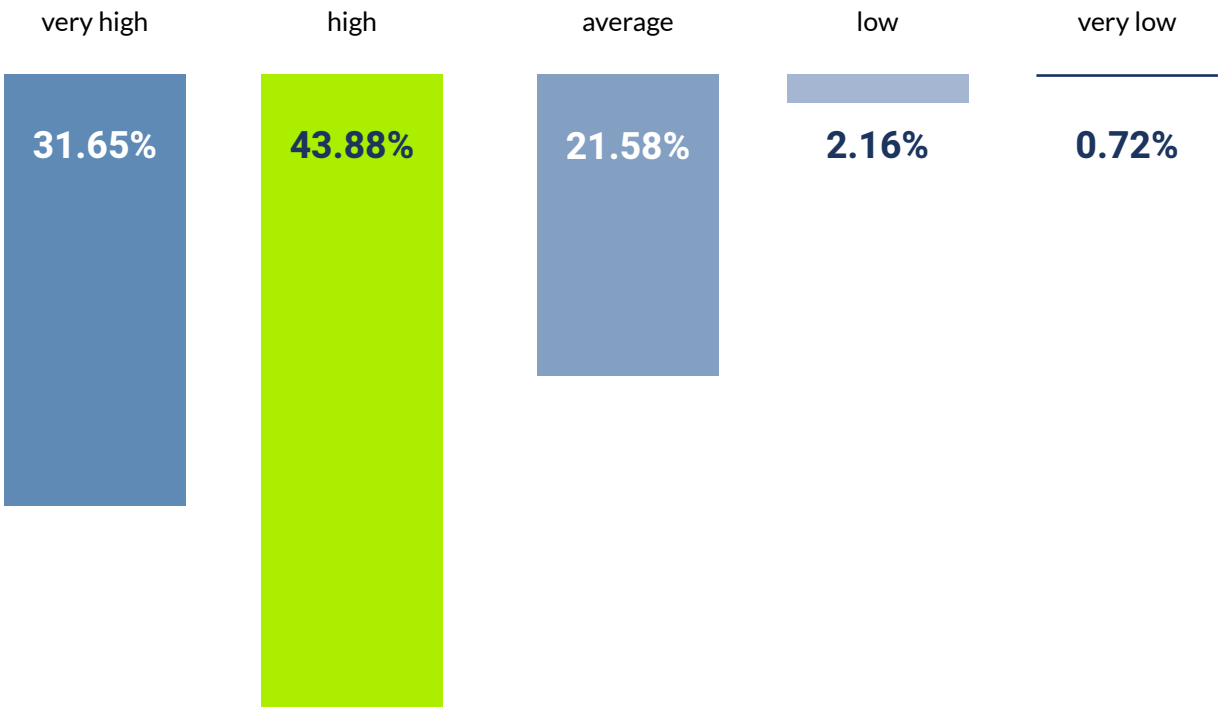


YES	90%
NO	10%

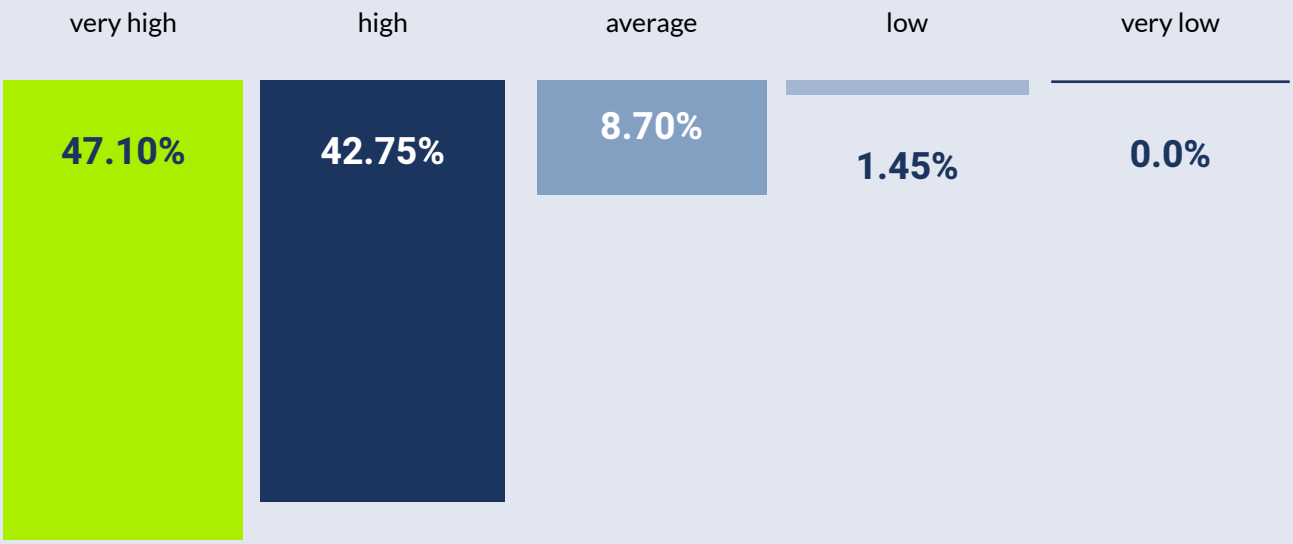
How relevant do you think the vision is in the current or future scenario/environment?



