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D2.1 – Annual Report Baseline

Assessment & Monitor DMA

Co-funded by the
European Union

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1. Introduction

1.1. Project Scope

This project involved conducting a survey for the Malta Digital Innovation Authority (MDIA), the public body implementing the Malta European Digital Innovation Hub (EDIH) - DiHubMT.

The survey employed the Digital Maturity Assessment (DMA) tool to evaluate the digital maturity of industries across Malta, ensuring statistically significant results.

The methodology for the DMA survey involved a structured approach to collecting and analysing data on digital transformation within enterprises. SurveyMonkey was used as the primary tool for administering the questionnaire. Initially, a predefined customer list was used to systematically send out surveys to each participant via email in a specified format. If additional clarification was required, direct interviews with customers were conducted to ensure comprehensive data collection.

The collected data was compiled and analysed to assess digital maturity levels. Finally, all collected data was delivered to the MDIA in Excel format, ensuring that the information was easily accessible and ready for further analysis and reporting.

The survey was conducted across Malta and Gozo, with the original target of 400 different companies, however, only 107 complete submissions were obtained due to a lack of response from the market after multiple repetitive attempts.

The final deliverable comprised of detailed report formatted according to MDIA's requirements, along with securely handled raw data to ensure full compliance with data ownership and security protocols.

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1.2. Purpose

The objective of this project was to conduct a comprehensive survey employing the DMA tool to evaluate the current level of digital maturity within Malta's industries.

1.3. Terms of Reference

The agreed terms of reference for the assignment were as follows:

- Reaching users through the DMA tool survey.
- Collecting data through surveys and analysing it to produce meaningful results.
- Detailed review of the deliverable to ensure it was provided according to the required standards.

2. Digital Maturity Assessment

2.1. Introduction

A company's digital maturity reflects its level of integration and utilisation of advanced technologies to enhance business operations and inform strategic decision-making. This includes the adoption of cloud computing services, wherein the company employed solutions such as finance and accounting software, enterprise resource planning (ERP) systems, customer relationship management (CRM) applications and security software. The implementation of AI technologies also signifies digital maturity, indicating how the company leveraged AI for tasks ranging from automation to data analysis.

Furthermore, a mature company demonstrates proficiency in big data analytics by analysing large volumes of data from various sources to gain actionable insights and drive informed business strategies. Overall, digital maturity encompasses the extent to which a company embraces these technologies to optimise processes, improve efficiency and stay competitive in a rapidly evolving digital landscape.

2.2. Methodology

The European DMA tool is structured around two distinct modules, Module 1 – Customer Data, and Module 2 – Digital Maturity. Since each function had its own specific data upload template, the raw data obtained from the survey tool was interpreted in accordance with the Digital Maturity Assessment Questionnaire for SMEs provided in the Appendix.

Within Module 1 – Customer Data, general information about the entity is collected. While in Module 2 – Digital Maturity, questions aimed to measure the digital maturity of the enterprise. These questions assessed companies' current and future plans, focusing on six key dimensions:

2.2.1. Digital Business Strategy

The questions of this dimension intend to capture the overall status of an enterprise's digitalisation strategy from a business perspective. They ask about the

enterprise's investments in digitalisation per business areas (either executed or planned) as well as company's readiness to embark in a digital journey that might require organisational and economic efforts not yet foreseen.

2.2.2. Digital Readiness

The digital readiness dimension provides an assessment of the current uptake of digital technologies (both mainstream and more advanced technologies) that is valid for both manufacturing and service companies.

2.2.3. Human-Centric Digitalisation

This dimension looks at how staff are skilled, engaged and empowered with and by digital technologies, and their working conditions improved, with a view to increase their productivity and wellbeing.

2.2.4. Data Management & Connectivity

This dimension captures how data is digitally stored, organised within the enterprise, made accessible across connected devices (computers, etc.) and exploited for business purposes, keeping an eye on ensuring sufficient data protection via cybersecurity schemes.

2.2.5. Automation & Artificial Intelligence

This dimension explores the level of automation and intelligence facilitated by digital means that is embedded in business processes.

2.2.6. Green Digitalisation

This dimension captures the capacity of an enterprise to undertake digitalisation with a long-term approach that takes responsibility and cares about the protection and sustainability of natural resources and the environment (eventually building a competitive advantage out of this).

2.3. Digital Maturity Assessment Findings

2.3.1. Digital Business Strategy

The first element of identifying the sampled companies' digital maturity is an assessment of what business areas have undergone investments concerning digitalisation. For the sake of completeness, this question is presented in two aspects, investments that were already done and investments that are planned to happen.

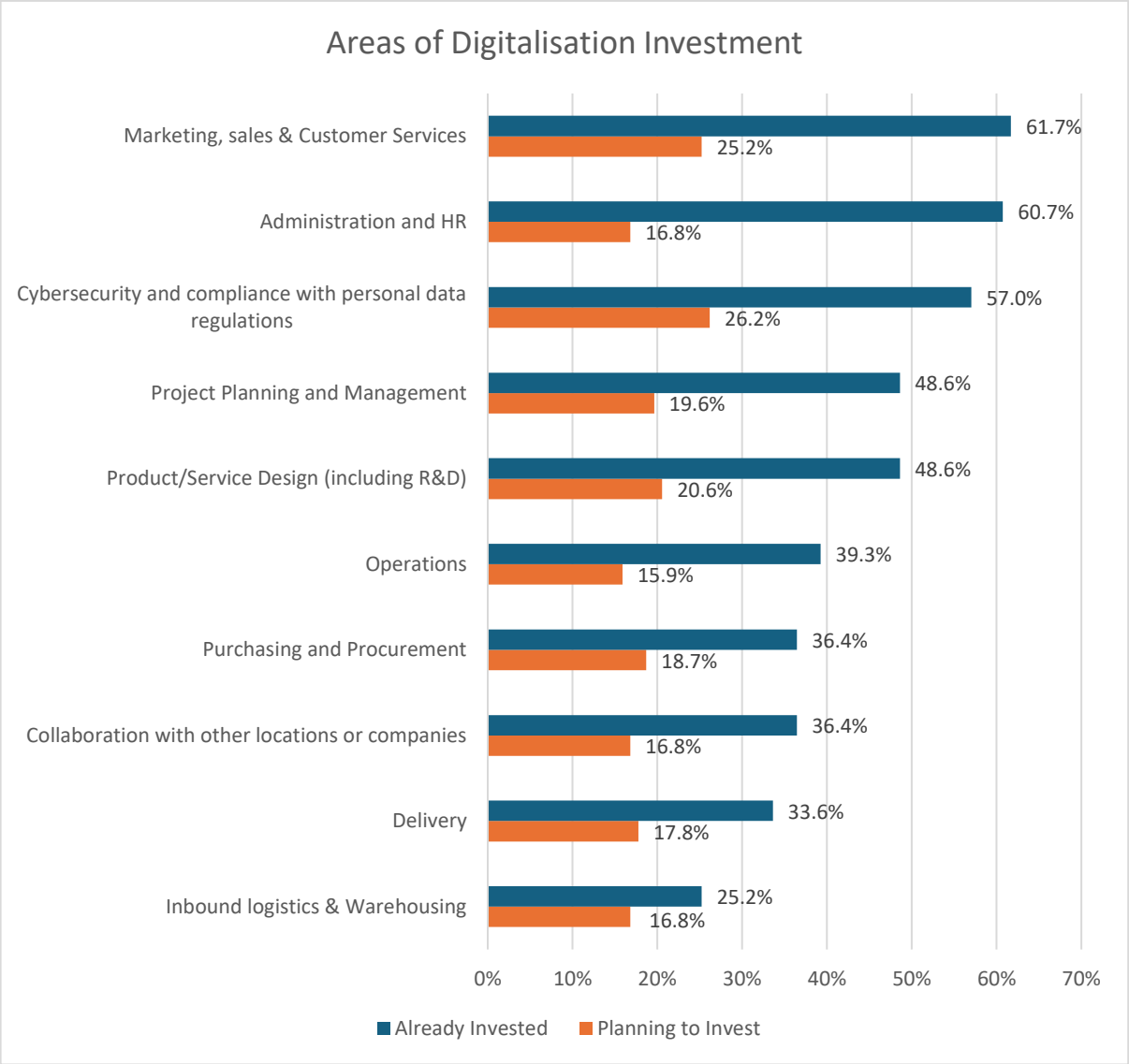


Figure 1 Areas of Digitalisation Investment

Digital transformation investments across enterprises demonstrate strategic prioritisation of key business functions. Marketing, sales, and customer service

domains lead current digitalisation efforts, with 61.7% of organisations having already implemented digital solutions in areas such as customer relationship management, order processing, and support systems.

