

# MISSION ITALIA



Investment, Innovation  
and Imagination

A Report for the Italian government

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## **Mission Italia**

### **Investment, Innovation and Imagination**

Mariana Mazzucato

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This report has been written by Mariana Mazzucato in her role as Economic Advisor to the Italian Prime Minister, Giuseppe Conte.

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Photograph by S Robinson,  
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~~Back to normal~~

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# 1. Opportunities for an Economic Renaissance in Italy

Imagining a different and better future for Italy is possible and necessary – now more than ever.

The pandemic crisis and consequent socio-economic shock have caused new fractures, adding pain to pre-existing stresses. The increase in inequalities, the impoverishment of the productive fabric of the country and job insecurity are just some of the issues that have hurt Italy for decades.

The recovery must not return us to normal, because normal was not working. Crises by their nature offer an opportunity to rethink the country, and build new foundations for a long-term transformation.

This particular moment can and must provide the impetus for renewal. The Italian economy has experienced illustrious periods, followed by decline and difficulties. Today the time has come for another Renaissance. A social and economic Renaissance that manages to intersect science, art and industry to improve the lives of citizens. This means having a vision for the future: a transformation of society with the citizen and the community at its centre.

Italy needs renewal, inspired by the technical and scientific skills that in the past brought international relevance and attention to our country, with a rediscovered role for a dynamic and efficient state. This should be complemented by a turn towards a Green Deal that includes a transformation across the economy, including the automotive sector, chemicals, pharmaceuticals, textiles, agri-food; and all embedded within the immense cultural heritage of the country. Culture must not be seen as one discrete sector among many, but rather as a transversal element that enriches, innovates and contributes to a social, cultural and economic renewal.

In this scenario, of risks and great rewards, the Italian economy is facing a historic opportunity. The Next Generation EU programme, recently approved by the European Council, offers the opportunity to realise the environmental transition and digital transformation our societies need. For this to happen, it is necessary to set up a strategy and have a coherent approach, even with the EU institutions themselves.

The following report proposes a lens for this transformative process: a mission-oriented approach<sup>1</sup>. Missions are tools for transformations aimed at solving crucial social, environmental and technological challenges, by means of a concrete process, characterised by achievable targets, and involving as many

sectors as possible; public institutions, social organisations (trade unions, trade associations, etc.) and above all citizens, thus putting the person and the community at the centre of the economy.

The crisis we are experiencing has a triple face: a grave economic situation, accompanied by an increasingly urgent climate catastrophe, and exacerbated by a health emergency<sup>2</sup>. Our recovery must therefore have the direction of a *Healthy Smart Green Deal*: more innovation, more well-being and more sustainability. This is essential to rethinking the direction of growth and also the way in which public and private interact, in order to ensure a revival of the Italian economy on a long-term recovery path.

The objectives of sustainability and inclusion must cut across this entire transformation and must emerge from a process of consultation and discussion with institutional actors, but above all with citizens and social movements. This “bottom-up” approach allows challenges to be defined in such a way that they speak to the lives of citizens. For example, having a health mission, which seeks not only to improve access to care but also transform the right to healthcare into the right to well-being, can engender a new relationship between citizens, health institutions and the state. On a different front, the digital divide, sharpened by the crisis, has highlighted how digitalisation is a pervasive transformation that can ensure equality and access to information, education and work. These challenges affect citizens' lives every day, and this is why they deserve prominence in the political, economic and institutional arena.

These are issues in which Italy plays two roles, as a follower on some fronts, for example the digital divide where it is behind the curve. But also as a leader in others, for example in the processes of ecological transition and in the health system itself, open and free to everyone and often feted in the news for its cutting-edge discoveries and innovations.

The involvement of citizens is a crucial element of the mission approach, which can start from a renewed public debate, through new forms of discussion between citizens themselves. For example, the establishment of local assemblies, which refer to the concept of the *public square*, beloved of Italian citizens, as a place of aggregation and confrontation between different generations, social classes and communities about the future of our country. The square as a concept handed down from the Hellenic culture of the *agorà* to the Roman culture of the *forum*, and firmly situated in modern times. A space for public use, of significant architectural quality and cultural richness, the space from which the project for the entire urban centre started, and from which a new and renewed movement of citizen participation in politics can begin.



“The square as a concept handed down from the Hellenic culture of the *agorà* to the Roman culture of the *forum*, and firmly situated in modern times”



Picture 1. Piazza della Signoria (Firenze). Giuseppe Zocchi, 1700s<sup>3</sup>

~~Fixing markets~~

Co-creating value

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## 2. Challenges for the country

Even before the outbreak of the pandemic, the Italian economy was suffering the trauma of a ten-year economic crisis. Persistent, structural problems constitute a serious obstacle to addressing the challenges of the future. Data are presented below to illustrate some of these problems which have, unfortunately, characterised Italy in recent decades.

Stagnation of productivity. Between 2010 and 2016, Italian productivity, understood as GDP per hour worked, increased by only 0.14% on average per year, the second-worst figure in Europe. The main European partners recorded increases of 0.84% in France and 1.04% in Germany for the same period<sup>4</sup>.

### **Aggravation of territorial imbalances<sup>5</sup>.**

- **Education and jobs.** The gap between North and South persists. Out of the total share of people between 30 and 34 with a university degree, 30% reside in the North, compared to 21.6% in the South (the European average is 40%). In terms of employment, three out of every four people in the North work compared to two out of four in the South.
- **Research and Development, and innovation.** R&D expenditure in Italy is 1.38% of GDP against an EU average of 2% and an OECD average of 2.4%. About 60% of R&D spending is concentrated in four regions: Lombardy, Lazio, Piedmont and Emilia-Romagna. There are 100 patent applications per million inhabitants in the North versus 8.6 per million inhabitants in the South.
- **Digitalisation.** Italy is among the laggards in Europe for digitalisation, languishing in 25th position of 28 countries in the Digital Economy and Society Index (DESI). Both commerce and citizens suffer. Only four out of ten businesses use a fast or super-fast connection. As for the 74.7% of households to whom the internet is available, the gap between the Centre-North and South in access to broadband remains.

The Italian economy is structurally feeble compared to its main European competitors (Table 1). Labour productivity is below par, and has remained stagnant for over two decades. The expenditure on research and the production of patents are both chronically lower than in Germany and France. Furthermore, the labour participation rate of the Italian population remains significantly weaker than in these other two European countries, especially with reference to the female employment rate. Finally, the percentage of graduates out of the total population between 25 and 64 years of age in Italy languishes far below the European average, leaving it among the last countries in the ranking.

	<b>Italy</b>	France	Germany
R&D over GDP (2017)	<b>1.37%</b>	2.21%	3.07%
Number of triadic patents (2015)	<b>797</b>	2,208	4,615
Labour productivity (2018)	<b>53.3</b>	68	66.4
Employment rate (2019)	<b>59.0%</b>	65.5%	75.0%
% of graduated people (2018)	<b>19.3%</b>	36.9%	29.1%

**Table 1:** Productive and innovative capacities of Italy, Germany and France. Source: OECD.

It is no surprise that even by 2018, Italy's GDP per capita in real terms had still not returned to the level of pre-2008 crisis. France and Germany had not only recovered but also improved their per capita income level (Table 2). Among the various factors behind this relative Italian decline, one is certainly the collapse of public investments, both in absolute terms and relative to GDP. This has happened to a much lesser extent in France, where they are at a level above 3%; while in Germany public investment has even increased relative to GDP as a response to the crisis.

Neglecting GDP growth has direct consequences for the sustainability of public debt. When discussing public debt, or rather the public debt ratio to GDP, too much attention is often paid to the increase in the stock of debt, without considering that with more and better investments, and a consequent increase in productivity, GDP would grow more than proportionally. In this way, the debt/GDP ratio would decrease, creating new wealth and a better distribution of resources.

	<b>Italy</b>		France		Germany	
	<b>2008</b>	<b>2018</b>	2008	2018	2008	2018
Public investment over GDP	<b>3.15%</b>	<b>2.14%</b>	3.95%	3.40%	2.11%	2.38%
GDP per capita	<b>28.230</b>	<b>26.740</b>	31.310	32.860	32.320	35.860

**Table 2:** A comparison between GDP per capita and public investment over GDP in Italy, France and Germany. Source: Eurostat.

These data highlight some structural issues in our country that in part go beyond the health emergency of recent months, and in part have been exacerbated by the latter (just think of the issue of the digital divide that has seen some school students enriched by online learning while others fall behind in their studies). The issues mentioned here have at their root elements that share some macro-challenges the country will have to tackle if it wants to look

to the future in a proactive, fair and sustainable way. Among these, the areas of environmental transition and digital transformation are fundamental, as also envisaged by the European Union programmes, notably Next Generation EU, recently approved by the European Council.

Finally, it is useful to remember that even on the environmental sustainability front, the findings are not reassuring. Consider the telling ratio of CO<sub>2</sub> emissions to GDP: in Italy from 1990 to 2017 they decreased by only 30.6%, against 41.6% in France, 48% in Germany and 49.3% in the European Union as a whole. In terms of overall CO<sub>2</sub> emissions, from 1990 to 2007 Italy recorded a gradual but constant increase (from 431 to 485 million tons per year), compared to negligible change in France (from 386 to 391 million tons per year) and a marked reduction in Germany (from 1,018 to 822 million tons per year)<sup>6</sup>.