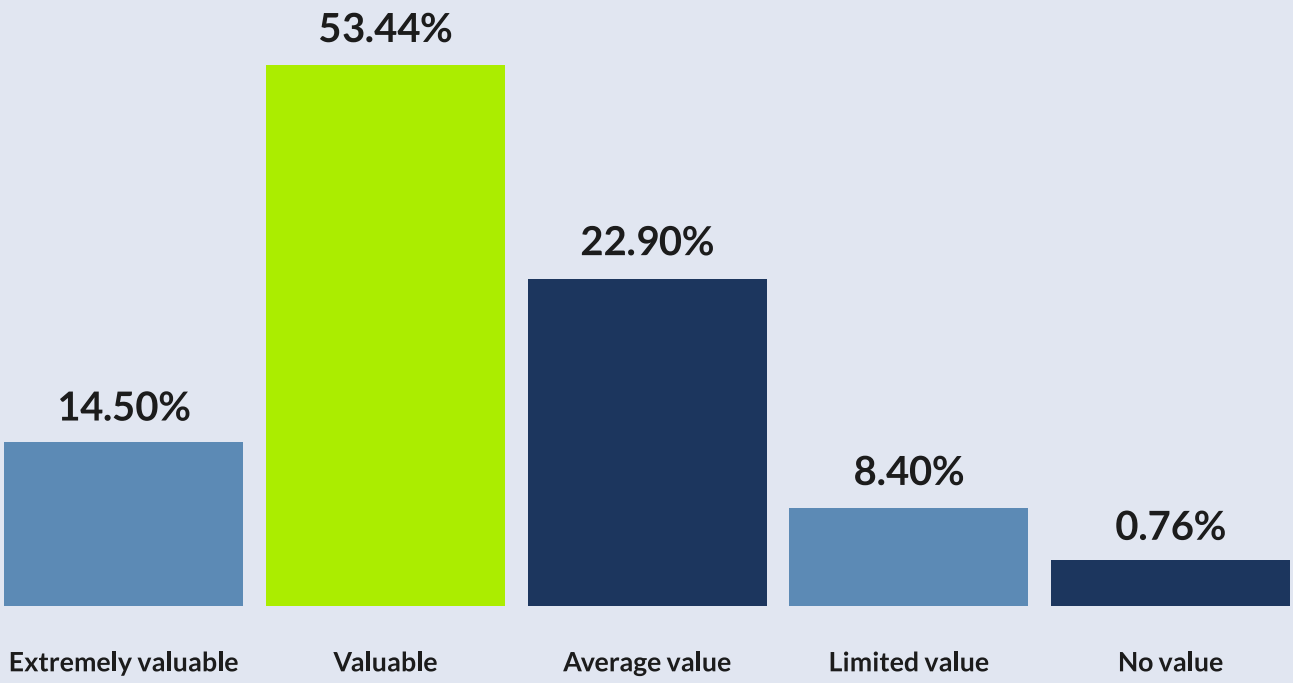
How aligned is the World Manufacturing Foundation vision with the priorities of your organization?



