Malta Diġitali

2022–2027

Malta Diġitali **2022-2027**

FOREWORD BY THE
PRIME MINISTER
ROBERT ABELA

Reaping the benefits of technology is possible through the adoption of a strategy that lays out the way-forward of how to make sure that all residents and businesses can benefit from the digitalization phenomenon, which is continuously happening as we speak. Indeed, the previous strategy sets out the principles and actions to improve socio-economic development.

Malta
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The next step is for the Maltese Government to accelerate the change towards digitalisation, which cannot be avoided if we as a country are to keep pace with the developments. The 2022-2027 *Malta Diġitali* strategy focuses on the holistic transformation that is required through the digital aspect, while also tapping on new growth areas, aiming at a better society and a thriving economy.

Malta has never missed an opportunity in being a pioneer of the digital sector, and this is evident through the local ecosystem, including a robust digital infrastructure. Not only have we provided the best possible conditions to attract foreign investments, but it was made sure that these are reputable ones, which are comfortable working in a regulated context, leading to a stronger environment.

Nevertheless, the belief remains that our citizens are the top priority. It is because of this that the new strategy focuses specifically on how digitalisation can leave a positive impact on daily lives. We have placed people at the centre of our polcicies and actions. We are geared towards offering the best possible opportunities for the Maltese islands while placing the digital transformation at the top of Malta's agenda.

Digitalisation has been knocking on the door for quite a while, and the pandemic has swiftly accelerated such a process across various sectors. In the same manner that digital media connected us together, the Government envisages linking its citizens with their full potential, so that they can advance and prosper in their lives.

Hon. Robert Abela
Prime Minister

FOREWORD BY THE

MINISTER FOR THE ECONOMY, EUROPEAN FUNDS AND LANDS

The digital landscape is changing at an unprecedented pace, and digital technology is becoming more deeply ingrained in our daily lives, revolutionising the way we live, socialise and work.

Malta
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Malta Diġitali aims to lay the foundations for Malta's transition towards a more digitalised society and economy – leading to better public services, more productive businesses, and citizens who are able to harness the immense opportunities that digitalisation brings.

The recent global health challenges have indeed accentuated the digital transformation process, with ever more sectors of our Maltese society and economy using digital technology to communicate, learn, educate and work remotely.

Digital will be the driving force for both economic and societal progress as we look ahead. It is a central component of Malta's *Economic Vision 2021-2031* and underpins our mission to become a future-proof nation. Our goal aligns with the European Union's *Digital Compass: The European Way for the Digital Decade,* which presents its vision and goals on digital transformation within the areas of Government, skills, infrastructure and business.

We are also taking advantage of grants under the European Commission's Recovery and Resilience Facility (RRF) as part of the NextGenerationEU recovery instrument to support our digital transition while also enabling the further recovery of our economy within such challenging times.

Digital sectors now account for over 20% of Malta's economy and have been key drivers for growth over the past eight years. Digital is much broader than just the businesses that operate in these sectors and, therefore, digital transformation across Maltese industry is an overriding priority as we look ahead. It will spur productivity growth, innovation, new business and operating models, as well as support Malta's commitment to becoming carbon neutral by 2050.

In addition to driving our economy forward, we also want digital to be a tool to enhance wellbeing and quality of life. Maltese citizens expect to be able to access any government service at any time. We are therefore committed to developing cutting-edge digital government services over the coming years, as outlined in our new five-year strategy for Public Service – *Achieving a Service of Excellence.*

When it comes to digital, Malta's diminutive size has its benefits. The country is a great place to pilot new technology and then scale it well beyond our shores. The digital public services we design can also become a reference point for others to follow.

That is why I am confident that *Malta Diġitali* will spearhead and chart a successful path ahead, underpinning enhanced wellbeing, prosperity and economic growth over theyears to come.

Hon. Silvio Schembri
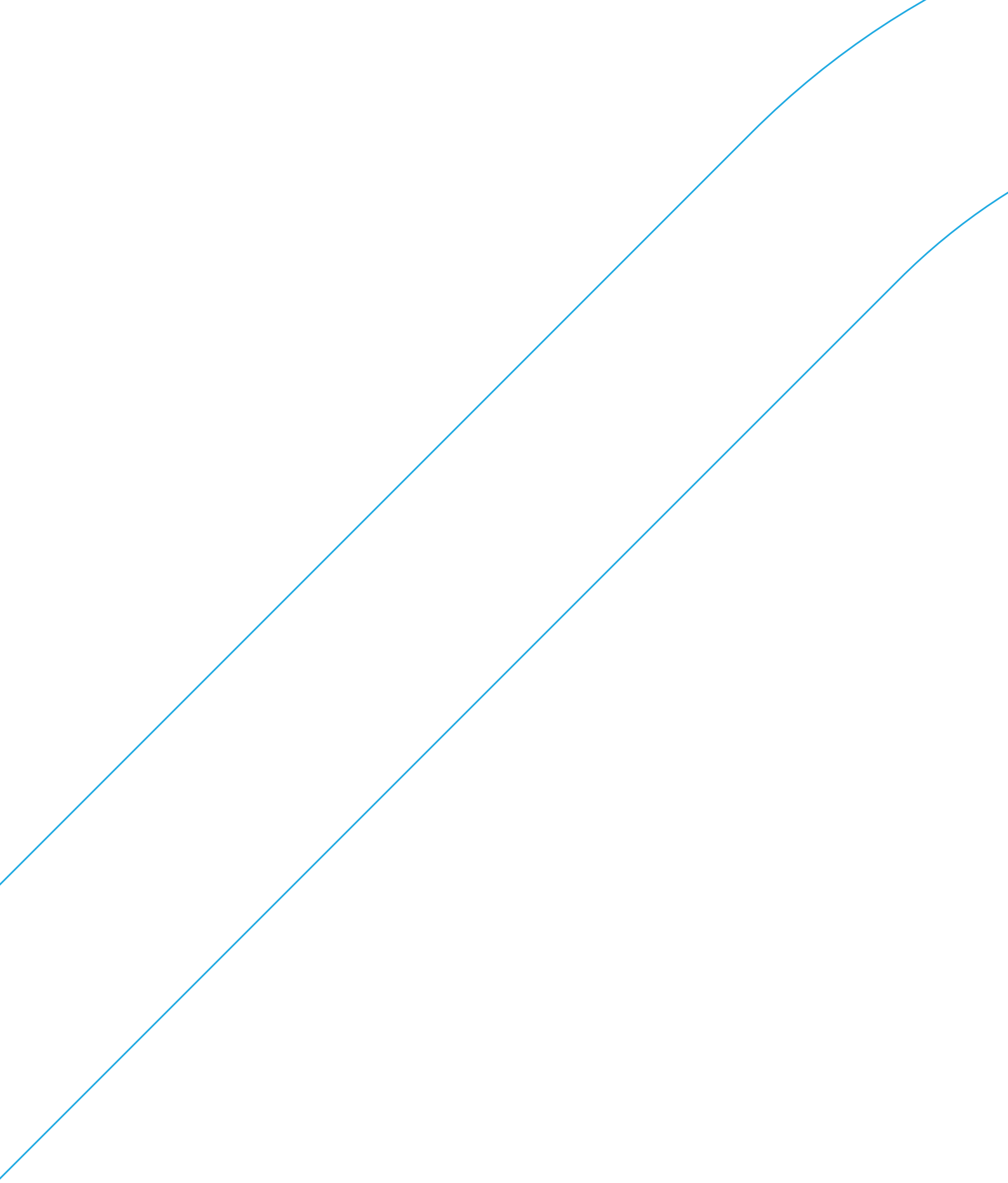*Minister for the Economy, European Funds and Lands*