Figure 1. The 17 Sustainable Development Goals (SDGs)<sup>7</sup>

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### 3. A mission-oriented strategy

Economic development has not only a rate, a quantitative dimension, linked to the growth rate of GDP. The direction of development – its quality – is equally, if not more, fundamental. The international community has widely recognised this, developing the United Nations' 17 Sustainable Development Goals (SDGs) to highlight the economic, social and environmental challenges on a global scale.

The 17 goals cover areas such as poverty and hunger reduction, climate change and gender equality, and aim to be achieved by 2030. The themes addressed by the SDGs are a perfect example of the genesis of missions, providing a variety of inspirational challenges.

The SDGs are more ambitious than any single issue on technological change. They refer to problems that have no immediate remedy, and that require a better understanding of how those problems interact with political, technological, and social change issues. Given the high degree of complexity, it is important to unpack the challenges in different steps with identifiable and reachable targets. The targets of the SDGs (169 of them!) require a series of innovations and actions by different actors<sup>8</sup>. The mission-oriented approach fits perfectly into the framework of the SDGs, in which the challenge can be considered resolved after the experimentation of various projects which, together and in a complementary way, achieve the mission. If, for example, we consider Goal 7: "Clean and Accessible Energy", this has three targets to be achieved by 2030: ensuring universal access to affordable, reliable and modern energy services; a considerable increase of the portion of renewable energy on the total energy mix; doubling the rate of improvement in energy efficiency.

Tackling and solving these challenges requires a fundamental change from traditional industrial policies. It is crucial to move from a logic centred on a list of sectors to be supported, towards a better and more complete identification of problems whose solutions require multiple sectors and actors to finance and develop processes of innovation and transformation.

Between 2017 and 2018, I helped the European Commission think about how to apply the mission-oriented approach to major challenges and redirect industrial and innovation policies. This interaction with the Commission led to two reports<sup>9 10</sup>: "*Mission-Oriented Research & Innovation in the European Union: A problem-solving approach to fuel innovation-led growth*", which was followed in 2019 by "*Governing Missions in the European Union*" covering financing, citizen engagement, and public sector capabilities (Figure 2).



Figure 2. Reports elaborated for the European Commission



### 3.1. Mission map

The idea behind missions is not to start by asking which sectors or technologies should be helped, but rather which problems need to be solved. The key is to think about problems in the most ambitious way possible, involving various economic actors in the solution (public, private and non-profit) and establishing new forms of collaboration at the level of individual projects. To this end, a mission must be able to catalyse investments and innovation among the various sectors, as happened for the Apollo 11 mission to the Moon, which concerned not only the aerospace industry, but also the materials, electronics, information technology, textiles and food sectors.

Much of the discussion around missions can be conceptualised in terms of major challenges, which in the case of the United Nations are represented by the 17 SDGs.

Transforming these challenges into concrete missions is the first step. Figure 3 illustrates the process of creating a mission map: from challenge via mission to sectoral investments with specific underlying projects.

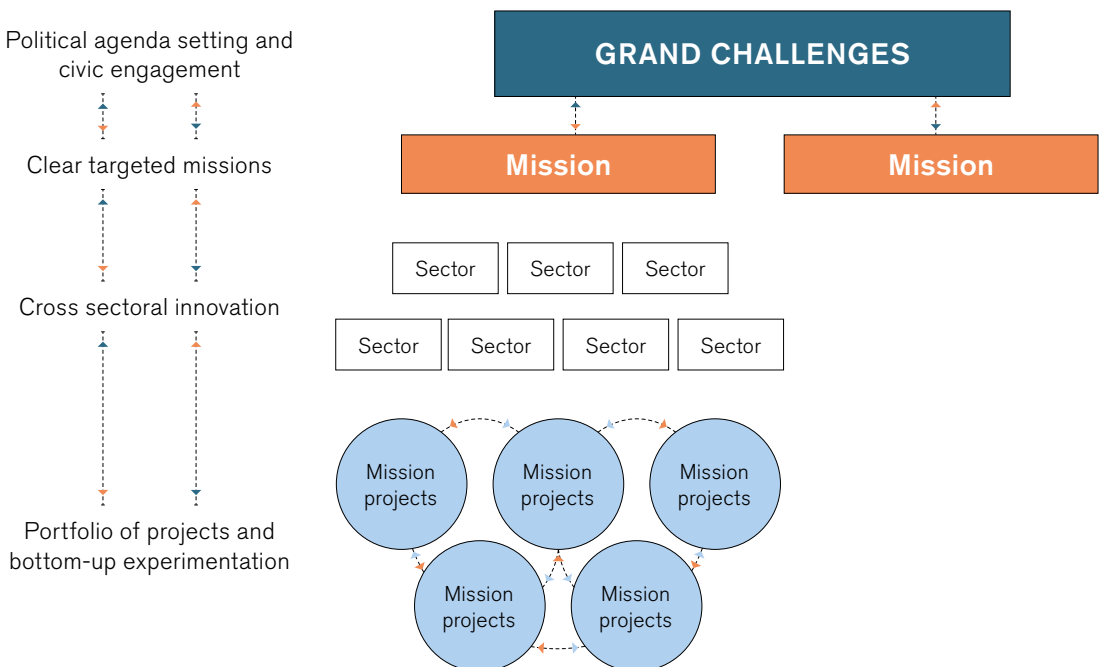


Figure 3. Mission Map: from challenges to projects via missions

Missions should be cross-cutting in terms of sectors and actors involved in the process. In this sense, a “vertical” mission on a theme can have a cross-cutting impact on different economic and social areas. The dynamics are both top-down, in terms of directionality of the challenge and the identification of the mission, and bottom-up, with the activation of projects that involve multiple actors and solve the everyday problems of citizens.

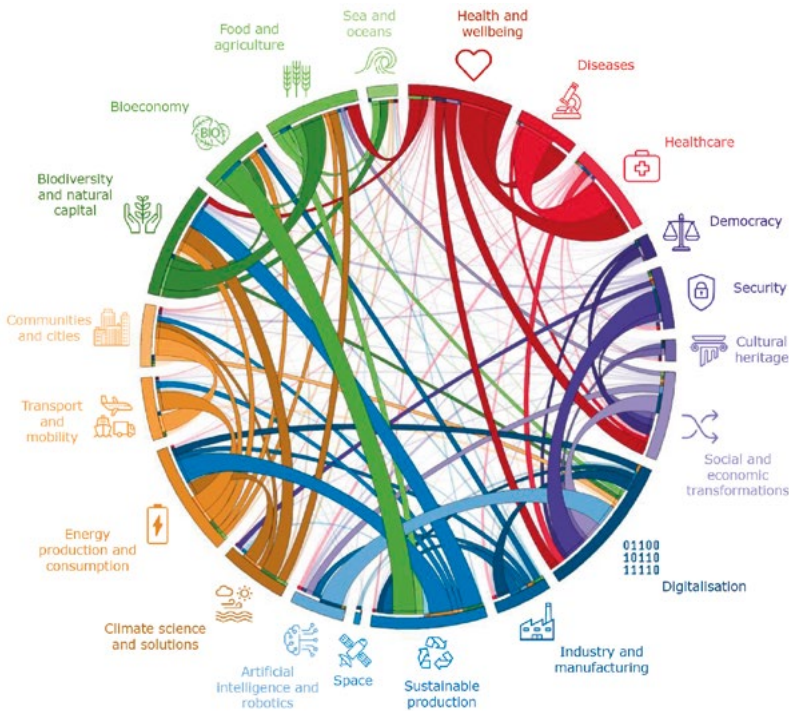


Figure 4. Interrelation of the five mission areas selected by the European Union<sup>11</sup>

In the wake of the work for the European Commission, missions have become part of the Horizon Europe science and research funding programme and five mission areas have been chosen as a result of enormous effort by all kinds of organisations involved at European level, from industry to academia, from civil society to policy makers. The five areas are: climate change; cancer; cleaning the oceans, seas and coasts; smart and ecological cities; and, lastly, healthiness of the soil and the agri-food chain. These areas interact and complement each other as shown in Figure 4.