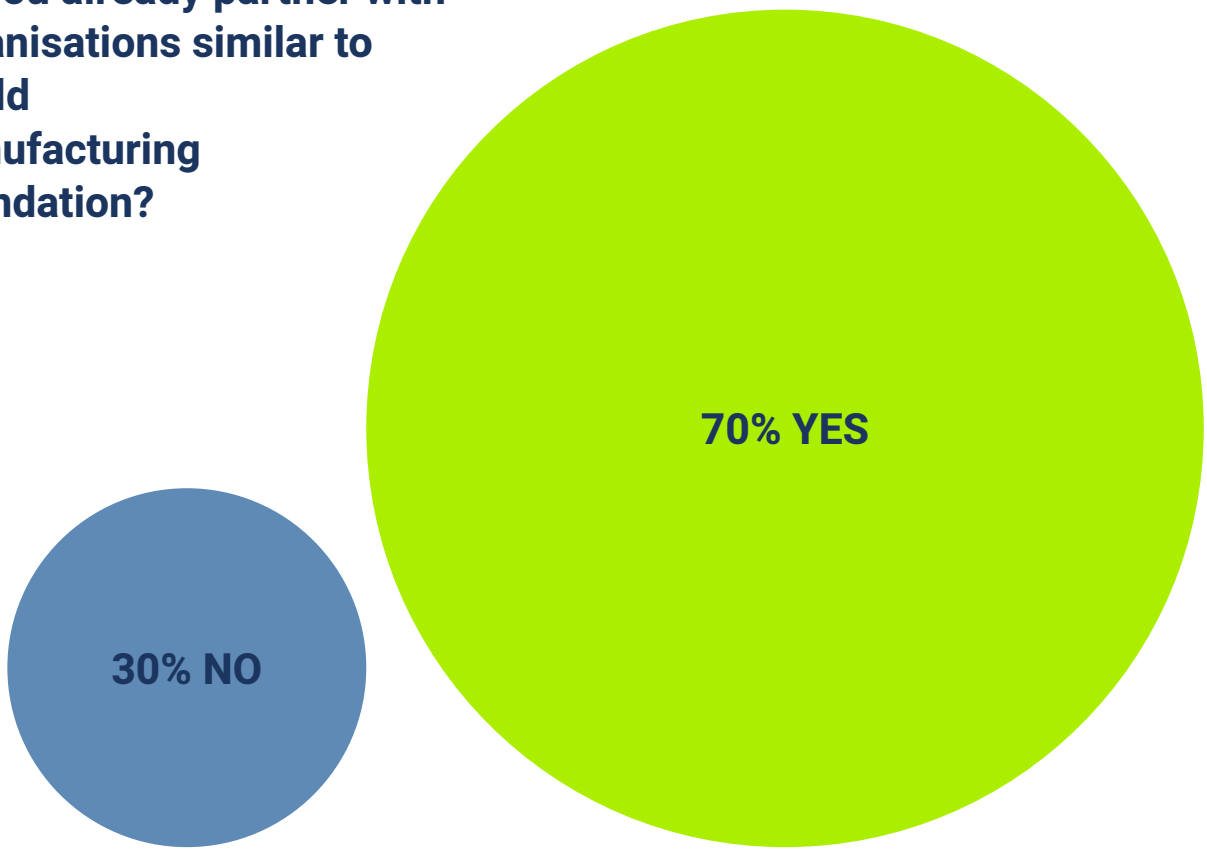
How relevant do you think the mission is in the current or future scenario/environment?



How much value do you think a partnership with the World Manufacturing Foundation could bring to your organisation?



Do you already partner with organisations similar to World Manufacturing Foundation?