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ACRONYMS

AI	Artificial Intelligence
BPR	Business Process Re-engineering
CEDEFOP	European Centre for the Development of Vocational Training
DESI	Digital Economy and Society Index
DIH	Digital Innovation Hub
DLT	Distributed Ledger Technology
EC	European Commission
EU	European Union
GVA	Gross Value Added
ICT	Information and Communications Technology
IoT	Internet of Things
MCA	Malta Communications Authority
MCST	Malta Council for Science and Technology
MDIA	Malta Digital Innovation Authority
MGA	Malta Gaming Authority
MITA	Malta Information Technology Agency
NGO	Non-Governmental Organisations
OOP	Once-Only Principle
OPM	Office of the Prime Minister
R&D	Research and Development
R&I	Research and Innovation
RRF	Recovery and Resilience Facility
SME	Small and Medium Enterprise
STEM	Science, Technology, Engineering and Mathematics

EXECUTIVE
sum

Malta Diġitali ("the Strategy") sets out the national strategy for 2022–2027 and highlights how Malta intends to maintain its momentum as a leader in digital transformation while remaining mindful of social and economic opportunities and challenges that arise. It sets out how Government shall act not only in its traditional role as policy maker, promoter and regulator, but also as a catalyst for change through digitalisation alongside other social and economic actors.

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The Strategy is built around a vision of establishing digital as the key driving force for transformation – where life in Malta is further improved, business thrives and government services are more accessible. To achieve this vision, several goals have been identified that the nation will work towards while the Strategy is being implemented. These goals are supported by six guiding principles that encompass how digital should be applied and focused.

Consequently, one of the Strategy's focal points addresses the diverse needs, requirements and expectations of various cohorts of Malta's society and economy – specifically, the way digital can make a real difference in daily life, the digital opportunities that arise, and the related challenges that will need to be addressed. This methodology is enabled via a persona-driven approach, which covers society, business and Government and through which several strategic actions are outlined. In the process, the Strategy emphasises some key ongoing projects launched through *Mapping Tomorrow: A Strategic Plan for the Digital*

Transformation of the Public Administration 2019-2021 and through Achieving a Service of Excellence: A 5-Year Strategy for the Public Service.

These projects include the full end-to-end digital transformation of all front-end and back-end services; the application of the Once-Only Principle (OOP), such that users of digital government services do not need to re-enter data which Government already holds; the introduction of digital registers and platforms to simplify citizen and business interactions; and the introduction of service design principles to enhance user experience across digital government services.

Another of the Strategy's focal points looks at how digital can shape and strengthen Malta's economy. More specifically, this is being addressed through a strategic course of action that investigates growth through innovation and further digital strategic focus on various sectors of social and economic importance. Government plays a leading role by further investing in emerging technologies, such as by setting up a digital

innovation hub (DIH) , providing access to government open datasets, expanding funding for research and innovation (R&I), and cultivating an ecosystem that is conducive to and supportive of digitalisation.

Both areas of focus, however, cannot be successful without paying attention to a number of enablers, key among which are those related to regulation and legislation, digital infrastructure and funding, as well as cybersecurity, data and eSkills. The latter three shall be further addressed via upcoming strategies in the context of increasing digital progress and related opportunities and challenges.

Ultimately, the Strategy seeks to identify the specific levers that will lead to the right outcomes. Yet, it is not prescriptive in its approach. Government will play a key role in driving forward many of the initiatives, but for the Strategy to be successful, the private sector and Maltese society must also play their part.

INTRODUCTION

01

1. INTRODUCTION

Digital technologies offer exciting new opportunities and solutions for emerging societal and business needs, and they also act as enablers for growth across all sectors of the economy. Moreover, recent global health challenges have also expedited the fast-paced growth in technology use and the radical shift to digital.

By drawing on society, business and public administration experiences gathered from a comprehensive consultation process, *Malta Diġitali* offers a vision for a digitally transformed society and economy that enable the development and provision of solutions for key needs and challenges experienced by Maltese society and the business community. It outlines a path for Malta's digital transformation journey, keeping society's wellbeing and welfare at its core. Thus, it provides an overarching vision for future transformative initiatives to complement and guide measures being taken on Malta's digital landscape.

Malta Diġitali combines elements of continuity and transformation. It builds on the progress experienced in the realisation of Malta's preceding *Digital Malta Strategy 2014-2020* and complements the implementation of ongoing Government policy, strategy and regulation, including *Malta's Economic Vision 2021-2030* (2021), *Achieving a Service of Excellence: A 5-Year Strategy for the Public Service* (2021), *Mapping Tomorrow: A Strategic Plan for the Digital Transformation of the Public Administration* (2019), the *Malta.AI Strategy* (2019), the *Smart Specialisation Strategy 2021-2027*, the *National Space Policy* (2017), the *MITA Strategy 2021-2023*, the *National Post-Pandemic Strategy* (2021), the regulatory framework for Distributed Ledger Technologies (DLT) (2018), as well as the upcoming *Cybersecurity Strategy 2022-2024*, the *Data Strategy*, the *eCommerce Strategy*, and the *eSkills Strategy*.

Malta Diġitali also commits to providing the necessary resources and investments to ensure alignment with EU-driven digital policies, strategies and legislative acts that emanate from the European Commission (EC) and its Transport, Telecommunications and Energy Council. These include the EC's *2030 Digital Compass: The European Way for the Next Decade, The Digital Europe Programme*, EU-wide cybersecurity rules, the *Artificial Intelligence Act, European Digital Identity*, the *Data Governance Act*, digital rights and principles, revised roaming regulations, updated privacy rules for electronic communications (ePrivacy), and the Single Digital Gateway.

An extensive consultation process was undertaken to support the Strategy's development. It