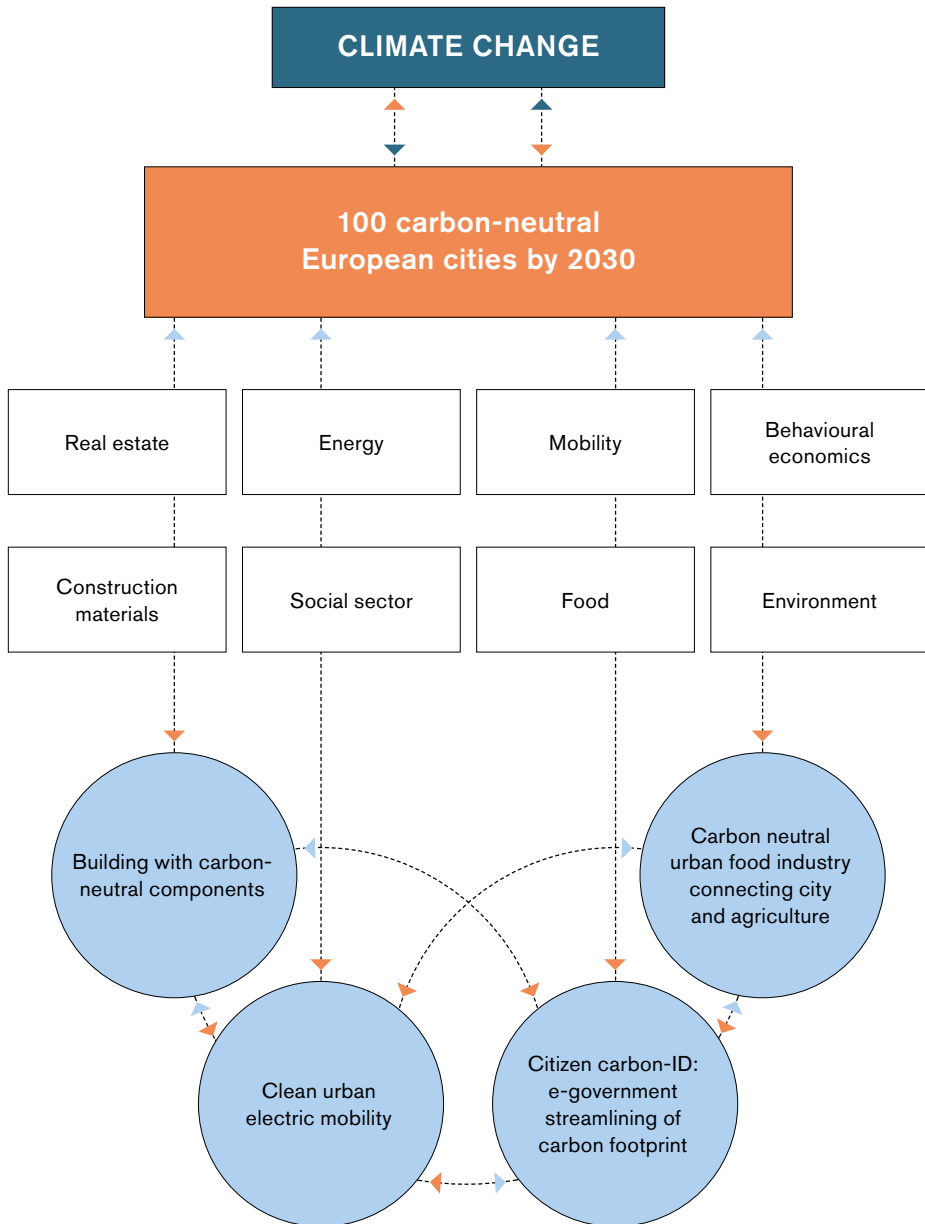


Figure 5. A mission map for climate change, SDG 13<sup>12</sup>

Each area must be understood in the broadest sense: the cancer mission is not just about reducing cancer rates but also the types of policies and investments that can improve the quality of life of cancer survivors; the oceans mission area doesn't look just at cleaning up our seas but also at restoring damaged ecosystems. Moreover, the mission areas of course intersect: attempting to render the entire value chain of food production more sustainable has to interact with climate and clean growth.

Goals must bring as much cross-sectoral innovation as possible, and this is why it is important to set missions in a broad and ambitious way. Let's take SDG 13 on Climate Action as an example (Figure 5). Using the mission-mapping framework, we can transform this grand challenge into a mission for building 100 carbon-neutral cities across Europe. A mission of this sort would involve innovations in multiple areas, from citizens' mobility patterns, to e-governance, transport infrastructure, nutrition and construction standards. The mission projects would potentially include fully electrifying the public transport system; creating carbon absorbing materials for the construction industry; producing carbon ID cards for all citizens so each person can monitor his or her carbon footprint; and finding new ways for food systems in cities to link to locally produced organic agriculture in the countryside.

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## 3.2. How to choose missions

The success of missions requires the fulfilment of a series of conditions, which must be embedded in the process before and during their execution. The fundamental criteria for carrying out and governing the missions were elaborated in the two official documents prepared for the European Commission mentioned above.

The identified criteria are the following:

- **Bold, inspirational and with social relevance.** The missions must be able to inspire the actors involved and have a broad relevance for society. They must be able to connect with the challenges of sustainable development to have an impact on a significant part of the population.

- **Citizen involvement.** For their definition, implementation and evaluation, missions require citizen participation in public debate. They must also be shared by a healthy number of institutional and social actors, so that they can also be pursued through different political cycles.
- **Targeted, measurable and time-bound.** The missions must have a precise direction. They must be focused, measurable (with tools that capture the overall qualitative impact) and bound by a time limit.
- **Public sector capacity**<sup>13</sup>. Missions require the development of skills and entrepreneurial spirit by the state. Public actors must conceive of themselves as elements of a system that creates and shapes markets and technologies, as has already happened in the past, in Italy and elsewhere. Among the capacities that the state must assume there are: the search for coordination between different structures that operate by departmental silos; greater flexibility and autonomy of some departments, agencies or other public organisations; a positive approach to risk, linked to learning processes; the possibility of setting a strategic use of public procurement on the entire industrial and social apparatus.
- **Ambitious but realistic.** The missions must be ambitious in order to motivate the actors involved, but sufficiently realistic to be achieved. The financing of projects, by public and private parties, must be adequate and follow the needs for the realisation of the mission, without constraining its definition with strictly fixed limits or a short-term return perspective.
- **Cross-cutting and bottom-up.** The potential of the missions is maximised by the activation of multiple initiatives between different sectors, actors and disciplines. Several projects contribute to the realisation of missions, as well as to their possible redefinition, through constraints and opportunities that may bubble up during their implementation.

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### 3.3. From market-fixing to market-shaping

Missions do not ask what is the market failure to be fixed, but rather what type of market is needed to achieve certain objectives. In this sense, markets need to be actively co-created and shaped.

In order to understand the mission framework and adapt it to a single country's industrial strategy, it is necessary to leave behind the "Market Failures" framework. This is based on a static idea of how the economy works, centred on allocative efficiency, which ignores the dynamism of today's capitalist systems driven by innovation and continuous change. In this static framework, the benefits of dynamic and mission-oriented public policies are underestimated.

Instead, it must be recognised that markets, institutions and technologies are the result of a collective creation process by public and private actors. The success of an industrial strategy must be compared with the ability to generate virtuous and pervasive dynamics, which produce innovation and systemic change. This process of collective creation requires coherence and collaboration by the different ministries and institutions at various levels.

These processes are complex and uncertain. They require ambitious public institutions that are willing to accept what could appear to be a failure and learn from it. Procurement procedures and the management of public assets must fall within the tools that the state can and should use to reorganise and reactivate the business system.

The mission approach is based on the principle that the role of the state must be to encourage the creation of what would otherwise not be achieved<sup>14</sup>, establishing mutual collaboration between public and private organisations in achieving shared goals. Not only the result but the process behind the mission is what ultimately solves our greatest challenges, creating the environment for inclusive, sustainable and innovation-driven growth.

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### 3.4. Using missions to build a stakeholder capitalism

Capitalism and the 'ways we do business' are fundamentally challenged through the lens of mission-oriented innovation<sup>15</sup>. A stakeholder capitalism, built on collective value creation, and drawing on the value development of the public realm, is at the heart of the issue of a 'just transition' – the industrial and social shifts needed towards a climate-resilient economic model.<sup>16</sup>

As the world is transformed physically by both climate change and the accompanying need to move towards a zero-carbon economy, industries heavily reliant on oil, gas and coal will be forced to radically transform. Those workers whose finances, families and identities are bound up with extractive and manufacturing industries could feel abandoned and the regions where such activity is located could be "left behind". This could trigger local economic pain, protest and regional decline. To counter these risks, the cross-sectoral, bottom-up, and systemic nature of missions aligns them with stakeholder-led approaches. It engages local stakeholders with both governments and businesses engaged in the mission projects.

Mission-led industrial policy should be designed at long-term systems level – not only including those groups that look to lose out in the shift to a zero-carbon world, but also those who have traditionally been overlooked in the current economy. This is the meaning of the element of inclusion in Green Deals around the world. The "deal" part is as important as the "green" part – the social contract that is agreed with workers and citizens must be underpinned by strict conditions and organisational agreements between industrial actors and governments. Missions can incorporate the participatory element of workers in the process of implementation, with new forms of collective involvement at all levels – policy and organisational – that elevate the worker by means of a high-quality, dignified job.

Missions should incorporate job protection and workers' rights, eliminating precariousness and encouraging new agreements against self-defeating wage devaluation policies. Apart from their crucial role in defining a more constructive and fair system of industrial relations, workers and trade unions need to be recognised in the democratic decision-making process, both within their workplaces and at the policy level. The participation of workers and citizens could take place in the form of local councils, with a substantial influence on decisions regarding the investments of companies, labour conditions and organisations, training, environmental and technological impact on lifestyles, etc.

The COVID-19 crisis has led to immense displacement in labour markets, which in turn results in new demands for green job creation and development. Just transition missions cannot be top-down. Multiple groups, from trade unions to faith groups and activists, must be brought to the negotiating table for a Green New Deal, with nobody left behind, as promised by the Sustainable Development Goals, and Europe's own Green Deal. <sup>17 18 19</sup>

The example of the Italian government can be illustrative for further and more specific applications. The convening of a National Convention on the economy in June was the occasion to promote a dialogue with all the economic and social stakeholders of the Country. In the span of one week, the Government listened to the analyses and suggestions of various organisations and associations – trade unions, business and trade associations, major industrial players, cultural associations, architects, artists, groups of citizens and professionals. It is important that their contributions are included in the definition of the Recovery and Resilience Plans – under the programme Next Generation EU – that the Government is submitting to the European Commission.