Closely following are administrative and human resources digitalisation initiatives, representing 60.7% of the surveyed organisations. Cybersecurity and personal data regulation compliance constitute the third most prominent investment area, with 57% of companies having already undertaken digital transformations in these critical domains.

These three sectors notably represent the most significant areas of existing digital investment, significantly outpacing other business functions. In contrast, inbound logistics and warehousing emerge as the least developed area, with only 25.2% of organisations having made digital investments.

Regarding future digital investment plans, the landscape reveals a more measured approach. Cybersecurity and personal data compliance remain the foremost priority, with 26.2% of organisations planning future investments. Marketing, sales, and customer service sectors follow closely, with 25.2% of companies intending to enhance their digital capabilities.

Operations and inter-organisational collaboration represent the areas with the most limited digital investment intentions, at 15.9% and 16.8% respectively, suggesting potential opportunities for strategic digital transformation.

2.3.2. Digital Readiness

In addition to carrying out investments in areas as well as planning them, an entity's readiness for digitalisation (or further digitalisation) requires a more cohesive understanding. The following results were observed amongst our sample when asked for multiple ways in how they think the enterprise is prepared for digitalisation.

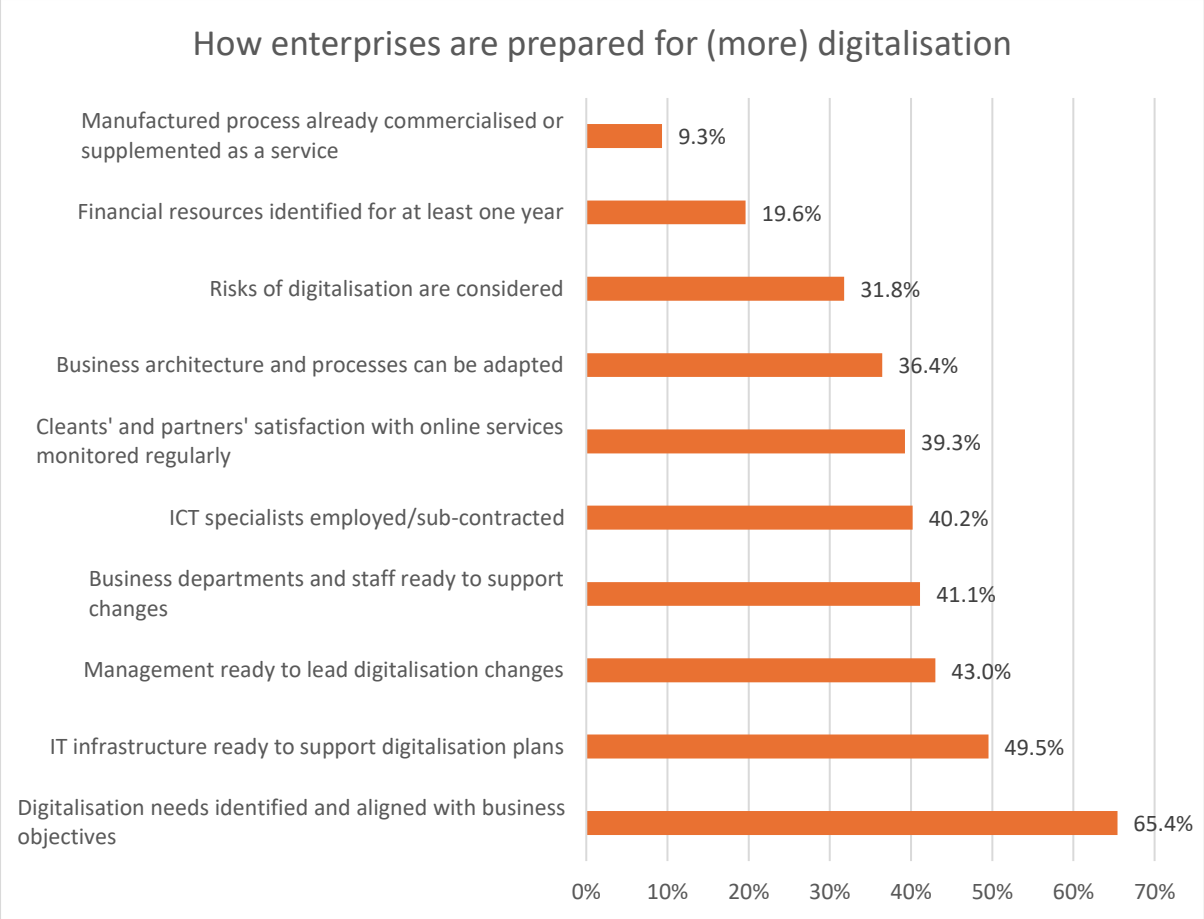


Figure 2 Digital Readiness

Leading the way, 65.4% of enterprises have identified and aligned their digitalisation needs with broader business objectives. This suggests a strong strategic focus on ensuring digitalisation initiatives support core organisational goals.

However, other areas show room for improvement. Only 49.5% report having an IT infrastructure that is ready to support their digitalisation plans, and just 43% have management teams that are prepared to lead digitalisation changes in their

respective entity. Similarly, less than half (41.1%) have their business departments and staff ready to adapt to digitalisation. Such gaps in operational readiness could hinder the effective implementation of projects.

Elsewhere, only 19.6% of enterprises have secured financial resources for at least a year to fund digitalisation and a mere 9.3% have already commercialised or supplemented physical products as digital services. This may indicate that many organisations are still in the early stages of digital transformation. Overall, the data points to a mixed picture, with enterprises making progress in strategic alignment but needing to bolster operational capabilities to fully capitalise on digitalisation opportunities.

Technologies Already in Use by Enterprises

To understand the current state of digital technology adoption across enterprises, respondents were asked to identify which digital technologies and solutions were already implemented within their organisations. The question assesses both the breadth and depth of digital transformation, ranging from basic infrastructure to more sophisticated customer-facing solutions.

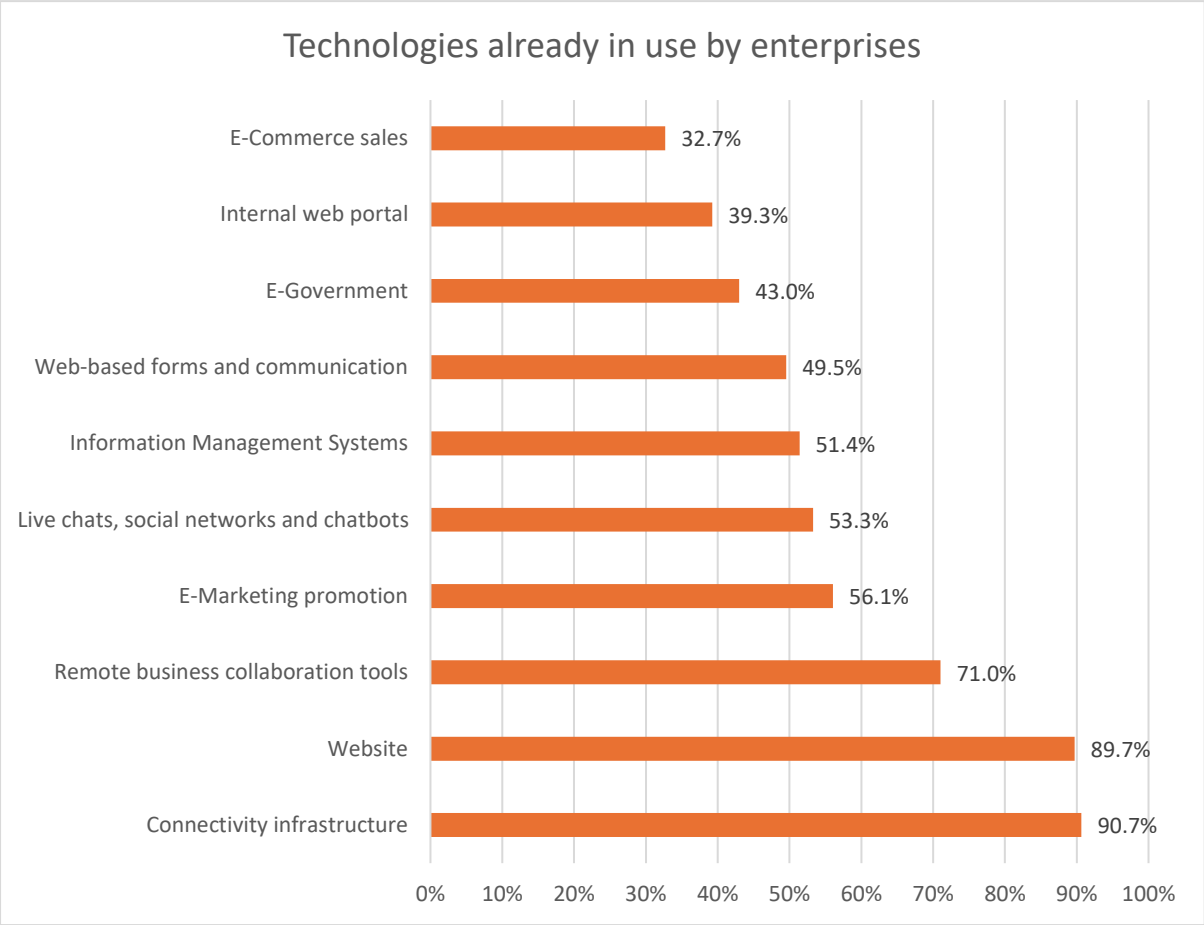


Figure 3 Technologies already in use by enterprises.