Malta
Diġitali

involved discussions with over thirty entities, including Malta's regulatory authorities, various Government bodies with a digital remit, Government ministries, EU Permanent Representatives, industry representatives, start-ups, investors, social partners and NGOs. In addition, several strategic workshops were held. Strategic direction and input were provided by MITA, the Digital Economy Steering Committee (MCA, MGA, MFSA, MITA, MCST, Tech.mt, MDIA and eSkills Malta Foundation), the Digital Economy Think Tank, and Government's core team for digitilisation.
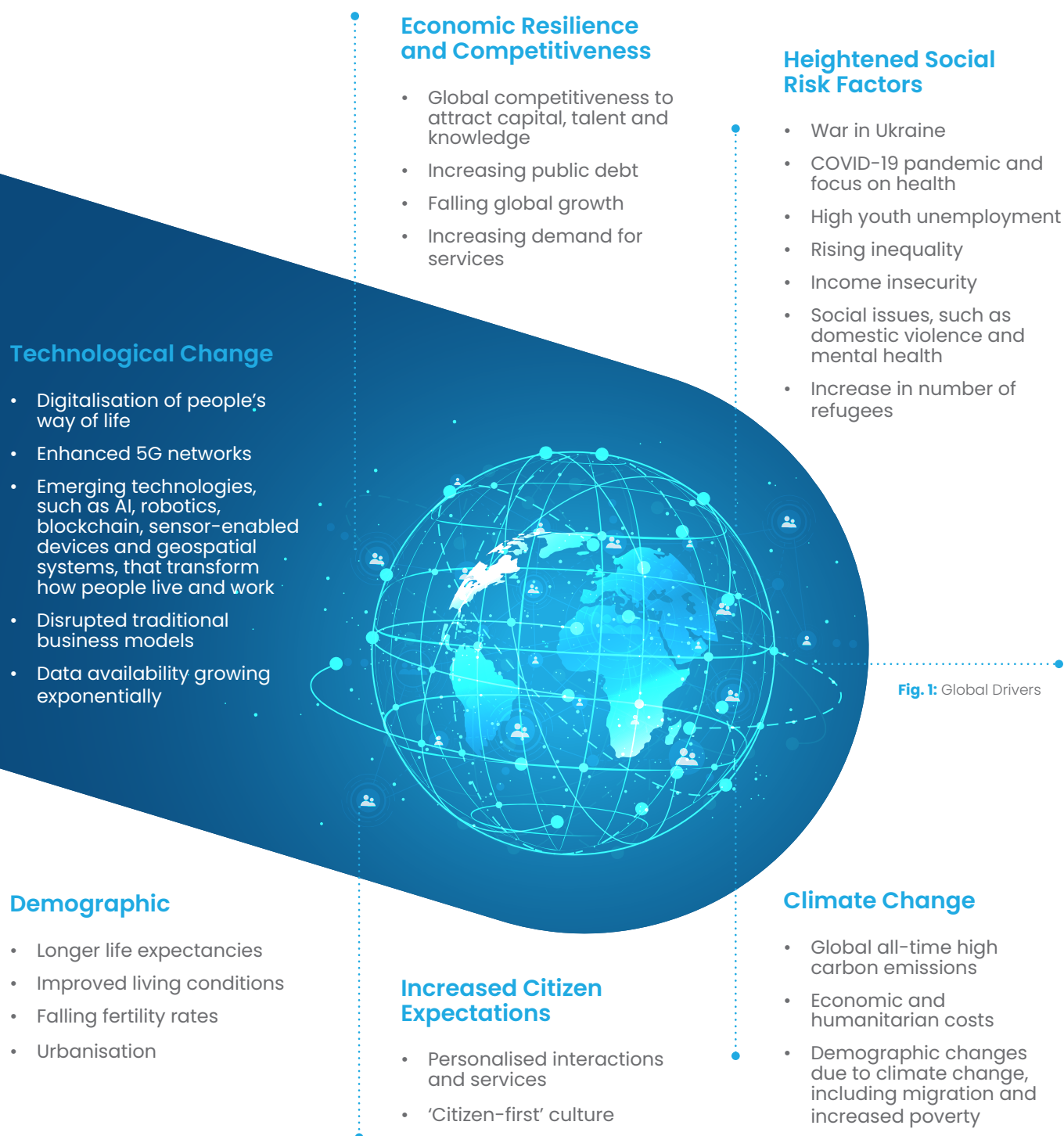
SITUATIONAL ANALYSIS

02

2. SITUATIONAL ANALYSIS

2.1 THE GLOBAL CONTEXT

The Maltese digital landscape cannot be explored without first gaining an overall view of the diverse and global political, economic, social, technological and environmental forces that come into play on an international scale, as shown in Fig. 1.

Economic Resilience and Competitiveness

- Global competitiveness to attract capital, talent and knowledge
- Increasing public debt
- Falling global growth
- Increasing demand for services

Heightened Social Risk Factors

- War in Ukraine
- COVID-19 pandemic and focus on health
- High youth unemployment
- Rising inequality
- Income insecurity
- Social issues, such as domestic violence and mental health
- Increase in number of refugees

Technological Change

- Digitalisation of people's way of life
- Enhanced 5G networks
- Emerging technologies, such as AI, robotics, blockchain, sensor-enabled devices and geospatial systems, that transform how people live and work
- Disrupted traditional business models
- Data availability growing exponentially

Fig. 1: Global Drivers

Demographic

- Longer life expectancies
- Improved living conditions
- Falling fertility rates
- Urbanisation

Increased Citizen Expectations

- Personalised interactions and services
- 'Citizen-first' culture

Climate Change

- Global all-time high carbon emissions
- Economic and humanitarian costs
- Demographic changes due to climate change, including migration and increased poverty

Malta **Digitali**

As indicated, major economic, social and environmental challenges could bring about adverse and disruptive phenomena, globally and locally. In this context, digital transformation could serve as one of the ways of addressing such issues, providing potential positive outcomes for the diverse social and economic actors in both the local and global arenas.

2.2 THE MALTESE DIGITAL ECONOMY

Digital has, indeed, ingrained itself as a core element within Malta's social and economic structure, providing a myriad of solutions for Government, business and society, and a strong base for economic growth.

Malta's digital social and business interactions have maintained an upward trend, facilitated by further growth in broadband penetration, mobile telephony and data consumption[1] in recent years. Furthermore, Government has kept up leadership momentum in digital public service provision[2]. Local research conducted in 2020 indicated positively evolving consumption patterns utilising eCommerce, particularly during the recent global disruption due to COVID-19. This included a 2% increase in internet usage, as well as an increase of up to 82% (from a previous 59%) of

users accessing the internet via mobile telephony. The study also indicated a trend among those aged between 18 and 54 of intensified smartphone use while conducting internet banking and effecting payments[3].

The Information and Communications Technology (ICT) sector has grown to represent around 7%[4] of the gross value added (GVA) generated by the local economy and to approximately 3.5%[5] of total employment. However, the digital economy's real contribution is significantly larger when one considers the indirect and induced effects, as well as the central role digital technologies play in enabling other major economic activities[6].

The fundamental shifts in the structure of the Maltese economy in recent years, along with various changes brought about by the global forces highlighted earlier, are likely to amplify the already-present capacity for additional digital economy growth and employment.

Within this context, further focus must be placed on digital skills. Even though Malta's tertiary graduation rate has increased steadily and caught up with the EU average (40.2% of the population aged 25 to 34 years in 2019[7]), STEM-related subjects account for fewer than 20% of graduates. According to estimates from the European Centre for the Development of Vocational Training (CEDEFOP), around 70% of the Maltese population aged 25 to 64 would benefit from upskilling and reskilling since they are at risk of skill loss or obsolescence because of current shortfalls in educational

attainment levels, computer and digital skills, and cognitive skills[8]. Therefore, preparing all individuals and organisations for the skilling opportunities that come with a digital economy is one of *Malta Diġitali*'s strategic priorities.

It is also key to give due consideration to EU strategies and programmes from which Malta is benefitting, such as *Digital Single Market*[9], *Digital Europe*[10], and the *Horizon Europe* programme, which is making €100 billion available in funds for investment in R&I across the EU. In addition, Malta has also been allocated grants under the EC's *Recovery and Resilience Facility* (RRF) as part of the NextGenerationEU instrument, which aims to support digital transition while enabling economic recovery in light of the recent global health and economic challenges. Hence, the alignment of *Malta Diġitali*'s initiatives with such strategies and programmes is crucial to increasing the likelihood of success.