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### 3.5. A mission-oriented approach to shape the Next Generation EU

Italy faces challenges that require resources, but also a strategy for their investment. This is crucial to make the most of the unique opportunity coming from the European Union. With the agreement reached by the European Council this July, member states of the European Union approved the Next Generation EU (NGEU) programme, a pandemic crisis response plan worth 750 billion euros. Italy will receive 81 billion euros in grants and 127 billion euros in loans, which will be committed from 2021 with repayment starting from 2026.

The drafting of recovery and resilience plans therefore becomes crucial for the approval of resources and for the transformative impact of the investments that will be made. The evaluation of the plans will be linked to the commitment of various member states to promote environmental transition and digital transformation. For example, at least 30% of the funds of NGEU and the multiannual financial framework 2021 – 2027 are expected to be structured and used for environmental investments and programmes. In this sense, the NGEU becomes a crucial financial tool for realising the European Green Deal.

The mission approach applied to these two programmes provides a strategic tool to present the plans to the European Commission and to apply a convincing strategy nationally. Firstly, because the missions have already been recognised by the EU institutions. Secondly because they maximise the multiplier and catalytic effects of private investments, acting across multiple sectors<sup>20</sup>. The challenges of the ecological transition and digital transformation can therefore be translated into specific missions and adapted to the Italian context.

**“Markets, institutions  
and technologies are  
the result of a collective  
creation process”**

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## 4. Three missions for Italy: health, green, digital

The missions that can be implemented in Italy have different characteristics and look at different sectors, instruments and needs. They have to be directed towards reaching the UN SDGs, within national and local settings. For illustrative purposes, this section illustrates three missions that look at corresponding challenges around health, a green transition at the city level and digitalisation, which is transversal in nature and encompasses all other missions. The three missions presented in this section are still in the initial phase of discussion. As explained above, identifying concrete missions – as well as their related sectors and subordinated projects – is part of a democratic process of bottom-up involvement and collaboration among institutions, social movements and citizens. The missions presented here are indicative. The mission approach is radically different from traditional industrial policy, where large and unaccountable organisations decide if, how and when certain decisions are adopted.

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### 4.1. A new model of health

The difficult months of health emergency at the height of the COVID-19 crisis have taught us lessons for the future. These have also been lessons of resilience and success, exemplified by the experience of Domenico Arcuri, the Special Commissioner for the COVID-19 crisis<sup>21</sup>. The health emergency has shed light on two aspects. Italy was unprepared on many different fronts, from hospital beds to face masks. At the same time, strong productive and coordinating capabilities have emerged among the most strategic actors in the industrial and innovation system. For instance, the country has moved from being entirely dependent on imported personal protective equipment (PPE) to having 139 domestic companies engaged in producing them at a competitive price. The symbiotic collaboration between the state and certain manufacturing leaders in the machine tools sector has enabled the production of state-of-the-art machines for self-sufficient production of personal protective equipment.

This has made it possible for the Special Commissioner to cap the retail price of a mask at 50 cents, in order to avoid speculative actions on such a first-necessity good without compromising the profit capacity of firms, whose costs of production range between 12 and 20 cents. It is also worth mentioning the work of SIARE, Italy's only manufacturer of ventilators, which increased its production

output from 12 per week to more than 70 per day. Such endeavours merit recognition and reward in the near future, given the central importance of these goods.

Italy had to confront the health emergency without adequate resources – without enough PPE, hospital beds, chemicals for tests and non-hospital medical facilities. Despite the positive management of the crisis, this requires reflection on national infrastructure. For instance, where are the alternative facilities for patients with less acute symptoms? Or technological solutions to allow infected persons to stay at home while receiving adequate medical assistance?

This health mission is a strategic attempt to reimagine the current concept of *healthcare* – focused on the hospital and medical treatment – towards the broader concept of citizen *well-being*. One hypothetical mission could be the institution of a self-sufficient national system of public healthcare. This would be autonomous relative to the disposal of PPE and necessary drugs, by innovating the national infrastructure in order to guarantee a universal access for all citizens to healthcare in all regions.

The map presented below differs from the general conceptual mission map in so far as it includes more general projects (the bottom rows), which will have to be defined in a more specific way. The telemedicine example reported below could be implemented as a project in the general category “Renovation and reorganisation of public health infrastructures”.

A health mission cannot function without a renovated and more resilient industrial structure. Italy has still a particularly weak supply structure in health-related sectors, in both high and low-tech productions, long outsourced abroad. What has been done during the emergency phase of the pandemic in certain strategic supply chains should become a best practice for the future. The Italian production system is populated by world-leading companies – IMA and Fameccanica have been the two most relevant ones over the last few months. They need to be involved with a strategic aim<sup>22</sup>. The state has acquired a new centrality in driving the economic process during the emergency, but it will remain crucial in the near future.

Another crucial point is represented by public procurement and its strategic orientation. The example of the MoU (Memorandum of Understanding) and the long-term contracts with some strategic Italian companies during the emergency phase guaranteeing stable demand for a fixed period of time, reducing or eliminating the risk for companies as a consequence. A similar approach can be extended to the pharmaceutical sector, where Italy does not have sufficient research capacity, especially if we exclude private foreign-owned

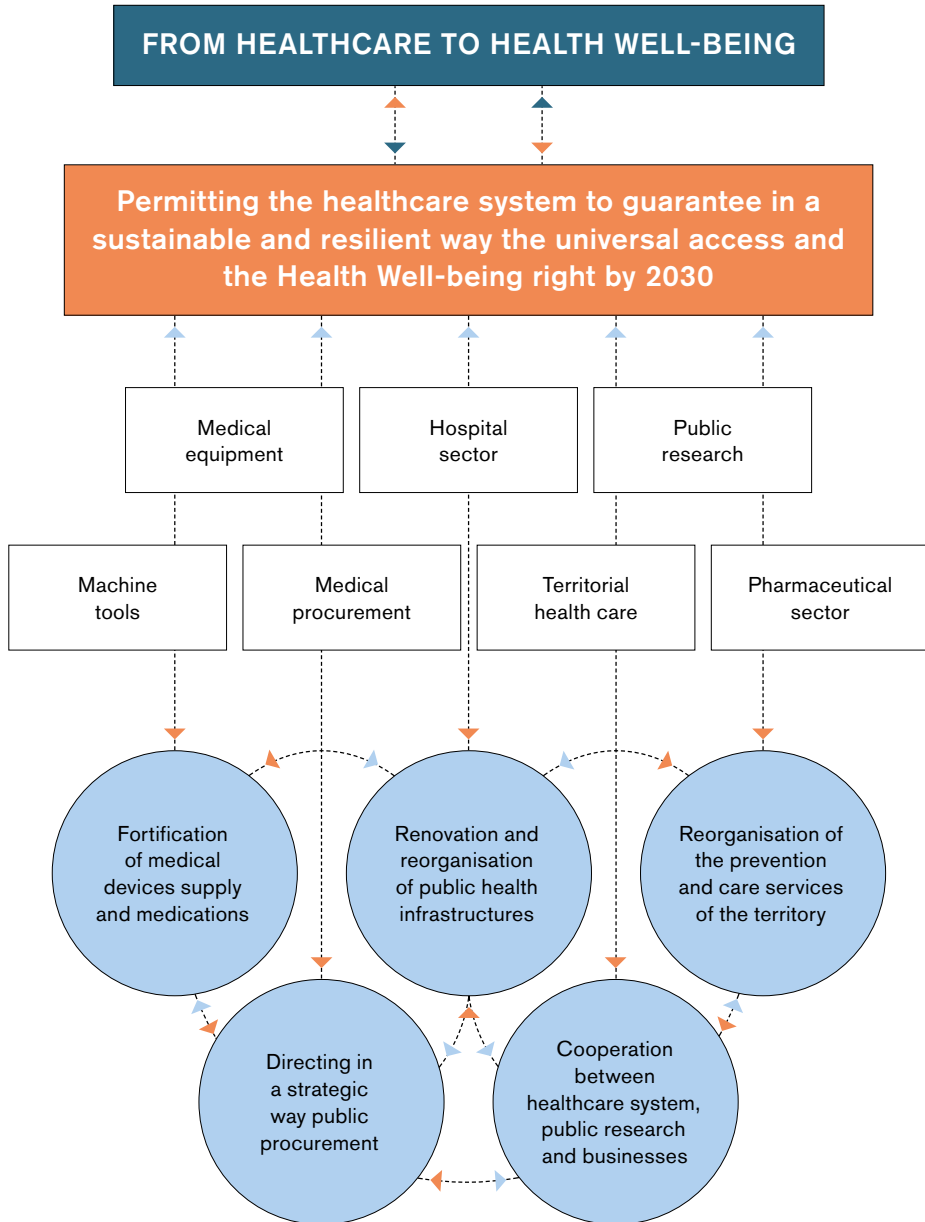


Figure 6. Example of a Health Mission

companies. It is therefore necessary to strategically rethink public procurement, superceding the current national procurement code, which prevents a strategic orientation of public demand.

Finally, Italy should be investing more in healthcare infrastructure through digital technologies in order to accelerate the creation of a more modern and consolidated healthcare system. Digital technologies are essential instruments in building new but closer relationships between patients and healthcare systems. One example is in telemedicine, which can reinvigorate local health centres and the role of general practitioners. The digitalisation of healthcare systems facilitates a paradigm shift from healthcare to health well-being as it allows a global health support to each individual, with accessibility to her or his clinical history at any point in time in any medical building.



Picture 2. The companies FCA and SIARE joined forces to produce medical devices, following an agreement reached during the critical phase of the health emergency.