Foundational digital infrastructure is widely adopted, with 90.7% of enterprises reporting use of connectivity infrastructure and 89.7% having an online website presence. This indicates that the basic digital foundations are largely in place for the majority of organisations.

Moving up the digital maturity curve, enterprises are significantly leveraging web-based tools to enable remote collaboration (71%) and digital marketing and

promotion (56.1%). These technologies facilitate enhanced productivity, customer engagement and operational flexibility.

Enterprise-facing digital solutions also show substantial deployments, such as information management systems (51.4%), e-government platforms (43%) and internal web portals (39.3%). These address core administrative and operational needs, suggesting enterprises are steadily digitalising their back-end processes.

However, more customer-facing digital capabilities, like e-commerce sales (32.7%) and live chats/social networks (53.3%), demonstrate relatively lower adoption levels. This could imply that enterprises are still in the process of fully integrating digital interfaces to enhance customer experience and engagement.

Overall, the data points to a mix of digital maturity, with enterprises having established foundational infrastructure but still working to fully leverage more sophisticated, customer-centric digital solutions.

Usage of Advanced Technologies

In addition to understanding current digital technology adoption, the survey explored enterprises' engagement with advanced digital technologies. A total of seven cutting-edge technologies were assessed for different levels of involvement ranging from operational implementation to consideration for future use.

The survey reveals varying levels of maturity in advanced digital technology adoption across enterprises. CAD & CAM systems show the highest level of operational implementation at 19.6%, followed by IOT & Industrial IOT at 16.8%. This indicates that these technologies have gained the strongest foothold in enterprise operations. However, even these leading technologies have relatively low adoption rates, suggesting that advanced digital transformation is still in its early stages.

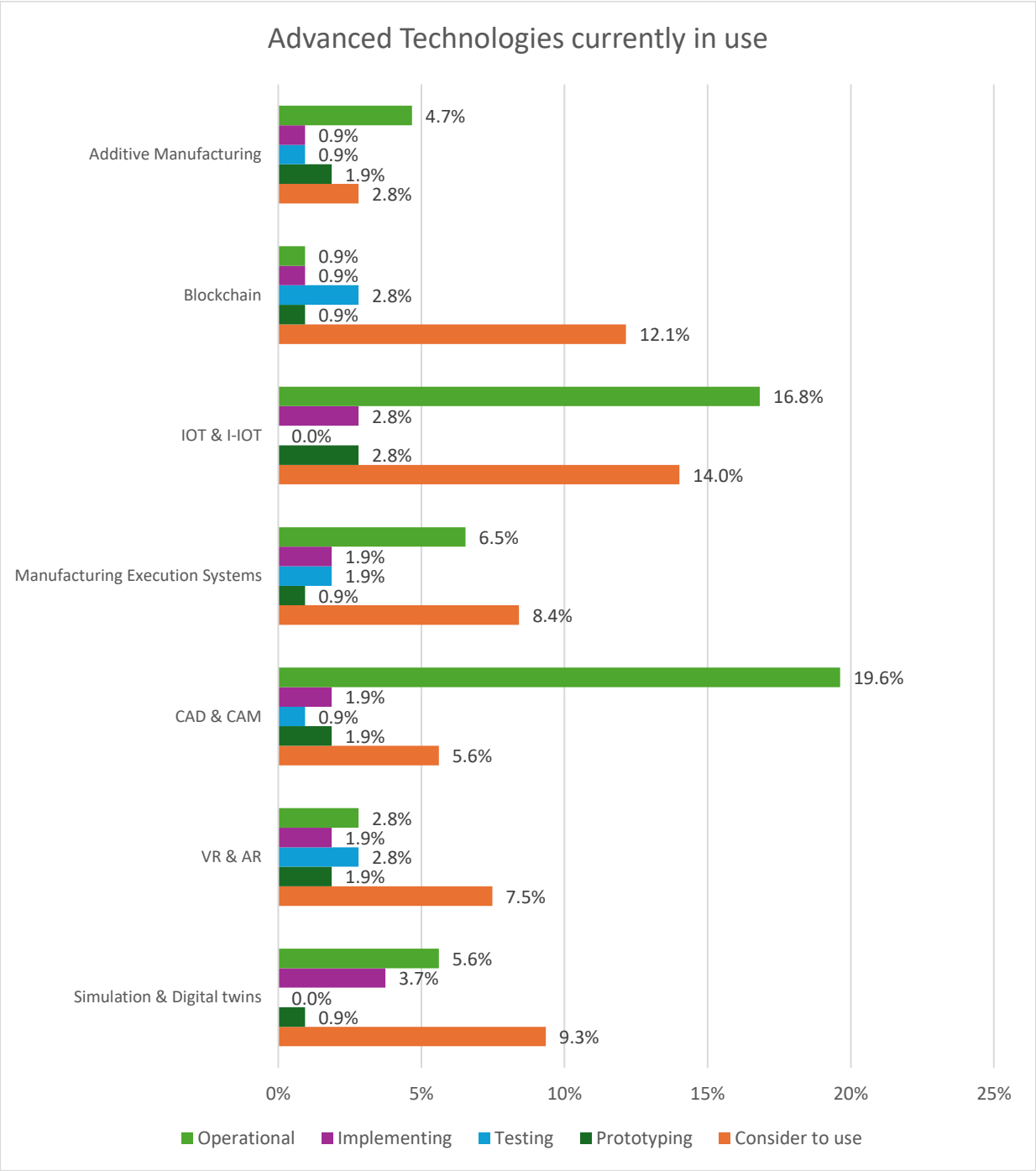


Figure 4 Advanced technologies currently in use by enterprises.

Other technologies demonstrate interesting adoption patterns. Blockchain, while operational in only 0.9% of enterprises, is being considered by 12.1%, suggesting a growing interest in its potential applications. Similarly, Simulation & Digital twins show a combined 10.2% of enterprises are either operational (5.6%) or implementing (3.7%), with another 9.3% considering adoption. Additive

Manufacturing (such as 3D Printing) shows the lowest overall engagement, with only 4.7% having it operational and 2.8% considering its use. The data reveals a clear pattern: most advanced technologies are either in early adoption phases (testing or prototyping) or still under consideration, with relatively few enterprises having fully operational implementations. This suggests a cautious, measured approach to advanced technology adoption, possibly due to the complexity, cost or perceived risks associated with these technologies.

2.3.3. Human-Centric Digitalisation

As the workplace becomes increasingly digital, understanding how enterprises approach employee development and digital capabilities is crucial. The survey examined various methods organisations use to enhance their workforce's digital skills and improve working conditions.

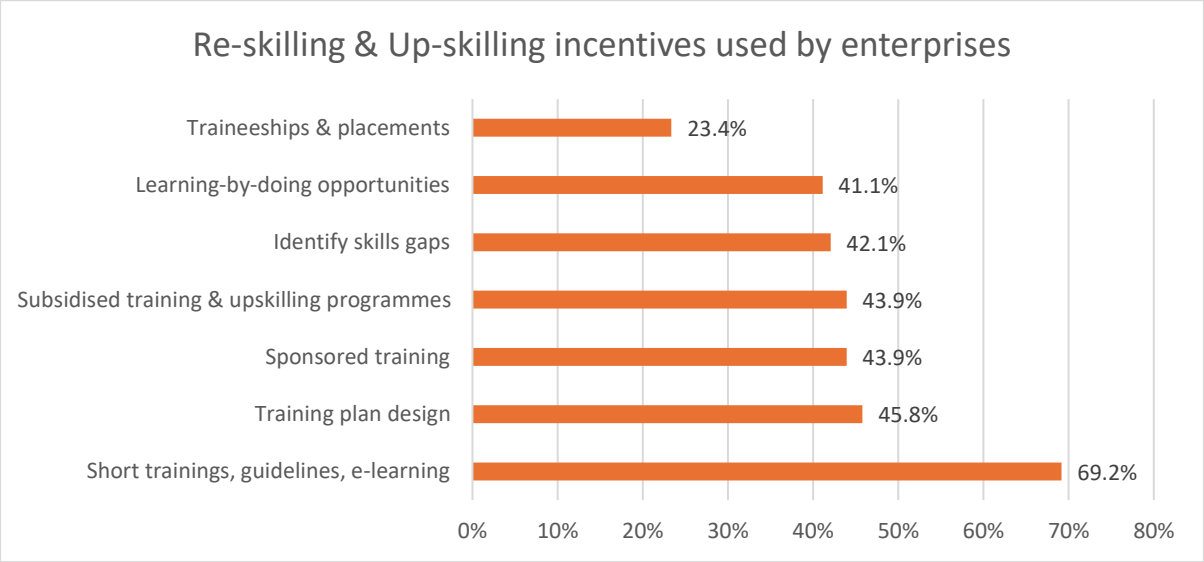


Figure 5 Re-skilling & Up-skilling incentives used by enterprises.