Finally, a look into Malta's digital performance relative to other countries would also help identify where further digital strategic focus is necessary. The EC's *Digital Economy and Society Index (DESI)* is one tool that would facilitate such an assessment. It is a composite index that regularly gathers digital performance and competitiveness measures in terms of connectivity; human capital; use of the internet; and the integration of digital technology and digital public services. The DESI measure for 2022 ranked Malta in sixth place relative to other EU Member States; the performance details of which are shown in Fig. 2.
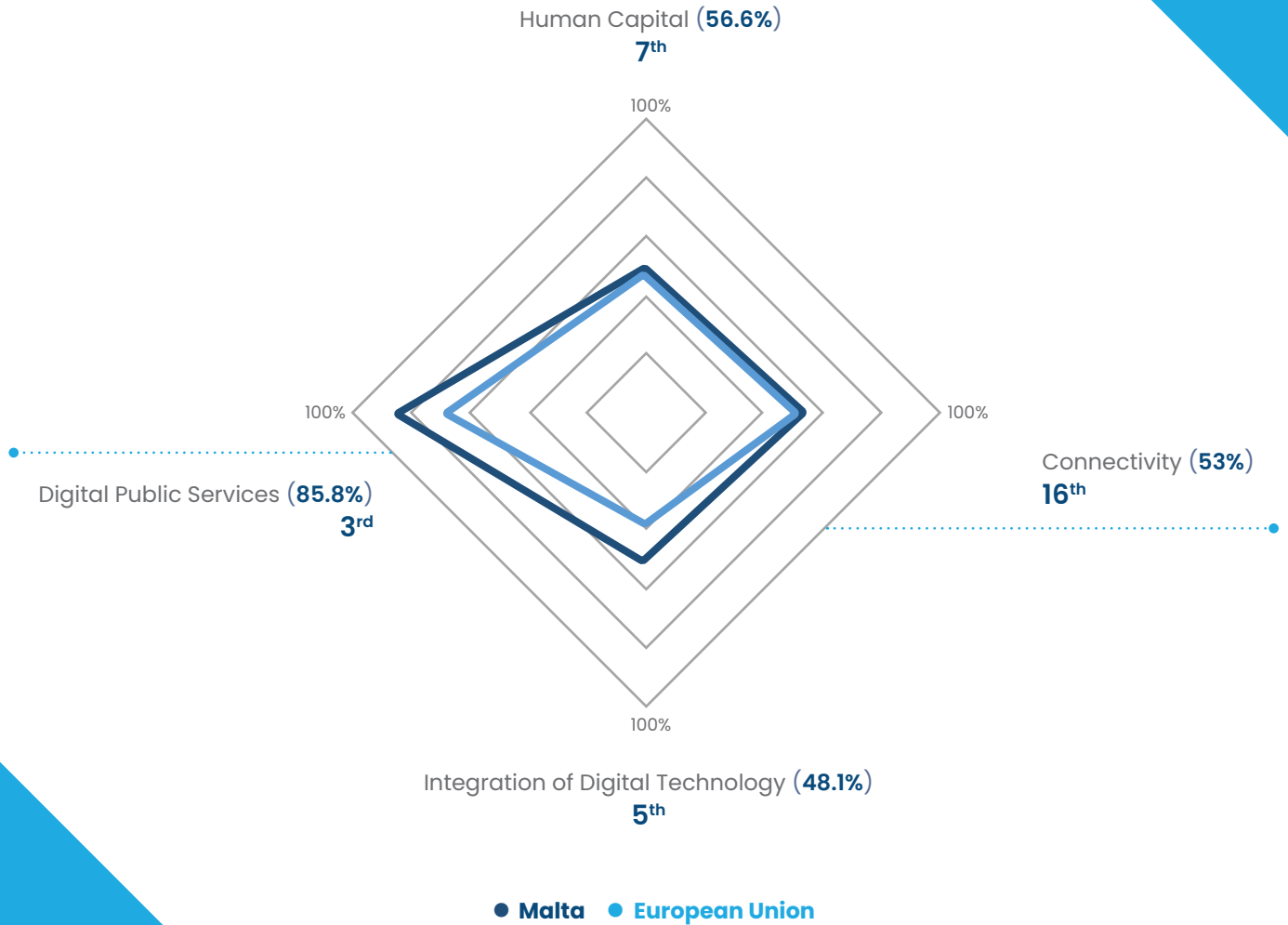
Digital Economy and Society Index (2022)

Human Capital (56.6%)
7th

100%

100%

Connectivity (53%)
16th

100%

Digital Public Services (85.8%)
3rd

100%

Integration of Digital Technology (48.1%)
5th

● **Malta** ● **European Union**

Fig. 2: DESI 2022 Ranking for Malta[11]

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As indicated in Fig. 3, the DESI Index has highlighted positive results, as well as shortcomings, for Malta within the respective dimensions, which merit further consideration by *Malta Diġitali*.

Dimension	Top performing areas	Least performing areas
Connectivity	Fast broadband (NGA) coverage and Fixed Very High Capacity Network (VHCN) coverage	At least 1 Gbps take-up and 5G coverage
Human Capital	Proportion of ICT graduates	ICT specialists
Integration of Digital Technology	Use of big data, social media and the cloud by enterprises	e-Commerce turnover
Digital Public Services	Digital public services for citizens and businesses	Open data

Source: Adapted from the EC's Digital Economy and Society Index (DESI) 2022

Fig. 3: DESI 2022 Performance Track for Malta

STRATEGIC POSITION

03

3. STRATEGIC POSITION

3.1 VISION

Within the overall context, *Malta Diġitali*'s Vision is to establish digital as the key driving force for the transformation required to:

- Make the lives of Maltese citizens better, enable businesses to thrive, and make government services more accessible.
- Achieve economic growth through innovation and further strategic focus on specific societal and economic areas of importance.

Accordingly, this also requires the strengthening of fundamental and critical enablers. Therefore, *Malta Diġitali*'s Vision for the upcoming years is:

Digital as the driving force
for transformation leading to a
better society and a thriving economy.

3.2   GOALS

In line with its Vision, the Strategy's high-level goals are to:

- Further strengthen Malta's economy through digitalisation.
- Place digital transformation at the top of Malta's policy agenda.
- Accelerate digital research and innovation and position Malta as a location to pilot and scale technology.
- Alleviate societal, infrastructural and environmental pressures through technology.
- Further narrow the digital divide and assist underserved segments of society and business to go digital.
- Digitally upskill Malta's current and future talent pool.
- Create the best end-to-end digital public services in Europe.
- Improve trust, security and resiliency in data and digital services.
- Prioritise investments in technical and infrastructural digital capabilities.