## TELEMEDICINE FOR A MORE INCLUSIVE DECENTRALISATION

A large number of projects have the potential to contribute to the realisation of the health mission. Some of them have been preliminarily discussed in the work been carried out with Commissioner Arcuri and his team.

Among these, a first pilot project concerns the reorganisation of the national health system, taking into account its complexity. Without the need to “reinvent the wheel”, but rather by helping to redefine and direct existing actors and institutions, this project is based on two key points: the redefinition of general practitioners for a new relationship with the patient-citizen, and the establishment of new local health units that can treat patients via new telemedicine devices.

The main idea, whose need was widely felt during the period of health emergency, is the relaunch and rediscovery of local medical centres, through the use of digital technologies that can facilitate the creation of a digital medical register. This would facilitate a more rapid and constant interaction between doctors and patients and faster treatment, especially for less serious pathologies. This project would also have a series of positive externalities and cross-supports with the digital mission (see below) as well as a double push towards the creation of digital services (e.g. building on the experience of the Immune App, which has been adopted for tracking COVID-19 cases) and the development of manufacturing capacity for medical devices.

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## 4.2. Green transition at the city level

The Green Deal offers the opportunity to confront the climate challenge through a transformational change in production and consumption. This would transform multiple sectors of the economy and related value chains. Furthermore, the Green Deal programmes take on different connotations that reflect the various territorial scales: international, national and local. With respect to strict environmental issues, several aspects refer to cities in particular, such as air pollution, with its effects on health and productivity; waste collection; the lack of quality food and water.

Cities also offer various advantages in terms of applicability and planning. If we consider the example of urban mobility, this could be applied to the reformulation of urban transport (for example, an entire fleet of electric buses), the introduction of recharging columns for electric cars, the design of cycling paths and routes that encourage citizens to limit their use of fossil fuel vehicles. All these elements make cities an ideal place to test and implement mission-oriented innovation policies. The city is a delimited space that can also facilitate the planning of the mission itself, in terms of funds and governance. It is also the place where results can be obtained, measured and made accessible to citizens with the help of digital technologies. Especially at the city level, digital technologies and green policies are fundamentally entwined.<sup>23</sup>

As the example in Figure 8 shows, a green mission at the city level is one that seeks the elimination of carbon emission by a certain date in every sector – constructions, mobility, food consumption, etc. – through different but interrelated projects.





Picture 3. Off-shore wind farm installed by Saipem in Scotland.

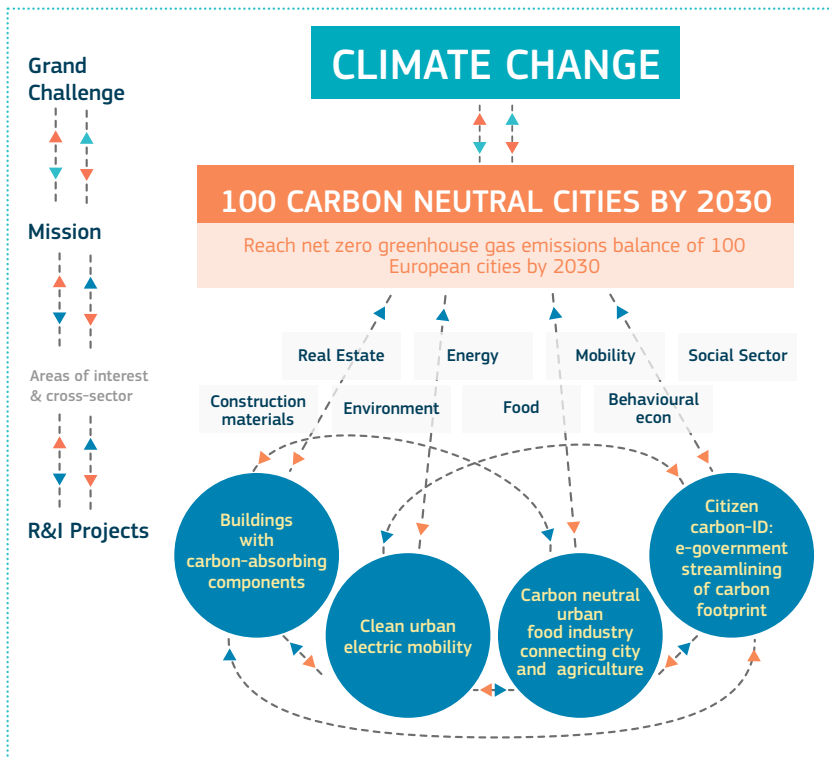


Figure 7. Example of a green mission at the city level. Source: Mazzucato, M. (2018) "Mission-Oriented Research & Innovation in the European Union: A problem-solving approach to fuel innovation-led growth". Report for the European Commission

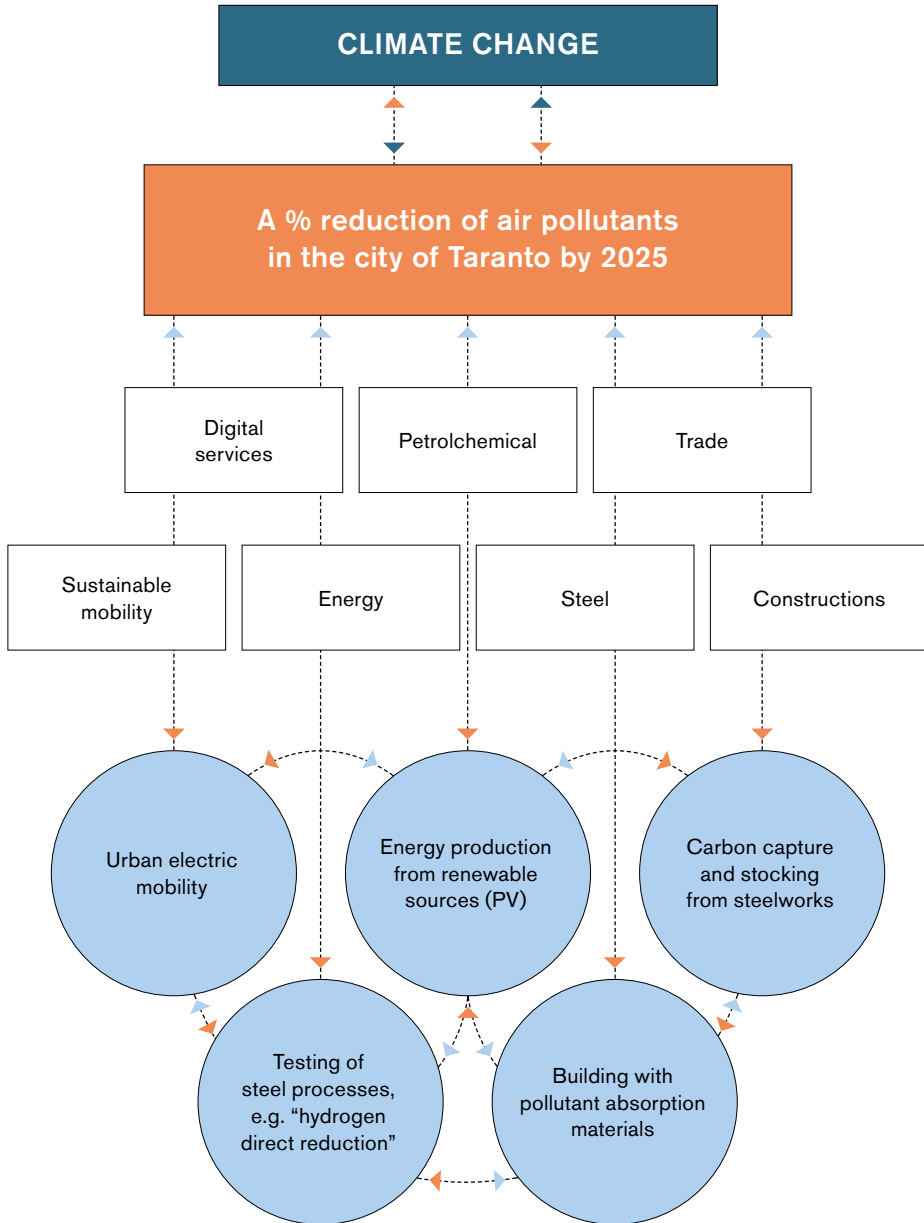


Figure 8. Example of a specific green mission for the city of Taranto

## FINANCING THE GREEN DEAL

As part of the European Green Deal, Italy can play a leading role towards the emission reduction target set for 2050. In particular, with the strengthening of the InvestEU fund and with the utilisation of resources from the Just Transition Mechanism envisaged by Next Generation EU programme, Italy has the opportunity to address some critical issues related to the ecological transition in certain economically depressed areas.

The Green Deal must mobilise a multiplier effect between European and national funds, which should be aligned and not dispersed on several levels. The budget law of 2019 included 3,820 million euros to be dedicated to the green transition, to be invested between 2020 and 2023.

In addition to direct transfers, it is important to coordinate the financial instruments of Cassa di Risparmio di Roma e Prestiti (Italy's state investment bank), including its venture capital fund - Fondo Nazionale Innovazione. The risks associated with specific projects can be high, which is why it is important to adopt a portfolio approach to investment, with the willingness to accept failure and learning from it. Furthermore, public investment funds can catalyse otherwise risk-averse private investments.

Providing a green direction to finance is an essential process for green missions. These must be identifiable, feasible and concrete in order to be realised and their impact assessed. At the same time, missions have to be wide enough to have an impact on the system as a whole.