The data reveals a strong preference for flexible and accessible learning solutions, with short training, guidelines and e-learning being the most widely adopted approach at 69.2% of enterprises. This significant adoption suggests organisations are prioritising adaptable, bit-size learning formats that can be easily integrated into employees' work schedules. Training Plan Design follows as the second most common initiative at 45.8%, indicating a structured approach to skills development.

There's a notable clustering of mid-range adoption rates, with Sponsored training and Subsidised Training & Upskilling Programmes both at 43.9%, followed closely by skills gap identification at 42.1% and learning-by-doing opportunities at 41.1%. This suggests enterprises are implementing a multi-faceted approach to skills development. However, traditional Traineeships & Placements show relatively lower adoption at 23.4%, perhaps reflecting the resource-intensive nature of these programmes or a shift towards more flexible learning methods. Overall, the data

indicates that enterprises are actively investing in their workforce's digital capabilities, with a clear preference for modern, flexible learning approaches over traditional training methods.

Building upon this, the survey explored how enterprises approach staff engagement and empowerment during the implementation of new digital solutions. Respondents were asked about eight different engagement strategies, ranging from awareness-building to practical support mechanisms.

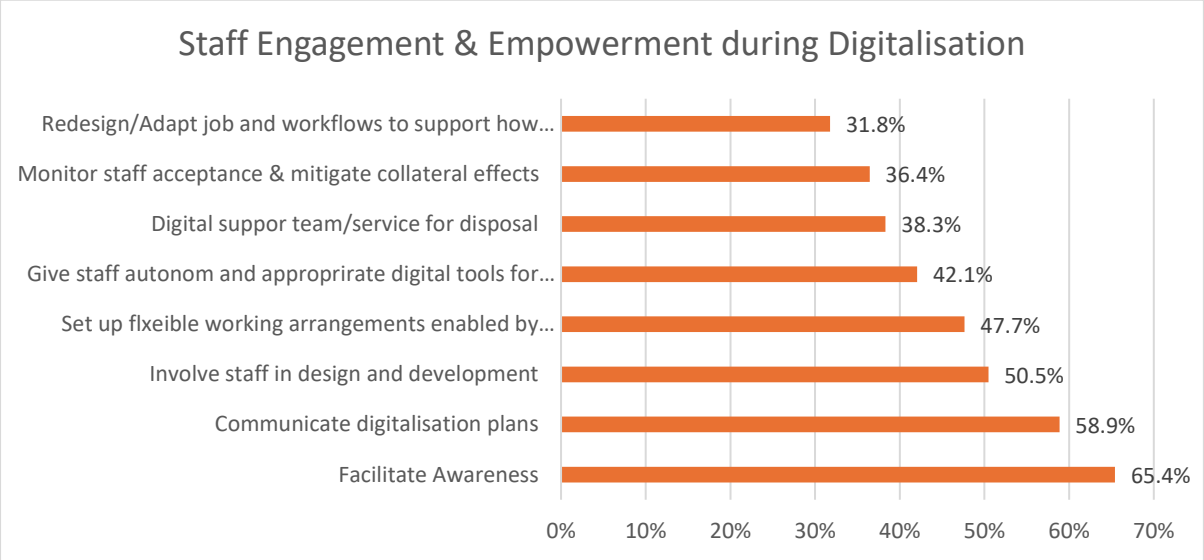


Figure 6 Staff Engagement & Empowerment during Digitalisation

The data reveals a clear emphasis on communication and awareness-building in enterprises' approach to digital adoption. Facilitating awareness leads the initiatives at 65.4%, closely followed by communicating digitalisation plans at 58.9%. This suggests organisations recognise the fundamental importance of keeping staff informed and engaged throughout the digital transformation journey. The high adoption of staff involvement in design and development (50.5%) further reinforces a collaborative approach to digital transformation.

Practical support mechanisms show varying levels of implementation. Flexible working arrangements enabled by digital solutions are utilised by 47.7% of enterprises, while 42.1% give staff autonomy with appropriate digital tools. However, more specialised support measures such as digital support teams (38.3%), monitoring staff acceptance (36.4%), and redesigning workflows (31.8%) show lower

adoption rates. This pattern suggests that while enterprises prioritise high-level engagement and communication, there may be room for improvement in providing more targeted, operational support for digital adoption. The data indicates a potential gap between strategic communication and practical implementation support for staff during digital transformation.

2.3.4. Data Management & Connectedness

In the first element of the data management and connectedness dimension, enterprises' approaches to data management were explored, including various aspects from basic data storage to advanced analytics capabilities. Respondents were asked about eight different aspects of data management, providing insights into how organisations store, organise, access, and leverage their data assets in the digital age.

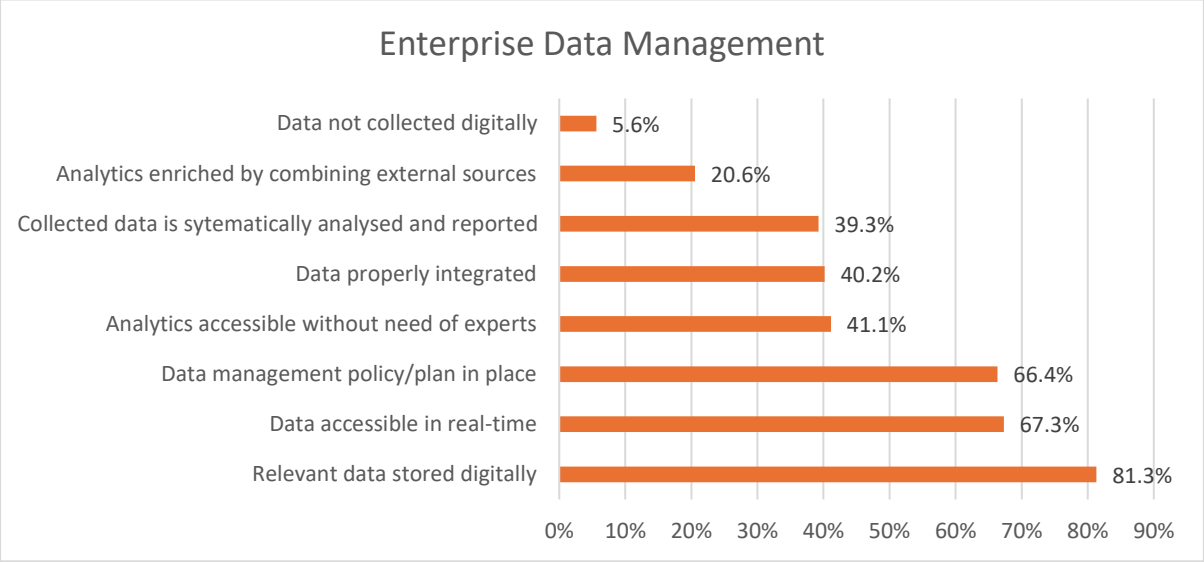


Figure 7 Enterprise Data Management

The results reveal a strong foundation in basic data management practices, with 81.3% of enterprises storing relevant data digitally and only 5.6% not collecting data digitally at all. This high adoption of digital storage is complemented by substantial real-time data accessibility (67.3%) and the presence of formal data management policies or plans (66.4%), suggesting that organisations recognise the strategic importance of proper data governance.

However, there appears to be a significant gap between data storage and data utilisation capabilities. While most enterprises store data digitally, fewer organisations have advanced data management practices in place. Only 41.1% have analytics accessible without expert intervention, 40.2% have properly integrated data, and 39.3% systematically analyse their collected data. Even fewer (20.6%) enrich their analytics by combining external data sources. This pattern suggests

that while enterprises have established basic data infrastructure, many are still working to develop more sophisticated data exploitation capabilities, indicating potential opportunities for improvement in data integration and analytics capabilities.

Continuing the above, the survey delved into enterprises' approach to data security and business continuity. Respondents were asked about six key security measures, providing insights into how organisations protect their data assets and prepare for potential security incidents.