3.3   THE OVERALL STRATEGIC FRAMEWORK

Malta Diġitali is a crucial instrument for the attainment of Malta's *Economic Vision 2021–2030*. The vision and goals of *Malta Diġitali* will be achieved through an all-encompassing **digital transformation journey** that covers:

1. Maltese society, the private sector and public administration.
2. Several areas of growth triggered by innovation and developments in strategies both of a horizontal nature, such as the *Smart Specialisation Strategy*, and vertical ones related to specific thematic areas, such as health, education, transport, justice and tourism, and which use digital technologies as an enabler.
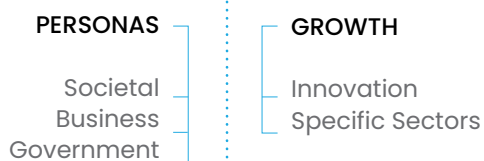
The Strategy also depends on several key enablers related to regulation, legislation, digital infrastructure and funding, as well as to more specific ones such as cybersecurity, data and eSkills, which are also to be covered by their corresponding strategies for the coming years.

Malta Diġitali shall provide the overall strategic direction for all such strategies in the process. The Strategy's overall perspective is represented in the model shown in Fig. 4 and elaborated upon in the forthcoming chapters that focus on its various components.
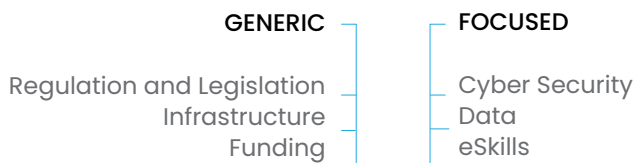
Malta Economic Vision 2021-2030

Malta Diġitali

Digital Transformation

PERSONAS
- Societal
- Business
- Government

GROWTH
- Innovation
- Specific Sectors

Digital as the driving force

Strategic Enablers

GENERIC
- Regulation and Legislation
- Infrastructure
- Funding

FOCUSED
- Cyber Security
- Data
- eSkills

Horizontal & Vertical Digital Strategies

Fig. 4: Strategic Model

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3.4 GUIDING PRINCIPLES

Malta Diġitali's vision and goals are guided by the following principles:

- **Digital as a means to an end:** Digital technology is a tool and not an end in itself. To have maximum impact, its application should focus on outcomes: improving quality of life and wellbeing; making it easier to do business; driving operational efficiency; enhancing productivity; enabling new economic activities; driving sustainable development progress; and accelerating research and innovation.

- **User-centricity:** Digital service design should start with identifying end-user needs; increasing convenience and accessibility; improving service quality; promoting efficient interactions; and driving better experiences for various users who may have different needs and capabilities.

- **Confidence and trust:** Various inhibitors hold users back from adopting the digital technologies available to them. Hence, digital service developers should focus on building trust and confidence by making applications easy to use; engendering trust in the way personal information is accessed, shared and used; ensuring the availability and resilience of digital platforms; and establishing robust cybersecurity.

- **Inclusivity:** People need the right tools, connectivity and skills to use digital technology. Therefore, alongside accessibility considerations, the roll-out of digital services should be accompanied by awareness and training programmes to help people become more digitally conversant in using digital tools, regardless of people's backgrounds or circumstances.

- **Sustainability:** The proliferation of new digital technology and the goals for achieving a Green Economy should be viewed as complementary objectives. Consequently, digital solutions should be harnessed to drive the sustainable transition of Malta's economy and society.

- **Digital ecosystem coherence:** Strategic alignment on the necessary enabling components, alongside roles and capabilities required for Government and the market, will help ensure the coherence of a strong digital ecosystem. This necessitates ongoing coordination across the various entities involved within public administration, as well as transparent dialogue with the market on digital priorities, challenges and the planned roadmap for investments.

DIGITAL TRANSFORMATION

04

4. DIGITAL TRANSFORMATION

4.1 PERSONAS

Malta Diġitali aims to pave a digital transformation journey that will set out the right conditions to positively affect Maltese society and the economy.

The concept of digital holds various meanings, depending on the context or application in which it is used. For individuals, digital can mean their base of daily work and source of income; an essential means to maintain family connection and social inclusivity; an opportunity for a brighter future for oneself or others; a key tool to facilitate daily life and entertainment; a vulnerability; a native world; or even a totally unfamiliar one. Similarly, digital can take various forms across businesses of different sizes and purposes. It can be regarded as a contributor to facilitating business operations; an opportunity for business diversification or growth; an enhancer of business resilience; or even a threat if not used properly.

This diverse set of digital expectations, concerns, motivations and relationships across facets of daily life has led *Malta Diġitali* to adopt a persona-driven approach to digital. As indicated in Fig. 5, the Strategy aims to project a vision of digital transformation through the lens of various societal, business and government personas. The personas provide an encompassing view of different digital needs, therefore aligning stakeholders with key criteria relevant to each segment. The actions stem from the root needs, pain points and challenges experienced (or expected to be experienced) by these personas.

The development of these personas was based on input gathered via a wide-ranging research exercise that included desk research and stakeholder discussions. Collectively, these personas direct the attainment of *Malta Diġitali*'s vision and goals.

SOCIETAL PERSONAS	BUSINESS PERSONAS	GOVERNMENT PERSONAS
• Student • Young adult • Hyper-connected individuals • Elderly • Vulnerable citizens • Digital exiles and orphans • Tourists	• Sole traders and micro-enterprises • SMEs and large enterprises • Foreign investors	• Intra-government client • External Government client

Needs, Pain Points and Demands

***Malta Diġitali*'s Actions**

Fig. 5: Persona-based approach for Digital Society, Business and Government

4.1.1. SOCIETAL PERSONAS

Student Persona

The student persona is characterised primarily as digital by default, having grown up in an environment where devices are the natural choice for most daily activities, including communication, entertainment and learning. Yet, one cannot simply assume such a stereotype without paying close attention to other challenges or shortcomings that exist in daily life.

Limitations relating to the availability of and access to digital tools and resources may arise, both at home and at school – and the reasons might not simply be financial in nature. For example, there may be a lack of understanding of the benefits of using technology at home. Educators may also lack the training and support to fully integrate technology into learning.

However, difficulties experienced by students in their pace of learning, as well as engagement with conventional teaching practices, may provide a solid basis for increased digital learning and assessment. Indeed, in addition to action taken by various non-digital actors[12] that can influence a learner's level of engagement and success, the use of digital tools may help tackle the critical issue of early school leaving.

Ultimately, a student increasingly needs to be prepared to form part of an evolving workforce reality shaped by digital proliferation across all forms of work activities. Such development calls for increased demand in digital knowledge and specialisation[13], as well as possession of creativity, and communication and teamwork skills. Additionally, the ability for a student to make informed choices along their learning path will become even more crucial, particularly due to the increasingly significant growth in demand for ICT specialists.

Hence, students must not be digitally excluded in any way so that they are placed in a better position to communicate, interact and, ultimately, engage in future work across various sectors. However, such consideration does not simply involve digital availability factors. It also calls for actions that address students' digital wellbeing and safety, so that they are protected from potential challenges such as digital addiction, digitally induced anxieties, and exposure to – or even participation in – forms of online abuse.

Young Adult Persona

Further digitalisation calls for the workforce, especially the younger generation, to possess digital competencies that safeguard and widen their job prospects. Locally, digital specialists are increasingly in demand. Upskilling and reskilling, enabled by formal recognition rewards, are becoming increasingly necessary for all jobs that are likely to be impacted by digitalisation and the dynamic changes it triggers. Apart from skills, further consideration needs to be given to the concept of work-life balance, especially in the context of increased online interaction that may blur the line between one's personal and professional lives.

Such developments, which could be supplemented further by digital investment from overseas, could potentially position Malta as a nation of outstanding digital talent, which would guarantee a stronger workplace for the younger generation and those to come.