The Italian context offers some critical applications of this approach. Some cities in the South, including Taranto, suffer particularly from a dilemma between environmental sustainability and the maintenance of employment and income levels. Taranto is the most polluted city in Italy, plagued by emissions from thermoelectric plants and its large steelworks. A green mission for Taranto means dealing with the conversion of polluting industrial facilities, but also rethinking the city dimension in terms of urban regeneration, reforming internal mobility and infrastructural logistics.

The *Cantiere Taranto*, as defined by the Government's Plan for the South 2030 (*Piano Sud 2030*), requires a plurality of connected inter-sectoral interventions,

which lend themselves to the model of a green mission at the city scale. Finally, Taranto could become a model of how to use the EU's Just Transition Fund, not only to combine an ecologically sustainable transition with the improvement of socio-economic conditions, but also as a possible catalyst for new industrial initiatives related to the opportunities surrounding the transformation of the city. In this sense, the involvement of trade unions, as organisations close to working citizens and their needs, is of crucial importance for the democratic process of defining missions.

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### 4.3. Digital transformation

Digitalisation is pervasive in all areas of policy making. As mentioned before, a health mission requires the systemic adoption of digital technologies. It is also essential for missions at the city level, that involves citizens in every moment of the process, from the definition to its implementation. Finally, it is a horizontal theme that affects manufacturing processes in the 4.0 revolution.

At the same time, the digital transformation of our societies has also some specific features of its own. In recent months, the closure of schools and the attempts to engage in distance learning have highlighted how access to the Internet (both in terms of connection and devices) is not uniform and tends to exacerbate existing inequality. The digital backwardness of Italy also affects the relationship between public administrations on one side, citizens and businesses on the other side. Finally, the scarce digitalisation of enterprise hobbles the country's economic competitiveness. Italian companies' adoption of new technologies which require access to the Internet and attendant devices (hardware and software) remains limited. Sensors, artificial intelligence, cloud computing and robotics need a reliable connection as a prerequisite for their implementation. Some efforts give cause for hope. For example, the ambitious project aimed at developing an ultra-broadband network nationwide to create a public telecommunications infrastructure moves in the right direction and it is consistent with the objectives of the European Digital Agenda.

But the digital challenge is not an end in itself: it must be oriented towards improving and facilitating the lives of citizens, following the example of the work carried out in Barcelona<sup>24</sup>. Once again, the focus at the municipal level highlights how it is essential to consider governance issues, especially with a view to guaranteeing the privacy of information generated by citizens on digital platforms. Only in this way, with a clear focus on both the public value of the

data and the privacy rights of individual citizens as data contributors, will the mission of digital transformation be accomplished. Digital innovation must be a means, the ultimate goal of which is to improve the mobility of people and the relationship they have with the state, so that individuals regain confidence in the ability of public institutions to guarantee services and opportunities.

The definition of a precise and measurable mission, such as climbing a certain number of positions in the DESI ranking (Digital Economy and Society Index) would inform choice, design and implementation of projects to achieve that goal. The DESI index is a measure of the progress of EU member states in digitalising their economy and society. DESI analyses five areas: connectivity, human capital and digital skills, use of the internet by citizens, integration of digital technology and digital public services.

#### IMPRESA 4.0PLUS

Impresa 4.0 Plus (Enterprise 4.0 Plus) refers to a strategy announced by Prime Minister Giuseppe Conte during the National Convention in June. It revolves around a set of targeted incentives for companies that invest in particular sectors, such as robotics, artificial intelligence and other latest generation technologies. Italy must continue to work on new (or existing) national champions who can play a strategic role in the supply of new technologies, nationally and internationally.

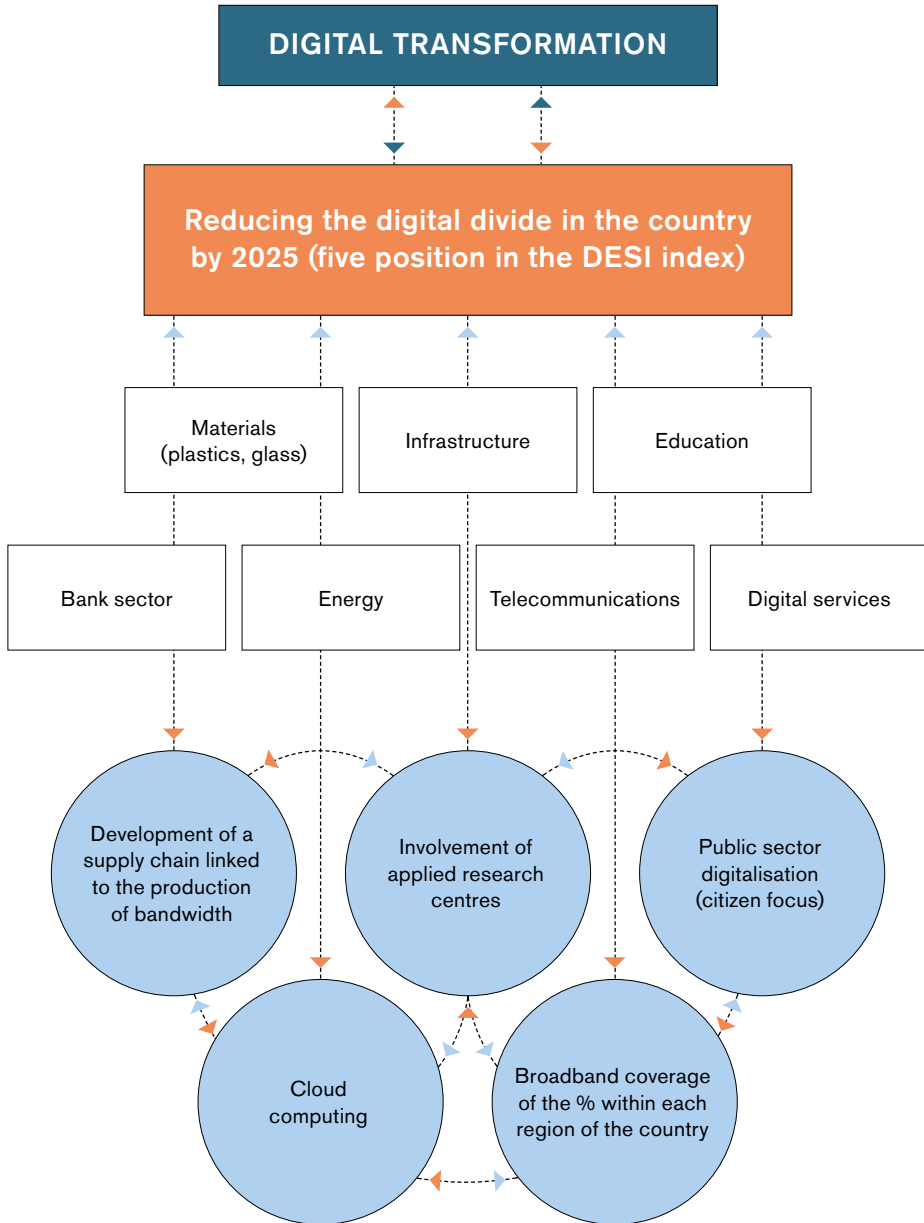


Figure 9. Example of a Digital Mission

A digital mission cannot be separated from a mobilisation of both scientific (STEM and digital) and organisational skills. In this sense, specific training at various levels (school, business, public administration) emerges as an essential element for the creation of a new social and productive fabric. In recent years, Italy has been able to improve its ranking in the DESI index with regard to the digitalisation of public administration (where it has reached 18th position out of 28 EU countries). But it is still lagging behind in areas like human capital and the use of internet services (where Italy ranks respectively in position 26th and 25th out of 28 EU countries). Climbing the DESI ranking will require investing in digital infrastructures but also in educational skills and in a different organisation of production.



Picture 4. Eni's new green data centre (HPC5).

## A MISSION FOR CULTURE

In Italy, culture and its economic value are mostly associated with the tourist exploitation of its artistic heritage. The present crisis, which has severely hit the tourism industry and exposed its devastating impact on the environment, must push us towards a more pro-active idea of culture. Culture has to become part of the knowledge industry, a rapidly expanding planetary activity, in which Italy has a lot to give and has already demonstrated its know-how.

A culture mission that would involve many sectors could be focused on doubling the added value generated by the Italian knowledge industry in 15 years.

Projects could be built around undisputed excellences, known all over the world, such as La Scala theatre. The "Scuole della Scala" project could start from a school of music, singing and musical theatre where the greatest talents in the world will be called to teach. This could be followed by a costume school and a stage design school, both located in a place like Milan that can involve its fashion, industrial design and furniture sectors. Then there could be a communications school, where new ways of telling and spreading the musical show and new technologies for digitalisation are taught. This mission could create with Cremona (School for Luthiers) and Parma/Busseto a triangle of musical and theatrical knowledge unique in the world. The tens of thousands of students, talents, employees, agents, producers could galvanise the city.