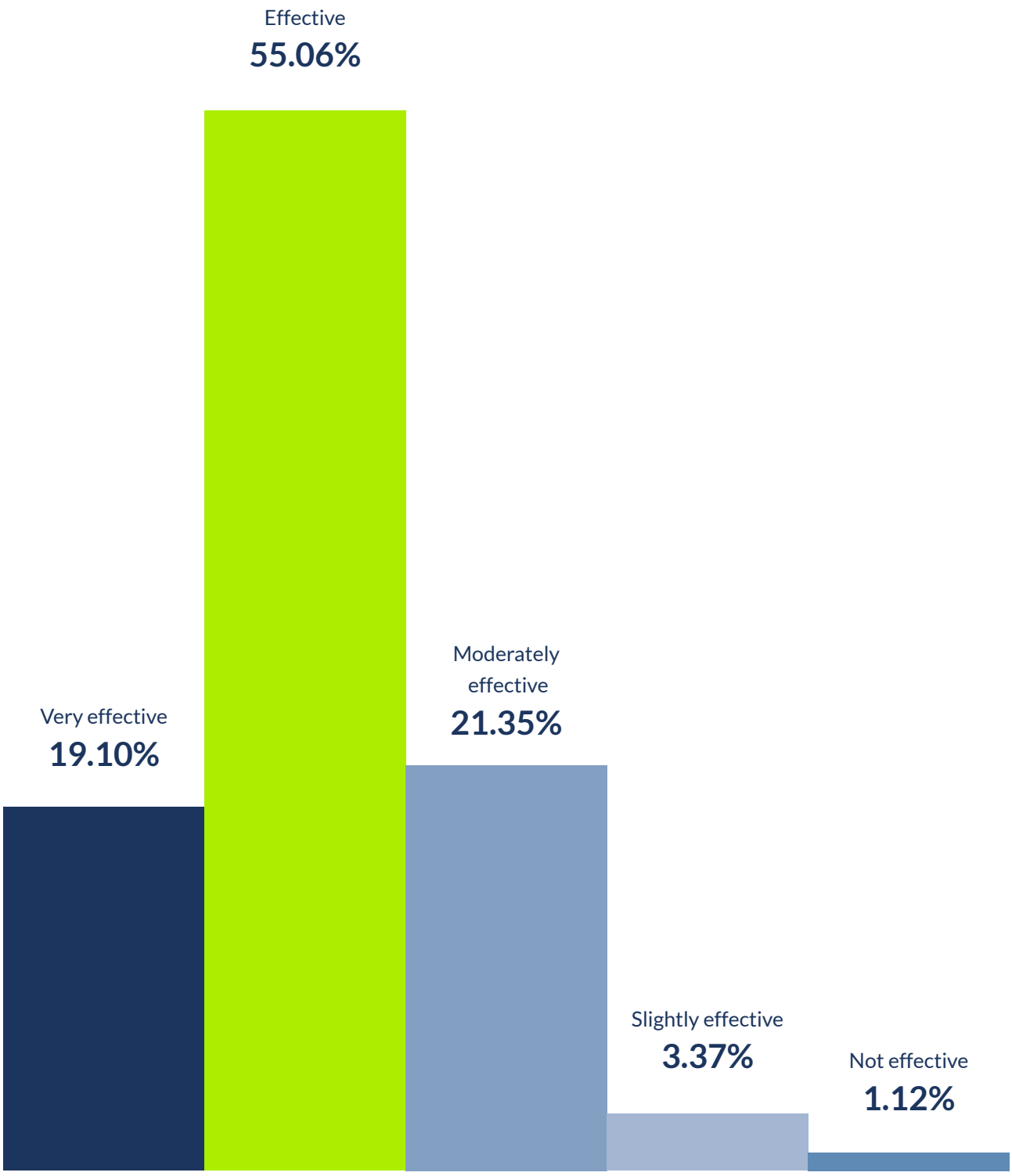


Do you take part in partnerships involving Education, Industry and Governments (Triple Helix Model)?