Apart from the younger generation's economic contribution, consideration also needs to be given to the services and information they are expected to both render and benefit from, along with all other beneficiaries. Further promotion of Government's online services and more comprehensive online service provision within the private sector are required. Moreover, ease of accessibility and an ongoing focus on user-centricity need to be ensured in the process.

Hyper-connected Individual Persona

The hyper-connected individual expects to interact socially and conduct business from anywhere and at any time. This reality can only be attained via digital means and also needs to be complemented by the appropriate infrastructure, tools (including electronic signatures and authentication, as well as Maltese language support), regulatory and legal frameworks, policy updates, incentives, and the availability of and access to data that is necessary for members of a digital society to contribute and for a digital economy to operate efficiently and effectively.

Elderly Persona

The elderly persona is likely to have a higher dependency on health care, social security and other services that enable independent living despite the user's physical limitations. Knowledge and digital means to facilitate the provision of such required services would be highly impactful. Yet, attention must be paid to the paradigm shift that the elderly face when transitioning from in-person service provision – both public and private, such as banks – to interactions that are fully online.

Thus, trust and confidence amongst the elderly when adopting and using online service provision needs to be engendered. Further efforts must be made to ensure that online services and tools are secure and, above all, designed with the elderly in mind, while still allowing for alternative routes for those who genuinely cannot go digital.

Indeed, another factor to consider is the extent to which the elderly can afford digital means. Affordability issues could lead to digital exclusion and, worst of all, loneliness, which tends to be prevalent among the elderly. Given their potential vulnerability, the elderly need to feel safe within their community. Therefore, related digital measures should also enable them to easily connect to their loved ones, feel safe and protected, and even allow them to actively participate in society beyond their physical constraints.

Vulnerable Persona

On a more general note, the vulnerable persona experiences similar challenges and digital requirements to the elderly. A vulnerable person often needs special care, support and protection due to bigger risk of digital exclusion in view of the difficulties and challenges they face. Hence, their requirements include knowledge about appropriate services such as those related to social security and personal protection, among others. They also experience digital service accessibility challenges that arise from such issues as low literacy levels, poverty, visual impairment and others.

Shortcomings in hard and soft skills, especially those that result from digital transformation and which are likely to increase in the future, may also potentially render segments of the workforce as vulnerable members of society. Hence, such challenges must be addressed, possibly through digital re-skilling, upskilling, certifications and other measures, as appropriate.

Digital Exile and Digital Orphan Persona

Digital exiles and digital orphans experience digital shortcomings that can potentially be traced to early childhood and which could also render them as vulnerable members of society. A digital orphan has significant access to digital but lacks the proper guidance needed on its use. On the contrary, a digital exile is granted very limited digital access, mainly due to sceptical views or attitudes at home. In both cases, their interpersonal and social skills, especially related to the use of digital, may likely be impaired in the long term.

Therefore, further assessment is needed to find ways to tackle the issues experienced by digital exiles and digital orphans accordingly. Further awareness and education campaigns on online security and safety, which include schools and more specifically homes, may primarily help to mitigate such scenarios.

Increased measures may also be needed to address the long-term repercussions such people face and to ensure their digital inclusivity, both on a social and professional level.

Tourist Persona

Nowadays, tourists use digital channels, tools and platforms to select their destination and to plan and ensure their travel experience will be memorable. Hence, there is the need to ensure digital investments that promote Malta as a key tourist destination. Investments, such as incentives for hotels, other hospitality establishments and tourism related operators, may need to be made to meet increasing consumer demand for a sustainable travel experience accessed via digital means.

Above all, through digitalisation, tourists may get to enjoy travel experiences tailored to their specific needs, tastes and requirements. This also includes related investments pertaining to journey planning and booking, language, connectivity, and facilities that make travel easier at the airport and on ferry crossings and public transportation.

Moreover, newly emerging niche digital tourism segments, such as Esports competitions, may also serve as opportunities to tap into related investments in the local market.

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SOCIETAL PERSONAS ACTIONS

1. Invest further in the use, adoption and integration of digital technologies within the education sector. Re-skill and upskill educators and assist them in the creation of digital content.

2. Provide assistance and training to those in need to enable their access to digital technologies.

3. Harness the use of digital technologies and associated skills to encourage learning from home.

4. Incentivise and create awareness and guidance programmes that nudge students to pursue a professional career in digital fields, with a particular emphasis on females.

5. Adopt digital technologies to assist on issues of a societal and health-related nature while minimising the harm that such technologies may bring about.

6. Introduce frameworks and facilities to enable employees to work remotely or in a hybrid manner.

7. Improve societal wellbeing by accelerating investment in smart, digital traffic-management solutions.

8. Expand digital health services to assist the elderly in accessing non-critical health services without having to leave their home.

9. Provide the elderly and vulnerable with assisted-living technologies and smart devices and make online services more accessible.

10. Provide financial assistance to local councils and NGOs to set up digital community activities.

11. Assist citizens, especially those who are not digitally savvy, to use online services efficiently and securely.

12. Implement digital tools to bridge language barriers.

13. Use digital tools to encourage increased and correct use of the Maltese language.

14. Implement the Single Digital Gateway (SDG) directive so that European citizens can use cross-border public services.

15. Incentivise consumers to go online and work towards a cashless society.

16. Invest in digital policing tools to improve security at a local level and enhance investigation and prevention capabilities.

17. Harness digital as a key tool to promote and provide a tailormade travel experience for tourists visiting Malta.

18. Foster increased digitalisation of hospitality services.

4.1.2. BUSINESS PERSONAS

Sole Traders and Micro-enterprises
Persona

The demand for eCommerce and delivery services has increased considerably, especially following the global COVID-19 pandemic. While this may serve as an opportunity for many businesses, one cannot discount the various limitations predominantly faced by small businesses – both micro as well as larger SMEs.

Financial constraints are often one key drawback. Electronic payment costs can be expensive and such businesses may lack the volume of custom that would allow them to offer discounts. Resource pooling may drive better and lower cost integration into the digital value chain. Access to funding schemes may also help, provided businesses are aware of them and that schemes are quickly and easily accessible. In fact, the costs associated with accessing funding schemes often discourage their uptake. Furthermore, the lack of resources that can act as guarantees often hinders young enterprises and sole traders from availing themselves of external credit funding opportunities.

Coupled with financial constraints are human-related ones too. For example, in addition to international deliveries that are costly relative to the European mainland, Malta's import and export activities are often complex and require extensive paperwork.

Many micro-enterprises also often lack basic digital skills and knowledge on what digital can do for their business. Therefore, upskilling initiatives must ensure sufficient awareness while remaining cognizant of the resource and time constraints that such firms face.

Data is another key resource required to enable market growth. Yet, micro-enterprises often experience greater challenges than larger companies when it comes to tapping into large repositories of data.

SMEs and Large Enterprises
Persona

Even though the challenges faced by sole traders and micro-enterprises, particularly financial and human resource ones, may not be as acute within

larger SMEs, they cannot be ignored as they are still likely to pose significant shortcomings.