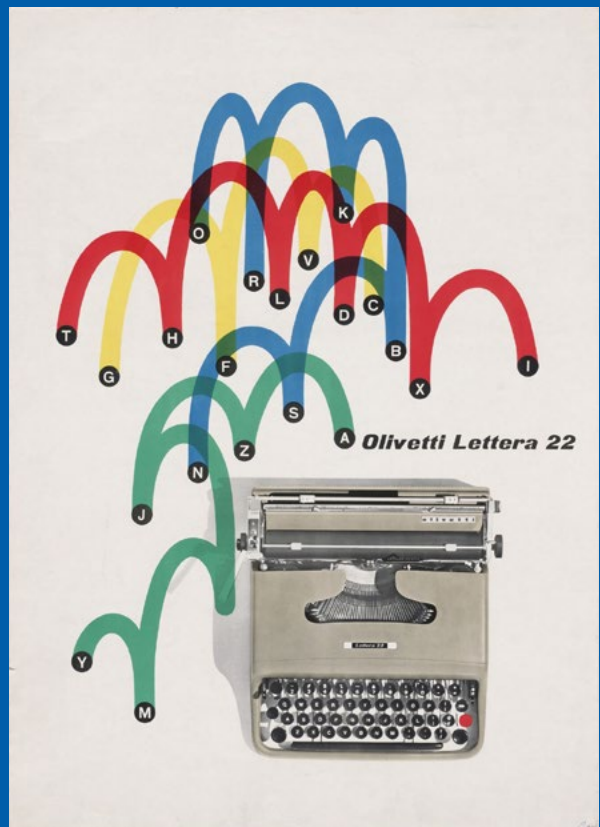
The project is expandable and replicable. A *bel canto* school cannot stop at the twentieth century, it will have to deal with jazz, musicals, rap. It can be replicated: the same project but around the knowledge and restoration of pictorial art for Florence, for archeology in Naples, for Cinema and Audiovisual in Venice.





The factory cannot simply look at the profit rate. It must distribute wealth, culture, services and democracy.

Adriano Olivetti



Picture 5. Advertising panel for the Olivetti Lettera 22 typewriter <sup>25</sup>

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## 5. Towards a new innovation-oriented public-private ecosystem

Missions require a system of organisations in which the private and public sectors work together to foster economic development. Economic growth is driven by those organisations that are able to create positive externalities between science and industry, which provide the best training systems and which preserve the mental and physical health of citizens. The section below deals with a series of critical cross-cutting issues for transforming the interactions between public and private towards a more mutualistic and innovation-oriented ecosystem.

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### 5.1. Industrial transformation and systems of innovation

The deindustrialisation process that has afflicted the Italian economy is not an irreversible trend. Italy is the third largest manufacturer in Europe with areas of excellence in sectors such as aerospace, shipbuilding, packaging machines, semiconductors and components. Given that the development of a country passes for its manufacturing skills and ability to innovate, Italy must think about where it intends to position itself in the near future. This concerns new and existing centres of excellence for the development (not just the adoption) of new technologies. If we look, for example, at the German system, we can find a series of institutions that are part of the national innovation system, which aim to act as bridges between the two worlds of research and industry. Among the most relevant ones are the Max Planck Institutes and the Fraunhofers. In these cases, companies themselves pay for a service that is strategic for them. These elements help to create a symbiotic relationship and ensure that the development of services is aligned with the needs (the demand side) of enterprise.

These institutions nurture synergies, collaboration and cross-pollination as staff move between organisations, as well as creating integrated career paths between universities, institutes and companies. In Germany, but also in Singapore and in other notable countries, some academic positions are linked to integrated tenures. In Italy the most important experiences of this type are found at the regional level. For example, Emilia-Romagna's High Technology Networks, a series of public-private research organisations that are of crucial

importance for the innovation process because they integrate absorption capacity, application and use of technologies while acting as a bridge between new technologies and sectoral capacities<sup>26</sup>. This underlines the importance of having a similar national network of applied research institutes, as in the proposal presented under the *Istituti Marconi* (Marconi Institutes).

It is crucial to combine a mission-oriented approach with structural changes at the organisational and institutional level. In this regard, rethinking industrial policy instruments must also take into account the special configuration of Italian industry. With the exception of a few large State-controlled companies: Leonardo, Fincantieri, Ferrovie dello Stato, Italy suffers from a lack of major world-leading enterprises. Such companies play a crucial role not only in the field of Research and Development (R&D), but also in driving entire industrial chains. For example, in the aerospace sector in the UK, 90% of R&D funding comes from the three largest companies: Rolls Royce, BAE Systems and GKN.

Italy needs a different way of thinking about economic policy and in particular about its industrial strategy. It needs to overcome the logic of indirect and unconditional subsidies and focus instead on direct instruments (investments, grants, loans) that are effective in catalysing private-sector initiatives for co-investments.

## COORDINATION AND INDUSTRIAL RESEARCH, THE NEW MARCONI INSTITUTES?

The Italian proposal to create applied research institutes, and to provide a bridge between university and industry, is based on two fundamental and innovative pillars, which do not overlap with what is already happening in the IIT (Italian Institute of Technology) network.

- *Marketing and sharing of resources.* Supporting the commercialisation phase of technological innovations and their manufacturing translatability, while ensuring access to quasi-public goods in the context of so-called enabling technologies. This infrastructure also enhances the technological readiness of the industrial ecosystem, which is therefore more capable of responding to changes while capturing value created collectively by the public and private sectors.
- *Coordinating investments.* SMEs generally lack critical mass and financial capacity to conduct R&D. These new organisations would have a catalytic role in terms of collaboration between different entities. They would also offer industrial research services to SMEs that need them, with particular incentives for certain sectors, such as robotics, AI, cyber-physical systems, all identified on the basis of missions.

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## 5.2. A strategic use of public procurement

The public demand for goods and services, if addressed in a strategic way, has the capacity to steer the development of existing companies towards the adoption of technologies, creating new markets that otherwise would not exist.

Famous examples of public procurement programmes are Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) in the USA. Primarily aimed at driving technological innovation in small and medium-sized enterprises, these programmes play a fundamental role in fostering technology transfers and the dimensional growth of companies. Under those programmes, most Federal departments in the US – especially in the health, energy and defence sectors – dedicate a fixed portion of their extramural R&D budget to fund innovative projects of small and medium-sized enterprises.

In other cases, the growth in size and the development of new technologies have been the result of public procurement directed towards specific purposes. In the 1980s, the BBC launched the BBC Computer Literacy Project, aimed not only at the growth of technology companies but also at computer literacy. The mission was to provide every British family (especially kids) with the opportunity to learn how to use a personal computer. The public demand activated by this programme encouraged the Acorn company to scale up commercial production of its electronic computer, “BBC Micro”. The subsequent technological spillovers from that initiative led to the creation of Arm Holdings, today one of the world's leading microchip companies.

Even in Italy's response to the pandemic, the work of Special Commissioner Arcuri has illustrated how public procurement and certain targeted financial instruments can recreate or reinvigorate essential production capacity. The strengthening of SIARE, the only Italian company producing ventilators, was achieved precisely in this way: within a few months the company went from producing 12 devices a week to more than 70 a day. Similarly, through public contracts, the activities of IMA and Fameccanica have been oriented towards producing machine tools able to manufacture tens of millions of masks per day, in collaboration with FCA, Luxottica and Angelini.

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## 5.3. A dynamic public administration

Italy needs to rethink the role of the public administration in order to transform it into a dynamic agent of transformation. Mission-oriented public policies imply a crucial coordinating role for the public sector, creating public value within society<sup>27</sup>. Missions call for a virtuous interaction between public and private actors, as co-creators of markets and technologies.

In order to boost the capabilities of the public administration and its entire structure we can identify the following elements:-

- **Directing the action of the public administration towards satisfying public interests.** Boosting the efficiency of the public administration is certainly a good proposition, but it should not become the only obsession. The ultimate objective of public structures needs to remain the creation of value for collective purposes, whose existence requires a strong sense of mission. This is useful not only to motivate public sector employees, but also to rethink in a dynamic way the concept of efficiency and how to evaluate it (see below).
- **Operating with a cross-departmental approach under a multi-sectoral perspective.** It is crucial to have coordination among public institutions, which need to go beyond a narrow intra-departmental logic. This implies more capacity to strategically coordinate public-sector employees within and across existing public organisations.
- **Developing internal dynamic capabilities.** This is a crucial pre-requisite in order to realise public sector objectives, beyond a static efficiency logic. This means not only developing a broad spectrum of internal competences, but also being able to attract the best available talents with roles to match their ambition.
- **Leadership and risk-taking attitude.** The public administration needs to have the autonomy to take direct initiative, not only incentivising the behaviour of citizens and firms. This means having a culture of welcoming risk and uncertainty, but also failure if conceived as a conscious learning process.

- **Adopting dynamic criteria of evaluation.** Static cost-benefit analysis does not adequately capture the qualitative impact in terms of externalities and spillovers of public policies. In doing so, it underestimates the benefit part of the analysis. Public administrations should therefore introduce different evaluation criteria, based on dynamic metrics, that could capture the creation of public value in all its qualitative and transformational aspects over the long period<sup>28</sup>.

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## 5.4. The strategic role of state-owned enterprises

Italy's state-owned companies are strategic actors in the industrial ecosystem but their systemic potential is not entirely exploited. These enterprises are among the largest in the country: they employ over 350,000 workers in Italy, they account for 17% of fixed investments and R&D in the business sector. In addition, they compete – often internationally – in strategic sectors with a high technological and innovation content<sup>29</sup>. However, these companies often act in isolation, embracing uncoordinated and sometimes conflicting strategies. The State is a silent shareholder, whose main interest appears to be the receipt of dividends at the end of each year. It is therefore neither an “entrepreneurial” shareholder who agrees on common missions nor is it interested in shaping the investment and development trajectories that have a major impact on the rest of the economy. The role of state-owned enterprises in the national innovation and production system must therefore be rethought according to a new industrial strategy oriented towards missions. This does not mean that the state must interfere in the daily management and in the operational choices of the companies it controls. Nonetheless, it should participate in defining the long-term strategic missions that these companies adopt in their industrial programmes.