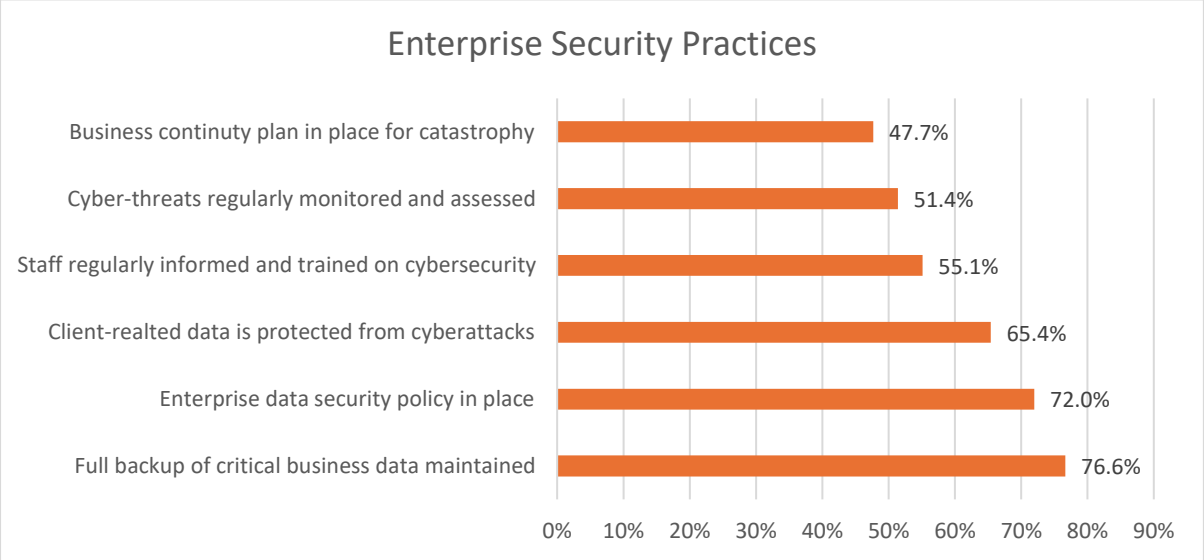


Figure 8 Enterprise Security Practices

The data reveals a clear prioritisation of fundamental data security measures, with 76.6% of enterprises maintaining full backups of critical business data and 72% having established enterprise data security policies. Client data protection from cyberattacks also shows strong adoption at 65.4%, indicating that organisations recognise the paramount importance of protecting customer information.

However, there appears to be a concerning gap in proactive security measures and emergency preparedness. While over half of enterprises (55.1%) regularly inform and train staff on security matters, and 51.4% monitor and assess cyber threats regularly, less than half (47.7%) have a business continuity plan in place for catastrophic events. This suggests that while organisations have implemented basic security infrastructure, many may be underprepared for serious security

incidents or data breaches. The disparity between preventive measures and disaster recovery preparedness indicates an area where enterprises might need to strengthen their security posture to ensure comprehensive protection of their digital assets.

2.3.5. Automation & Artificial Intelligence

The survey examined enterprises' engagement with automation and AI technologies across five key areas. Respondents were asked to indicate their level of adoption for each technology, ranging from operational implementation to consideration for future use, providing valuable insights into the maturity of AI and automation adoption in the business landscape.

The data reveals that BI, Analytics, Recommendation & Intelligent Control systems lead in operational implementation at 23.4%, followed closely by NLP at 20.6% and Computer Vision at 17.8%. This suggests these technologies have gained the most traction in enterprise operations, likely due to their proven business value and relatively mature implementation pathways. Interestingly, while operational deployment is significant, there's also considerable future interest, with 15.9% of enterprises considering implementing BI and analytics solutions.

The adoption pattern shows a clear divide between more established AI technologies and emerging ones. While Robotics & Autonomous Devices and Audio Processing & Synthesis show lower operational implementation rates (3.7% and 7.5%, respectively), they maintain similar levels of consideration for future use (7.5% each). This suggests a cautious approach to newer technologies, with enterprises perhaps waiting for these technologies to mature further or for clearer use cases to emerge. The data also indicates that most enterprises are either fully committed to implementing these technologies or are still in the consideration phase, with relatively few in the intermediate stages of testing or prototyping, suggesting a somewhat binary approach to AI adoption decisions.

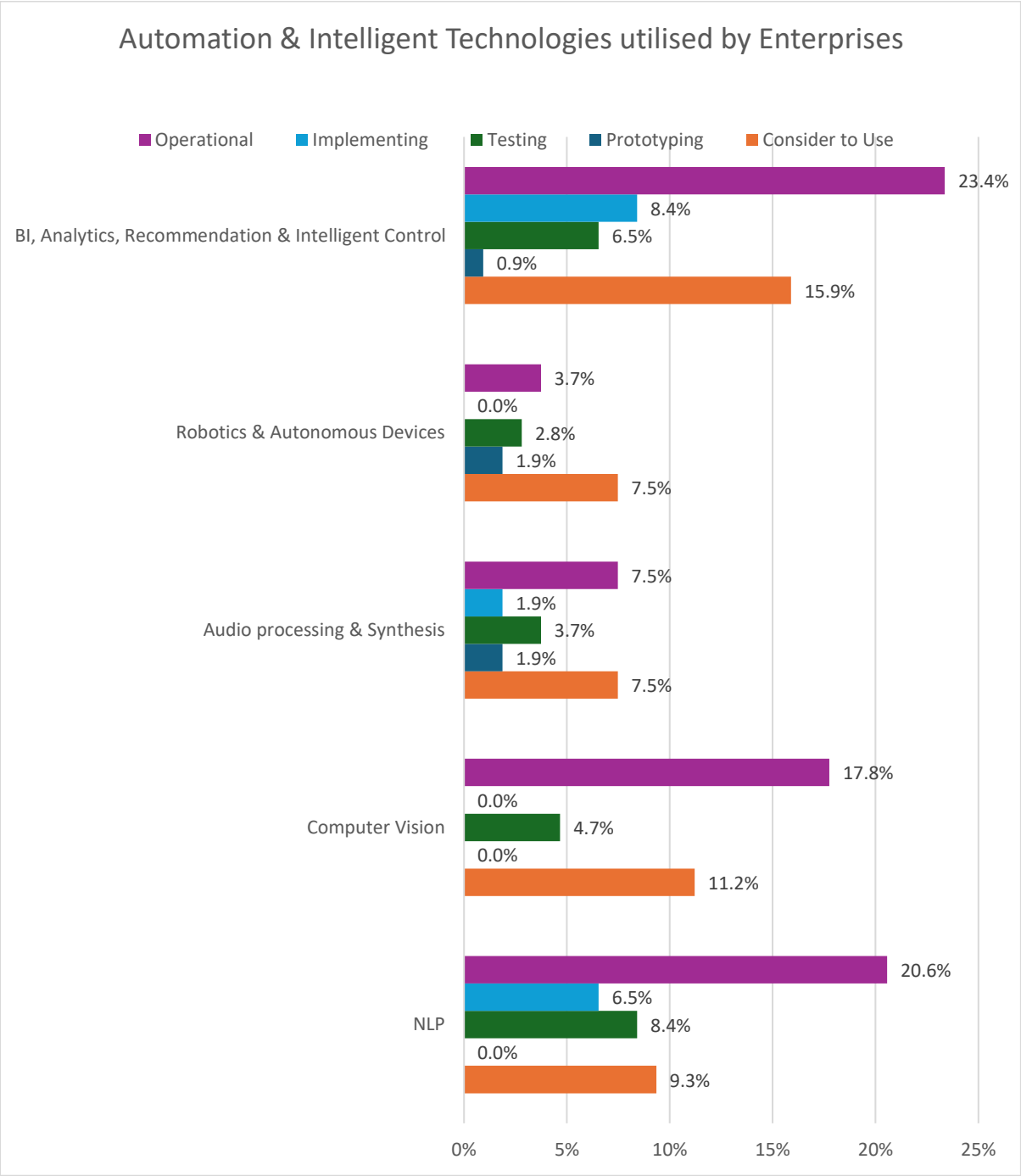


Figure 9 Automation & Intelligent Technologies utilised by Enterprises

2.3.6. Green Digitalisation

The survey explored how enterprises are leveraging digital technologies to advance their sustainability objectives. Respondents could select from ten different sustainability initiatives, providing insights into how the enterprises are combining digital transformation with environmental responsibility and sustainable business practices.