To this end and by using digital technologies, regulated business and compliance activities can be strengthened and be made less resource-intensive. However, enterprises also often lack funding and expertise to take forward large-scale digital transformation activities. Current funding schemes lean towards aiding capital projects, new employment, and research and development (R&D) but may not be sufficient to fund digital transformation. In this context, further developments in digital Government-to-business services may help ease administrative burdens often faced by businesses. In addition, although recognised by law, digital signatures and electronic contracts are still not widely used, possibly because of the lack of a unified national system to sign, authenticate and accept them.

The further promotion of remote-working and family-friendly policies across different jobs can also potentially contribute to a growth in Malta's labour market participation rates, which are generally and inherently small. Within the digital supply environment, larger enterprises may have the capacity to expand and/or diversify into digital markets, but the limited availability of digital talent is a major inhibitor. Indeed, the shortage of specialised digital skills is a significant barrier to business growth, tech diversification and, ultimately, national economic development. Thus, the availability of digital skills, along with other required capabilities, serves to facilitate the development of new digital products and services that in turn could enhance national competitiveness.

Foreign Investors
Persona

Foreign investors need to be made aware of Malta as an ideal location for digital business activities, and several other ancillary measures must also be taken care of. Primarily, investors should be able to establish and operate their business as efficiently as possible, including being able to open bank accounts easily.

Further digital infrastructure investments along with holistic and comprehensive online facilities are critical for improved accessibility, availability and comprehensiveness of the services required by an investor to be able to easily set up their business locally. Through such online facilities, the availability and promotion of fiscal, regulatory and policy requirements and incentives are key supporting and necessary elements. Critical processes, such as due diligence, must also be covered as part of the overall digital transformation. Additionally, the availability and access to open data sets would facilitate easier entry to the local market and thus act as a business support incentive in its own right.

Finally, the adequate availability of digital talent and the presence of a holistic R&D ecosystem are two critical factors that could attract and sustain foreign investment. However, both need to be boosted further on the local level, possibly by attracting local investments by foreign academic institutions and businesses specialising in digital technologies. In addition, positioning Malta as an ideal testbed location for tech-startups and digital technology development would further consolidate Malta's R&D and skills base within the digital domain.

BUSINESS PERSONAS ACTIONS

19. Assist businesses to transform digitally, including through the uptake of emerging technologies, both in their internal processes as well as in their service provisioning.

20. Create awareness and support programmes to assist tech- startups and to help businesses set up or participate in digital marketplaces and facilitate collaboration with partners within their eco-system.

21. Set up certification programmes to help businesses and their consumers ascertain that their digital platforms are safe and secure for online transactions.

22. Incentivise traders to go online, work towards a cashless society and internationalise.

23. Continue to invest in Malta's Digital Nomad Visa targeted to third-country nationals.

24. Invest in enabling tools and policies, such as digital technology and regulatory sandboxes, to position Malta as an ideal test-bed location.

25. Attract leading universities and companies that specialise in digital technologies to invest in Malta.

26. Implement a web portal that provides a holistic and consolidated approach to facilitate the interaction of foreign investors with Malta.

4.1.3. GOVERNMENT PERSONAS

Government's digital transformation initiatives are spearheaded by the Office of the Principal Permanent Secretary (PPS) and led by relevant organisations withing the Public Administration.

Mapping Tomorrow: A Strategic Plan for the Digital Transformation of the Public Administration 2019-2021[14] was launched in 2019 and built upon the concepts of client-centricity, one Government, sharing and reuse of data, end-to-end digital services, digital-by-default, and business process re-engineering (BPR). It also spurred the use of emerging technologies, such as artificial intelligence (AI), Internet of Things (IoT) and distributed ledger technologies (DLTs).

The recently launched *Achieving a Service of Excellence: A 5-Year Strategy for the Public Service*[15] targets service of excellence based on quality, accountability and sustainability to meet and even exceed clients' needs. Fostering institutional knowledge, using appropriate technology, and investing in the people behind service provision are among the most essential components for achieving this vision. Hence, in line with the Public Service Strategy, the focus is on the continued transformation of public service delivery into a seamless process for Government's clients, both internal and external.

Intra-Government Client Persona

Instilling a quality-based mentality focused on providing a service of excellence is a challenge. Here, digitalisation could drive more informed decision-making about services through tools that provide continuous monitoring and measurement in real time. This would further ensure the quality of public services and resultant customer satisfaction.

Apart from quality performance measurement, digitalisation could also contribute to further effective management and increased mobility of public administration employees. A more highly skilled workforce, upon which sustainable structures can be built, can be facilitated by a transformation of the people management role into a more proactive and data-driven one, as well as by further investment in employee training.

In addition, enabling employees to work remotely and providing the necessary tools may open opportunities for Government to extend operating hours while respecting employees' work-life balance.

External Government Client Persona

Ensuring client-centricity, particularly in terms of accessibility, is an ongoing challenge for any service provider, including Government. Within the context of digitalisation, the

GOVERNMENT PERSONAS ACTIONS

service design stage is crucial in ensuring that key parameters are given due consideration, especially in view of managed feedback mechanisms.

Another key challenge within Government is its diverse portfolio of public service provisioning to individuals and organisations, which in most cases involves various governmental entities. The further provision of omnichannel services, including the consolidation of feedback channels, would help address such issues.

Furthermore, sectors face the challenge of upholding the Once-Only Principle (OOP), whereby individuals and organisations provide diverse data only once in contact with public administration, while public administrative bodies then take action to share and reuse this data internally, even across borders, respecting data protection regulations and other policies in the process as applicable.

27. Improve the quality of public services and increase customer satisfaction by means of digitalisation and a system to measure and monitor service provision[16].

28. Implement digital solutions to facilitate flexible and more efficient ways of working[17].

29. Implement digital solutions aligned towards the adoption of service design standards to address all quality determinants and to ensure that stakeholders' engagement and clients' skills and needs are considered throughout the service delivery chain[18].

30. Offer all public services through *servizz.gov* as a single point of entry capable of expanding across new digital channels to consolidate and improve the customer experience[19].

31. Implement the Once-Only Principle (OOP) via numerous initiatives mainly involving registers for data sharing and encouraging open data, while empowering citizens in terms of their data[20].

32. Apply latest innovations, to increase the level of trust between the Public Service and its clients, as well as to match their increasing expectations and particular life events. In addition, introduce modern technology practices to facilitate the interaction between the Public Service and its clients[21].

Digital transformation also implies growth in a digital ecosystem through innovation, as well as further digital strategic focus within sectors of societal and economic importance.

4.2.1. INNOVATION

In aligning with Malta's *Economic Vision 2021–2030*, the development and sustainability of the digital economy will take shape through Government-led and Government-supported investments in digital innovation. This could take various forms, including spending on R&D, attracting venture capital, incentivising private industry to invest in technology for an economic multiplier effect, improving regulatory policy, and applying digital as a catalyst for a green economy in line with the EU's related commitments. In this manner, an ecosystem conducive to innovation, productivity and growth can be established. Such an ecosystem could ultimately ensure the digital and economic sustainability of the digital economy, despite Malta's diminutive size and resource limitations.

Malta
Diġitali

INNOVATION ACTIONS

33. Invest in digital research by establishing Malta as a hub for digital technology research through investment in and the promotion of success stories, the setting up of digital tech incubator(s), and the provision of assistance to digital tech entrepreneurs. This is particularly pertinent in the context of emerging technologies, such as AI, IoT and Quantum Computing.