Similarly, public agencies or state investment banks such as Invitalia and Cassa Depositi e Prestiti can play a key role in technical guidance and coordination of public-private investments. Both are endowed with some of the critical tools that are necessary to strengthen the structure of the Italian economy (for example, through their controlled companies). They can also provide a strategic direction by targeting their spending capacity as well as their long-term financing on particular industrial policy objectives. However, it is necessary to avoid the kind of timidity and passivity of management that myopically watches short-term financial returns from investments. This applies particularly to the underlying approach of Cassa Depositi e Prestiti, which should fully embrace the approach



of similar organisations such as Germany's KfW or the Chinese Development Bank, both of which are more oriented towards the industrial development of their respective countries.

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## 5.5. Conditionality, risks and opportunities

The COVID-19 crisis offers a unique opportunity to rethink the relationship between the public and private sectors, to steer the economy with a renewed national purpose. It is essential to heal the parasitic, gummed-up elements of the public-private exchange that have so badly affected the Italian economy. Rediscovering the traditional role of the state as an investor of first resort<sup>30</sup> is now a prerequisite for effective collaboration between the public sector and business.

The conditions for the use of public funds can have a guiding role towards the implementation of missions. When governments provide support to private companies, in cases of emergency or to promote investments, the relationship between these entities is too often biased in favour of creating private value for the shareholder, rather than public value for the company. Too often, the risks and losses are socialised while the gains are privatised<sup>31</sup>. Conditionality is therefore necessary to reduce the excesses of financialisation and rent-extraction that weaken the innovative capacity of production systems.

The imposition of conditionality in bail-outs is no longer considered sacrilegious. International experiences, especially in the most advanced countries, are now abundant, especially following the experience of the 2008/9 economic crisis. For example, Denmark and France have decided that companies that will receive public money cannot be legally registered in tax havens within the European Union. They have also agreed that the largest beneficiaries will not be allowed to distribute dividends in 2021. In France again, Air France and Renault have pledged to reduce emissions in return for government funding. Austria has imposed similar types of condition on its national carrier. Air transport in the US has received about 46 billion dollars in loans and guarantees, provided that 90% of employment is maintained, the salaries of executives are cut and outsourcing is banned.

Far from being a punitive anti-business attitude, introducing bailout conditions is a smart way to steer the economy in a certain direction. When conditionality is properly designed, they align the long-term interests of the production

system with those of society. In the short term, the focus is on preserving employment and maintaining or improving existing industrial relations. In the long term, the goal is to create business models that lead to more sustainable well-being.

The Italian government has already made important steps. The *Decreto Cura Italia* (Decree Cure Italy) and the *Decreto Liquidità* (Decree Liquidity) introduced important measures and opened new channels to operationalise conditionalities within bailouts and guarantee schemes. For example, the extension of the Golden Power is both a symbolic and operational tool to re-launch the productive economy. First, it makes clear that the government recognises a number of productive sectors and organisations as assets of strategic national interest and that the state has a duty to protect them from both internal financialised practices and external speculative takeovers. Second, by reclaiming the role of the state in influencing corporate governance decisions to protect local and national interests, it reduces the pressure on distressed companies from hostile takeovers and forced financialised practices.

**Corporate governance conditionalities.** The pandemic crisis is an opportunity to change corporate governance through the application of strategic conditions, which prevent destructive practices such as unmotivated bonuses to directors, excessive dividends, repurchase of shares, unjustified debt, use of tax havens and political lobbying. To improve corporate governance, the conditionalities must instead be aligned with tax reforms that promote practices of retain and reinvestment in the future.

**Targeted bailing-out, for investing in workers and innovative industrial renewal.** Conditions must focus on maintaining employment and protecting the productive capacity of businesses. Certain sectors facing structural crises need to be accompanied in transitioning to new activities, reflecting better wages and working conditions.

**Governing risk and rewards, for a resilient and innovative public health system.** This is especially true for the healthcare and pharmaceutical industries, which profit from value-extracting business models unchallenged by naïve public regulations and lack of conditionality. In the pharmaceutical sector, research is largely financed by the state, while the companies that use the results impose monopoly prices, often protected by patents, even against the very same public systems that financed them in the first instance. Here, conditionalities can be used to obtain public returns on investment, making the purchase of medicines accessible; prioritising sharing of knowledge and reinvestment over the search for extra profits.





Picture 6. La Scala theatre in Milan

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## 6. Conclusions

Italy has enormous potential, embedded in the value of science and culture, but also in the organisations and associations that define its economic model. Italy can experience a new economic and social Renaissance if it is able to deploy the full capabilities of this heritage, in achieving transformations that are impactful, lasting, democratic and that put citizens and workers at the centre of the process of shaping a modern stakeholder capitalism.

The mission approach presented here provides a lens through which to rethink industrial policy. It is an innovative way to collaborate across sectors inspired by the great challenges we face. It must involve different actors, from the institutional arena to the business world, from universities to the third sector.

Across nations, the Next Generation EU funds represent a historic moment for the European Union. Here too, missions are a means to benefit. The conditions required by the European Commission to obtain these resources relate to a series of long-term investments aimed at digitalisation and sustainability. The missions provide a tool to ensure that Italy can walk the talk, by coordinating European resources and national ones to obtain the largest possible multiplier effect. This multiplier must be economic and social, aimed at the well-being of citizens. In order to do this, it is necessary to embrace a perspective of public value, so that the resulting growth can be inclusive and sustainable.

In the hope that this crisis can stimulate Italy to embrace an economic rebirth accompanied by social and environmental justice, this report wants to provide an inspiration and a model for the months to come.

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## Endnotes

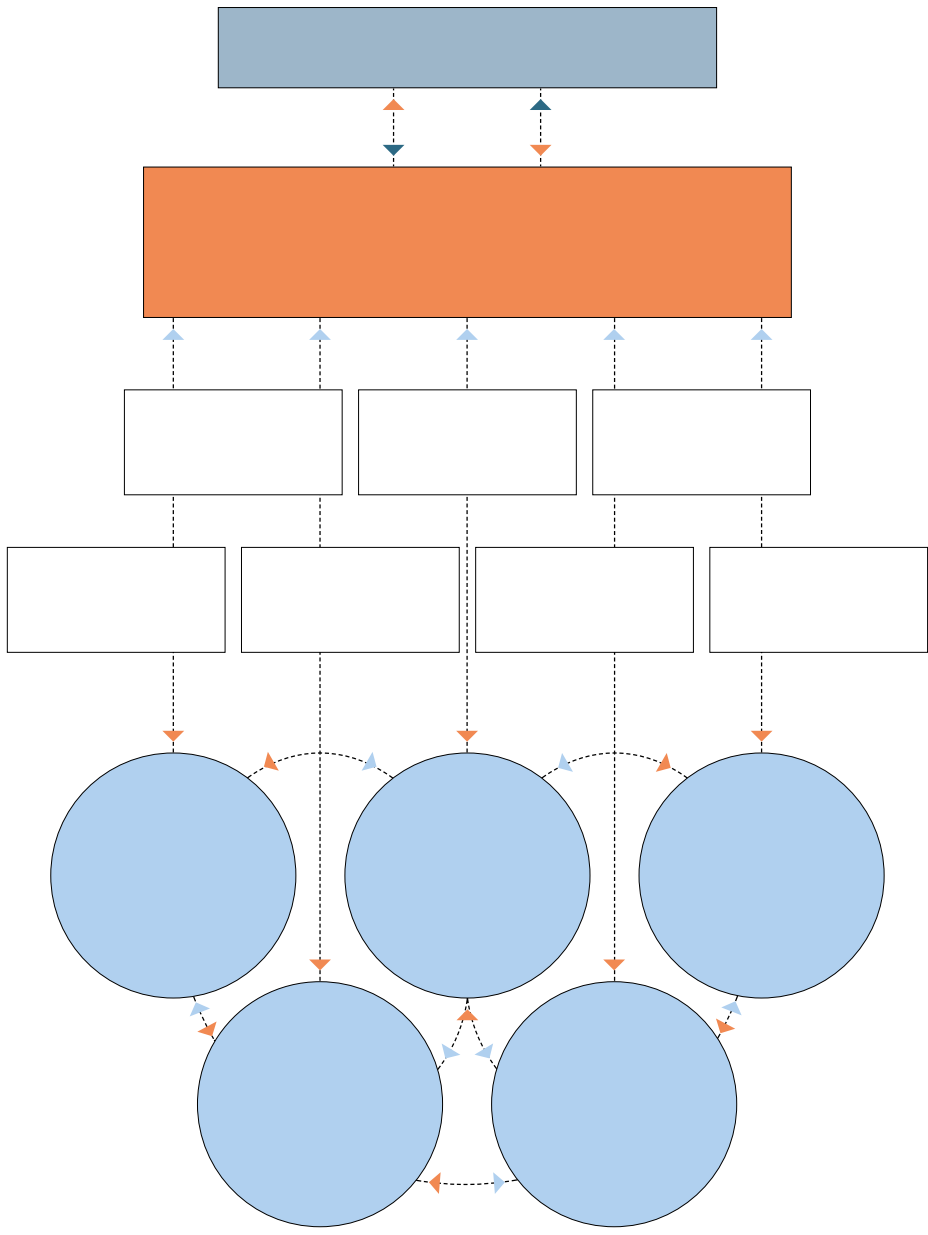
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