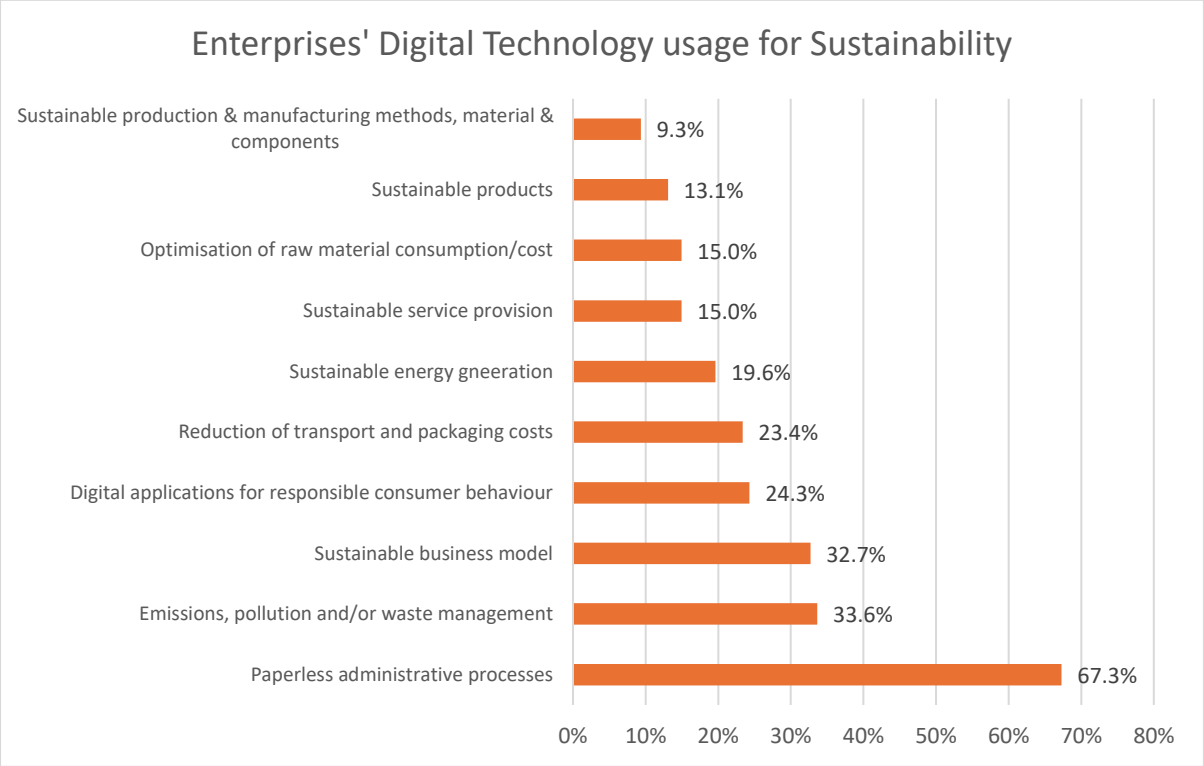


Figure 10 Enterprises' Digital Technology usage for Sustainability

The data shows a clear prioritisation of operational efficiency and administrative sustainability, with paperless administrative processes leading adoption rates at 67.3% of enterprises. This high adoption rate likely reflects both the relative ease of implementation and the dual benefits of cost savings and environmental impact. Environmental monitoring and management also show strong adoption, with 33.6% of enterprises using digital technologies for emissions, pollution, and/or waste management, while 32.7% have implemented sustainable business models.

However, one can notice a significant drop in adoption rates for more specialised or production-focused sustainability initiatives. While 24.3% use digital applications

for responsible consumer behaviour and 23.4% focus on reducing transport and packaging costs, fewer enterprises have implemented sustainable production methods (9.3%) or sustainable products (13.1%). The relatively lower adoption rates for production-related sustainability measures might indicate higher implementation complexity or cost barriers. This suggests that while enterprises are making progress in digitally-enable sustainability, there's significant room for growth, particularly in more complex areas of sustainable production and manufacturing.

The survey delved into how enterprises consider environmental impacts when making digital technology decisions. For five key areas, respondents indicated whether they fully, partially, or do not incorporate environmental considerations into their digital practices, providing insights into the depth of environmental awareness in digital transformation strategies.

The data reveals that environmental considerations are most strongly embedded in business models, with 43.9% of enterprises fully incorporating these concerns and an additional 38.3% doing so partially. Similarly, recycling and reuse of old equipment shows strong environmental awareness, with 43.9% fully implementing such practices and 24.3% partially doing so. This suggests that these areas have become mainstream considerations in digital strategy.

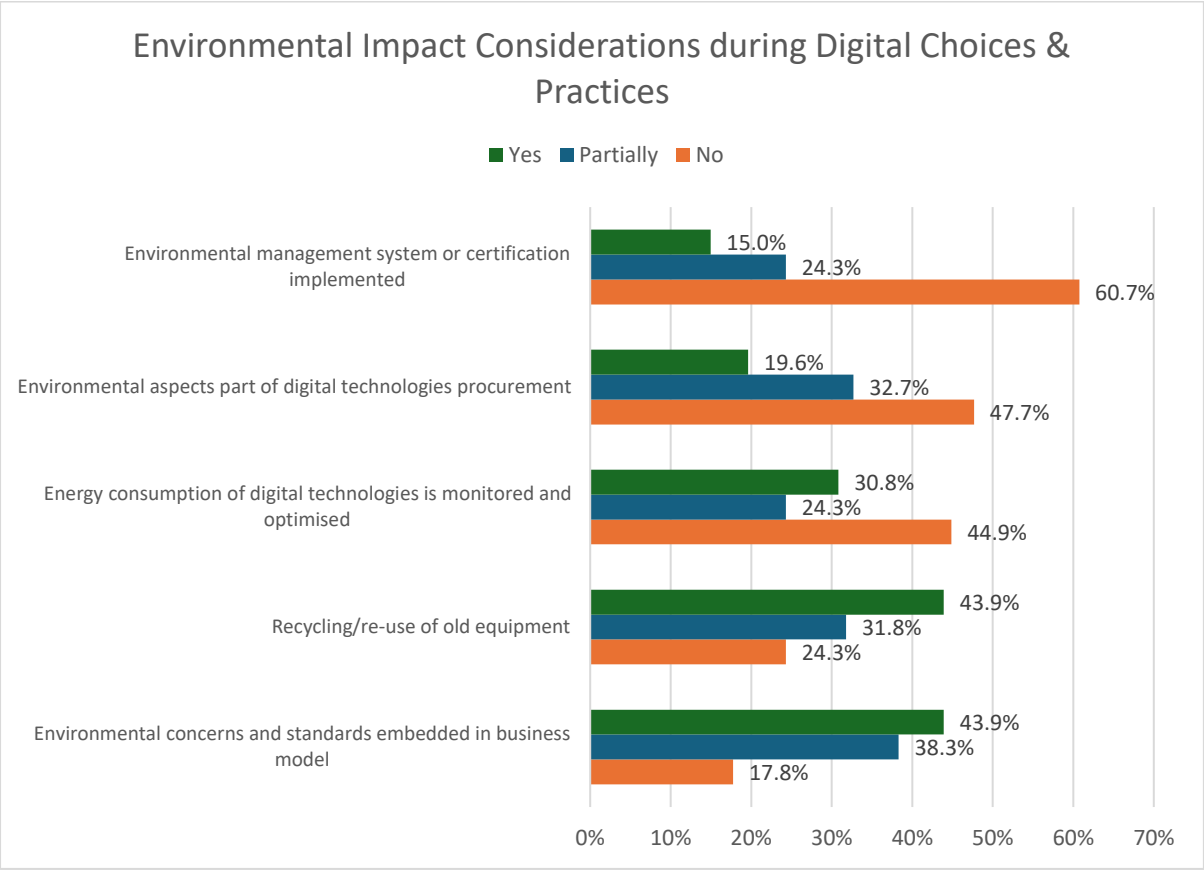


Figure 11 Environmental Impact Considerations during Digital Choices & Practices

However, there's a notable variation in the depth of environmental consideration across different aspects. While energy consumption monitoring shows a moderate rate of full implementation (30.8%), environmental aspects in procurement (19.6%) and environmental management system certification (15%) show lower rates of full adoption. Interestingly, the negatory responses are particularly high for environmental management system certification (60.7%) and procurement considerations (47.7%), suggesting these areas may face implementation barriers or are not yet considered priorities. This pattern indicates that while enterprises are increasingly incorporating environmental considerations into their digital practices, there is still significant room for more comprehensive adoption of environmental management systems and sustainable procurement practices.

3. Recommendations

Based on the comprehensive analysis of digital maturity across multiple dimensions, including technology adoption, skills development, data management and sustainability practices, the following recommendations aim to address key gaps identified in the survey data while building upon existing strengths within the private sector. The goal is to enhance Malta's overall digital maturity through targeted interventions that support enterprises at various stages of their digital transformation journey. Each recommendation is designed to be practical, implementable, and aligned with the broader objective of fostering sustainable digital innovation across the Maltese business landscape.