34. Set up a Digital Innovation Hub (DIH) to provide access to state-of-the-art technology for R&D and increase the uptake of advanced digital technologies. This will also strengthen collaboration, skillsets and national competitiveness.

35. Encourage growth and investment in innovative technologies by micro, small and medium-sized enterprises to further attract digitally innovative start-ups via fiscal incentives.

36. Nurture the development of new digital economic niches.

37. Initiate digital crowdsourcing platforms, campaigns and contests to solve national problems.

38. Actively follow and participate in EU discussions on an EU Central Bank Digital Currency (CBDC) by the European Central Bank[22].

39. Improve regulatory policy to support tech infrastructure and encourage investment in digital tech-related areas.

40. Explore the use of innovative and emerging technologies, such as IoT and DLTs, to identify, promote and adopt Green Tech solutions.

41. Promote and incentivise the use of digital technologies to reduce impact on the environment.

42. Tackle e-waste by pro-actively enacting a plan to tackle the e-waste problem and ensure that Malta meets its targets in terms of the EU's *Waste Electrical & Electronic Equipment Directive.*

4.2.2. SPECIFIC SECTORS OF SOCIAL AND ECONOMIC IMPORTANCE

Further focus on strategic digitalisation within specific sectors of social and economic importance may potentially carve out new niches and create new sectors of growth for the economy as part of Malta's digital transformation process. These new niches and sectors include those related to health, education, transport, justice, tourism, life sciences and bioinformatics, game development, and Esports. Such developments would need to ensure alignment with their corresponding vertical strategies, as well as other specific strategies that use digital as an enabler, such as that on Smart Specialisation.

Malta
Diġitali

SPECIFIC SECTORS OF SOCIAL AND ECONOMIC IMPORTANCE ACTIONS

43. Adopt digital solutions within the tourism sector in line with the *Malta Tourism Strategy 2021-2030* and the *Digital Tourism Roadmap 2030*. This may include an enhanced Digital Tourism Platform.

44. Develop a niche in the application of digital technologies within healthcare, life sciences and bioinformatics in line with the *Smart Specialisation Strategy 2021-2027*.

45. Take an active stance towards the responsible use of technology in education to increase uptake among all demographics, in alignment with the *Framework for the Education Strategy for Malta 2021-2024* and other related education strategies.

46. Expand Malta's existing specialisation in the maritime sector through state-of-the-art digitalisation and innovative application of digital technologies in line with the *Smart Specialisation Strategy 2021-2027*.

47. Use digital solutions within the existing judicial structures through the development of a dedicated *Digital Justice Strategy* (2021).

48. Build on the foundations laid by *Malta's Vision for Video Games Development and Esports* to assess ways to support organisations within the sector.

STRATEGIC ENABLERS

05

Bringing the planned digital transformation to reality relies on several key horizontal enablers, some of which are generic while others focus on aspects of critical importance. The generic strategic enablers, as well as the focused ones, permeate all aspects of this Strategy. The latter must be dealt with within the scope of their respective national strategy, which is currently being articulated and which will be launched in the near future.

5. STRATEGIC ENABLERS

5.1 GENERIC

Regulation and Legislation

Legislative developments need to continue to align with advancements in technology and effectively address challenges and opportunities resulting from the use of technology. Regardless of the industry, statutes and policies form the framework required for each sector to be productive and effective within the context of digitalisation. Such efforts entail ongoing multi-disciplinary input involving various stakeholders.

Infrastructure

A sustainable digital economy entirely depends on the ongoing development of digital infrastructures at both a national and governmental level. Both MCA and MITA play a critical role in ensuring the availability of these digital infrastructures.

Funding

Financial support within the field of digital technologies, through local and EU funds, can range from the provision of assistance to entities conducting R&D to help businesses implement digital transformation. Such funding prospects present an opportunity for the digital economy to grow and, ultimately, for the national economy to reap benefits from the investments made.

Malta
Diġitali

GENERIC STRATEGIC ENABLER ACTIONS

49. Ensure alignment of laws and regulations to match the needs of digital technologically enabled industries to adequately protect users and offer entrepreneurs, investors and the market an opportunity to benefit from legal certainty.

50. Introduce the concept of digital rights as part of the Constitution.

51. Support continued investment in local and international digital connectivity, provide broader access to the internet, and strengthen the resilience of Malta's national infrastructure in line with an updated National Broadband Plan.

52. Implement and promote the use of digital signatures at a national level.

53. Invest and promote increased free public wi-fi and consider widespread roll-out of strategically located phone-charging lockers.

54. Invest further in digital projects and services, and supportive digital regulatory policy and infrastructure, as aligned to the national agenda and context.

5.2 FOCUSED

Cybersecurity

The increased reliance on technology brought about by a digital economy will inevitably result in increased cyber risks, the implications of which can be economically disruptive, resulting in the need to consider cybersecurity both holistically and in-depth.

Data

The management of existing and newly created data is at the core of any digital solution and transformation process. In fact, the ultimate success of any digital transformation demands an understanding of data enabled through effective data quality and governance initiatives.

eSkills

The pace of technology adoption has profoundly impacted the labour market and the type of skills needed in the economy and society. eSkills are thus becoming a necessity both at a basic level for all of society as well as for most occupations, both now and increasingly in the future.

Malta
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FOCUSED STRATEGIC ENABLER **ACTION**

55. Launch and implement strategies in the following focus areas:

- Cybersecurity
- Data
- eSkills

IMPLEMENTATION AND GOVERNANCE

06

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Digitali

The Strategy seeks to identify the proper levers to drive the right outcomes. However, it avoids being prescriptive in terms of approach so as to allow further flexibility in the initiatives undertaken within an increasingly dynamic yet innovative global digital context.

It is understood that public administration will play a key role in driving forward many of the initiatives. However, for the Strategy to succeed, the private sector and society also need to play their part. Ultimately, as clearly indicated throughout the Strategy, digital is there for all – individuals and organisations alike – to benefit from.

Following the Strategy's launch, more detailed planning is to be undertaken to facilitate its effective implementation by all relevant stakeholders. This shall need to be followed by ongoing monitoring of progress against the ensuing detailed plans, serving as a tool for consultations and plan updates regarding potential developments occurring within the local digital landscape. Such tasks shall be spearheaded by the Ministry responsible for the Digital Economy,

which shall ensure an ongoing holistic approach of the Strategy's implementation that is in line with *Malta's Economic Vision 2021-2031.*

Giving due consideration to country-specific assessments and the use of relevant widely recognised performance indicators within the digital sphere should also aid when gauging Malta's maturity in attaining *Malta Diġitali*'s vision in the coming years.

Ultimately, while *Malta Diġitali* acts as a key reference point for digital on a national scale for the coming five years, it shall also trigger the roll-out of several national and sectoral digital (or digital-related) strategies required to ensure that its implementation can be far-reaching and complete across Malta's entire society and economy.

END NOTES

Malta
Diġitali

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17 Refer to initiatives 16, 33, 34, 39, 41 in Achieving a Service of Excellence: A 5-Year Strategy for the Public Service for further information on the proposed actions.

18 Refer to initiatives 3, 9, 14, 15, 18, 44 in Achieving a Service of Excellence: A 5-Year Strategy for the Public Service for further information on the proposed actions.

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