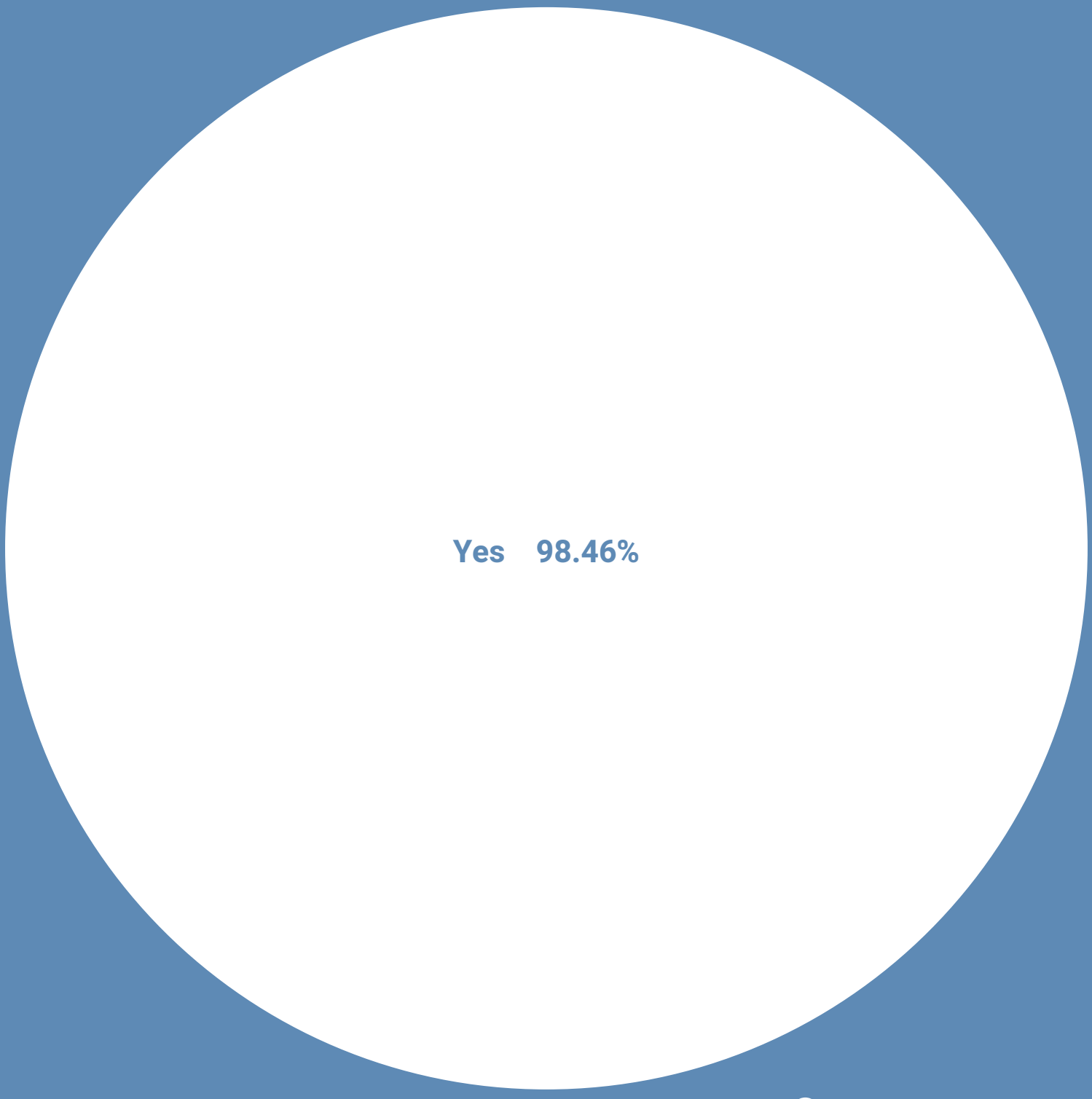
61.83% YES

38.17% NO

How effective has the World Manufacturing Foundation been so far in terms of achieving its mission?



In your opinion, do the activities of World Manufacturing Foundation contribute to spread industrial culture?



In your opinion, do the activities of World Manufacturing Foundation contribute in promoting dialogue and cooperation between different stakeholders?

Yes	100%
No	0%

In your opinion, do the activities to World Manufacturing Foundation help to promote a positive perception of manufacturing?

Yes	96.26%
No	3.74%

In your opinion, do the activities of World Manufacturing Foundation contribute to increase awareness on manufacturing issues?