Strategic Digital Infrastructure & Basic Technology Adoption

The MDIA should develop targeted support schemes and incentives for companies still lacking basic digital infrastructure. With approximately 10% of enterprises lacking fundamental connectivity infrastructure and websites, there exists a critical need to bridge this basic digital divide. The Authority should establish a comprehensive support programme that includes both financial incentives and technical assistance. This could take the form of matching grants for initial infrastructure investments, coupled with expert consultation services to ensure effective implementation. The focus should be on creating sustainable digital foundations that can support future growth and innovation.

Advanced Technology Implementation

Given the significant gap between companies considering advanced technologies and those implementing them, the MDIA should establish focused programmes to bridge this implementation divide. The data shows that while many companies express interest in technologies like IoT, AI and Blockchain, operational implementation remains below 20%. A structured support programme should be created in such a way that includes proof-of-concept funding, technical expertise sharing and risk mitigation strategies. This takes inspiration from the previously established Technology Assessment Recognition Framework, which should serve as the fundamental setup for this approach. This programme should be tailored to

different industry sectors, acknowledging their unique challenges and opportunities in advanced technology adoption.

Data Management & Security

With 81.3% of enterprises storing data digitally but only 39.3% effectively utilising this data, the MDIA should develop comprehensive guidelines for data integration and analytics. These guidelines should focus on practical implementation steps, security considerations and best practices for data-driven decision-making. Additionally, given that only 47.7% of enterprises have business continuity plans in place, the Authority should prioritise the development of sector-specific continuity planning templates and support mechanisms. This should include practical workshops, risk assessment tools and expert consultation services to ensure robust data management and security practices.

Sustainability & Green Transformation

The low adoption rates of sustainable digital solutions, particularly in production methods (9.3%), indicate a need for targeted intervention. The MDIA is recommended to introduce a comprehensive sustainability programme that combines financial incentives with practical support for implementing green digital solutions. This should include guidelines for environmental management system certification, addressing the 60.7% of enterprises without such systems, and practical toolkits for integrating environmental considerations into digital procurement processes. The programme should demonstrate clear business benefits alongside environmental impacts to encourage adoption.

Cross-Cutting Recommendations

To ensure effective digital transformation across all areas, the MDIA should establish a comprehensive support ecosystem. This should include a structured mentorship programme pairing digitally mature enterprises with those at earlier stages, regular knowledge-sharing forums, and sector-specific digital transformation roadmaps. A standardised digital maturity assessment toolkit should be developed to help enterprises identify the gaps and prioritise improvements. This ecosystem approach would create a supportive environment

for continuous digital evolution while addressing the specific needs of different enterprise types and sizes.

4. Concluding Remarks

The comprehensive analysis of digital maturity across Malta's business landscape reveals a complex picture of progress, potential and persistent challenges. While enterprises demonstrate strong adoption of fundamental digital technologies and basic security measures, significant gaps emerge in advanced technology implementation and data utilisation. This dichotomy between basic digital capability and advanced technological adoption presents both immediate challenges and substantial opportunities for targeted intervention and support.

Perhaps most importantly, this assessment reveals that Malta's business community stands at a crucial juncture in its digital transformation journey. The high percentage of enterprises planning future digital and AI implementations, combined with the identified gaps in capabilities and readiness, suggests that decisions and actions taken in the immediate future will have far-reaching implications for Malta's digital economy. The findings provide a clear roadmap for intervention, highlighting specific areas where targeted support and resource allocation could yield significant returns in advancing Malta's digital maturity and competitive position in the global digital economy.

Digital Maturity Assessment Questionnaire for SMEs

Target group: Enterprises (SMEs/Mid-caps)

Stage: T0 (prior to EDIH support start)

MODULE 1: Customer Data

In this module, please provide basic general information about the enterprise that is interested in receiving EDIH support. This data is needed in order to analyse how the enterprise's level of digital maturity compares to that of others in your sector, size category (from micro to large), region and/or country.

M1.1. General Data:

1. Date
2. Name of the enterprise supported by the EDIH:
3. Fiscal registration number (VAT or equivalent):
4. Contact person:
5. Role in the enterprise:
6. Email address:
7. Telephone:
8. Website:
9. Enterprise's staff size
    1. Micro-size (1-9)
    2. Small-size (10-49)
    3. Medium-size (50-249)
    4. Large-size (250 or more)
10. Enterprise's foundation year
11. Country where the enterprise business unit is located:
12. Region (NUTS2) where the enterprise business unit is located: Postal code
13. Full address
14. PIC[1] number (if available, to be filled by EDIH)

M1.2. Sector of Activity:

1. In which sector of activity is your enterprise's business primarily focused? Please select only one option:
    1. Aeronautics & Space
    2. Agriculture and food
    3. Community, social and personal service activities
    4. Construction
    5. Consumer goods/products
    6. Culture and Creative industries
    7. Defence and security
    8. Education
    9. Energy and utilities
    10. Environment
    11. Financial services
    12. Life sciences & healthcare

[1] Participant Identification Code

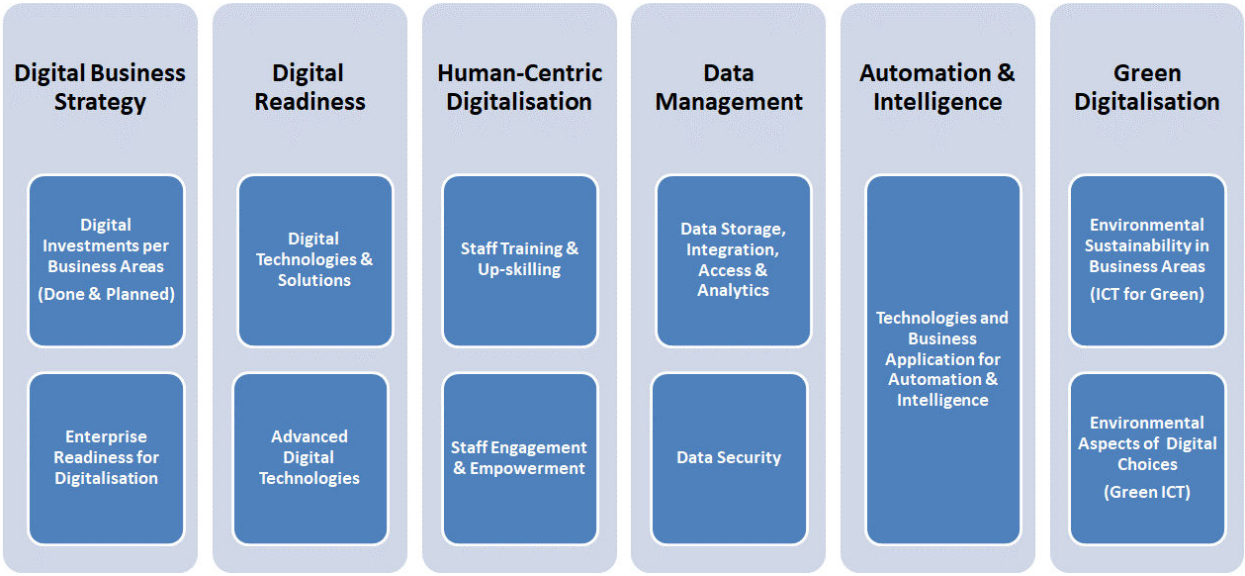
13. Manufacturing
14. Maritime and fishery
15. Mining and quarrying
16. Mobility (incl. Automotive)
17. Public administration
18. Real estate, renting and business activities
19. Professional, Scientific and Technical Activities
20. Telecommunications, Information and Communication
21. Tourism (incl. restaurants and hospitality)
22. Wholesale and retail

2. In addition, in which other sectors of activity is your enterprise's business already operating/wishing to operate? Please select up to three options:
    1. Aeronautics & Space
    2. Agriculture and food
    3. Community, social and personal service activities
    4. Construction
    5. Consumer goods/products
    6. Culture and Creative industries
    7. Defence and security
    8. Education
    9. Energy and utilities
    10. Environment
    11. Financial services
    12. Life sciences & healthcare
    13. Manufacturing
    14. Maritime and fishery
    15. Mining and quarrying
    16. Mobility (incl. Automotive)
    17. Public administration
    18. Real estate, renting and business activities
    19. Professional, Scientific and Technical Activities
    20. Telecommunications, Information and Communication
    21. Tourism (incl. restaurants and hospitality)
    22. Wholesale and retail
    23. Other sector of activity not listed above (please specify)
    24. No other sector

MODULE 2: Digital Maturity

Questions in this module aim to measure the digital maturity of your enterprise. This information will help to characterise the departing point of the digital transformation journey of your enterprise, identifying areas where it might need EDIH support. It will also help to assess the services eventually provided by the EDIH to your enterprise as well as to fine tune the EU policies and financial instruments supporting EDIHs. The following six dimensions will be assessed (applying the scoring criteria detailed in the end page):

Digital Maturity Assessment Framework for SMEs
Source: EC JRC Own elaboration



M2.1. Digital Business Strategy

The questions of this dimension intend to capture the overall status of a digitalisation strategy in your enterprise from a business perspective. They ask about your enterprise's investments in digitalisation per business areas (either executed or planned) as well as company's readiness to embark in a digital journey that might require organisational and economic efforts not yet foreseen.

1. In which of the following business areas has your enterprise already invested in digitalisation and in which ones does it plan to in the future? Please select all options that apply:

	Already invested	Plan to invest
1. Product/Service design (incl. research, development and innovation)		
2. Project planning and management		
3. Operations (production of physical goods/manufacturing, packaging, maintenance, services, etc.)		
4. Collaboration with other internal site locations or other companies in the value chain		
5. Inbound logistics & warehousing		

6. Marketing, sales & customer services (customer management, order processing, helpdesk, etc.) 7. Delivery (outbound logistics, eInvoices, etc.) 8. Administration and human resources 9. Purchasing and procurement 10. (Cyber)security and compliance with Personal Data regulations/GDPR			

2. In which of the following ways is your enterprise prepared for (more) digitalisation? Please select all options that apply:

1. Digitalisation needs are identified and are aligned with business objectives
2. Financial resources (own, loans, subsidies) are identified to secure digitalisation during at least one year
3. IT infrastructures are ready to support digitalisation plans
4. ICT specialists are employed/sub-contracted (or hiring/subcontracting needs have been identified)
5. Enterprise's management is ready to lead the necessary organisational changes
6. Concerned business departments and their staff are ready to support digitalisation plans
7. Business architecture and operational processes can be adapted if required by digitalisation
8. Manufactured products are already commercialised as a service (so-called Servitisation) or supplemented by services enabled by digital technologies
9. Clients' and partners' satisfaction with online services/interactions is monitored regularly (on social media channels, e-commerce operations, emails exchanges, etc.)
10. Risks of digitalisation (e.g. non-planned effects over other business areas) are considered

M2.2. Digital Readiness:

The digital readiness dimension provides an assessment of the current uptake of digital technologies (both mainstream and more advanced technologies) that is valid for both manufacturing and service companies.

3. Which of the following digital technologies and solutions are already used by your enterprise? Please select all options that apply:

1. Connectivity infrastructure (high speed (fibre) internet, cloud computing services, remote access to office systems)
2. Enterprise's website
3. Web-based forms and blogs/forums to communicate with clients
4. Live chats, social networks and chatbots to communicate with clients
5. E-Commerce sales (Business-to-Consumer, Business-to-Business)
6. E-Marketing promotion (online ads, social media for business, etc.)
7. E-Government (online interaction with public authorities, including public procurement)
8. Remote business collaboration tools (e.g. teleworking platform, videoconferencing, virtual learning, business-specific)
9. Internal web portal (Intranet)
10. Information Management Systems (Enterprise Resources Planning, Product Lifecycle Management, Customer Relationship Management, Supply Chain Management, e-invoicing)

4. **Which of the following advanced digital technologies are already used by your enterprise? Please grade all options that apply using a 0-5 scale** (0=Not used, 1=Consider to use, 2=Prototyping, 3=Testing, 4=Implementing, 5=Operational):

1. Simulation & digital twins (i.e. real-time digital representations of physical objects/processes)
2. Virtual reality, augmented reality
3. Computer-aided design (CAD) & manufacturing (CAM)
4. Manufacturing execution systems
5. Internet of Things (IoT) and Industrial Internet of Things (I-IoT)
6. Blockchain technology
7. Additive manufacturing (e.g. 3D printers)

M2.3. Human-centric digitalisation:

This dimension looks at how staff are skilled, engaged and empowered with and by digital technologies, and their working conditions improved, with a view to increase their productivity and wellbeing.

5. **What does your enterprise do to re-skill and up-skill its staff for digitalisation? Please select all options that apply:**

1. Performs staff skill assessment to identify the skills gaps
2. Designs a training plan to train and up-skill staff
3. Organises short trainings, provides tutorials/guidelines and other e-learning resources
4. Facilitates learning-by-doing/peer learning/experimentation opportunities
5. Offers traineeships & job placements in key capacity areas
6. Sponsors staff participation in trainings organised by external organisations (training providers, academia, vendors)
7. Makes use of subsidised training and upskilling programmes

6. **When adopting new digital solutions, how does your enterprise engage and empower its staff? Please select all options that apply:**

1. Facilitates staff awareness about new digital technologies
2. Communicates digitalisation plans to staff in a transparent and inclusive way
3. Monitors staff acceptance and takes measures to mitigate the potential collateral effects (e.g. fear to change; 'always on' culture vs. work-life balance; safeguards to risks of privacy breaches etc.)
4. Involves staff (including non-ICT staff) in the design and development of product/service/process digitalisation
5. Gives staff more autonomy and appropriate digital tools to take and execute decisions
6. Redesigns/Adapts jobs and workflows to support the ways that staff actually would like to work
7. Sets up more flexible working arrangements enabled by digitalisation (e.g. telework)
8. Puts at staff disposal a digital support team/service (internal/external)

M2.4. Data Management and Connectedness

This dimension captures how data is digitally stored, organised within the enterprise, made accessible across connected devices (computers, etc.) and exploited for business purposes, keeping an eye on ensuring sufficient data protection via cybersecurity schemes.

7. How is your enterprise data managed (i.e. stored, organised, accessed and exploited)? Please select all options that apply:

1. The organisation has in place a data management policy/plan/set of measures
2. Data is not collected digitally
3. Relevant data is stored digitally (e.g., office applications, email folders, stand-alone applications, CRM or ERP system, etc.)
4. Data is properly integrated (e.g. through interoperable systems, application programming interfaces) even when it is distributed amongst different systems
5. Data is accessible in real-time from different devices and locations
6. Collected data is systematically analysed and reported for decision-making
7. Data analytics are enriched by combining external sources with own data
8. Data analytics are accessible without need of expert assistance (e.g. through dashboards)

8. Is your enterprise's data sufficiently secured? Please select all options that apply:

1. An enterprise data security policy/set of measures is in place
2. All client-related data is protected from cyberattacks
3. Staff is regularly informed and trained on cybersecurity and data protection issues/risks
4. Cyber-threats are regularly monitored and assessed
5. A full backup copy of critical business data is maintained (off-site/in the cloud)
6. A business continuity plan is in place in case of catastrophic failures (e.g. all data locked by a ransomware attack or physical damage to the IT infrastructure)

M2.5. Automation and Artificial Intelligence

This dimension explores the level of automation and intelligence facilitated by digital means that is embedded in business processes.

9. Which of the following technologies and business applications are your enterprise already using? Please grade all options that apply using a 0-5 scale (0=*Not used*, 1=*Consider to use*, 2=*Prototyping*, 3=*Testing*, 4=*Implementing*, 5=*Operational*):

1. Natural Language Processing incl. chatbots, text mining, machine translation, sentiment analysis
2. Computer vision / image recognition
3. Audio processing / speech recognition, processing and synthesis
4. Robotics and autonomous devices
5. Business intelligence, data analytics, decision support systems, recommendation systems, intelligent control systems

M2.6. Green digitalisation:

This dimension captures the capacity of an enterprise to undertake digitalisation with a long-term approach that takes responsibility and cares about the protection and sustainability of natural resources and the environment (eventually building a competitive advantage out of this).

10. How does your enterprise make use of digital technologies to contribute to environmental sustainability? Please select all options that apply:

1. Sustainable business model (e.g. circular economy model, product-as-a-service)
2. Sustainable service provision (e.g. usage tracking for further reuse by other users)
3. Sustainable products (e.g. eco-design, end-to-end product lifecycle planning, end-of-life & extension of useful life)
4. Sustainable production and manufacturing methods, materials and components (incl. end-of-life management)
5. Emissions, pollution and/or waste management
6. Sustainable energy generation in own facility
7. Optimisation of raw material consumption/cost
8. Reduction of transport and packaging costs
9. Digital applications to encourage responsible consumer behaviour
10. Paperless administrative processes

11. Is your enterprise taking into account environmental impacts in its digital choices and practices? Please grade all options that apply using this scale: *No, Partially, Yes*:

1. Environmental concerns and standards are embedded in the enterprise's business model and strategy
2. There is an Environmental Management System/certification implemented
3. Environmental aspects are part of digital technologies/suppliers' procurement criteria
4. Energy consumption of digital technologies and data storage are monitored and optimised
5. Recycling/re-use of old technological equipment is actively practised by the enterprise