Yes	98.04%
No	1.96%

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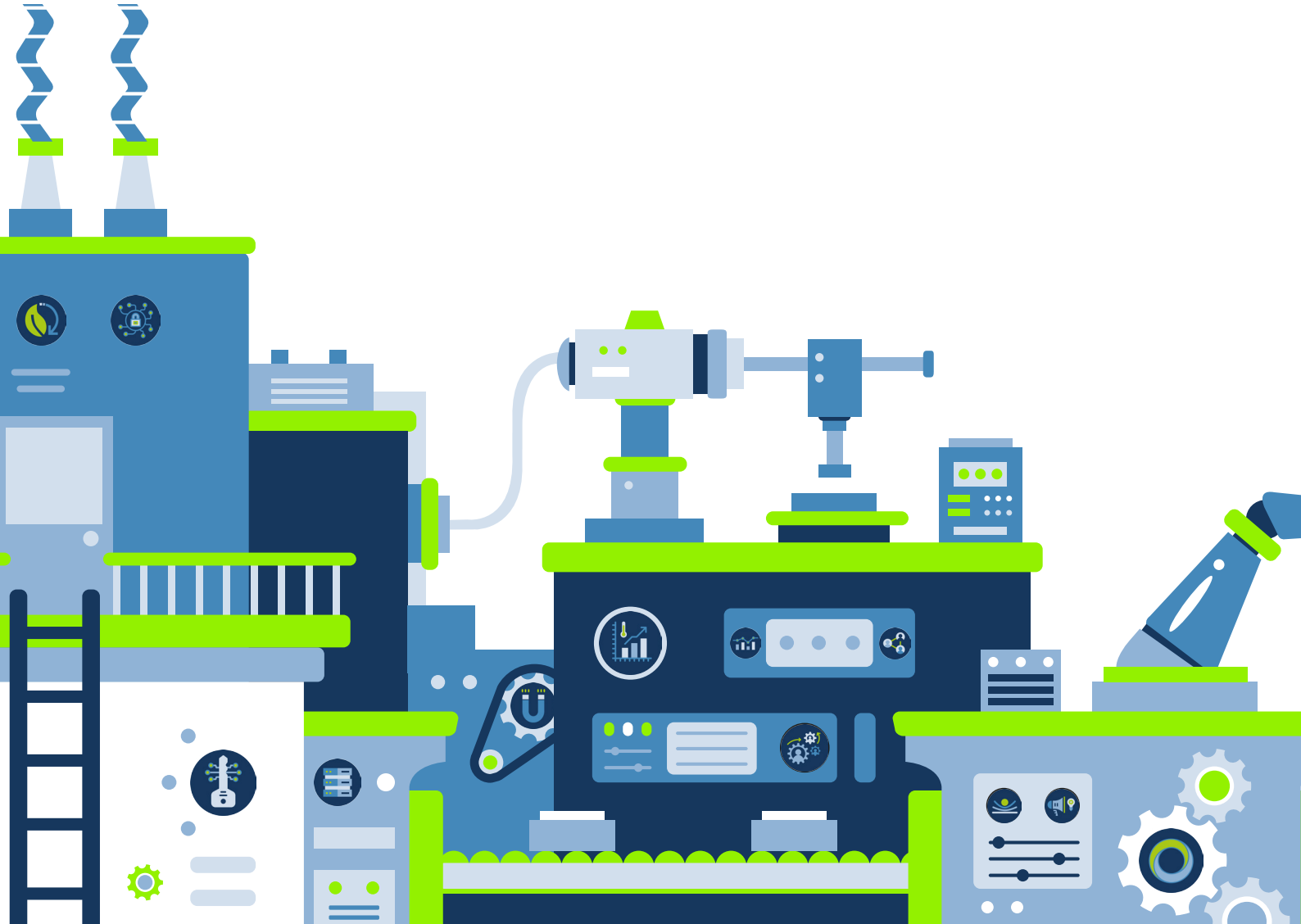

WORLD MANUFACTURING FOUNDATION

World Manufacturing Foundation
Strategic Plan
2020 - 2025