

# RISE typology for technology-enabled social impact in business

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51

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## Abstract

**Purpose** – This study aims to introduce the RISE Typology (Risk-Impact Strategic Evaluation), a novel typology that categorises organisational approaches to technology implementation based on risk tolerance and Social Impact Orientation. It provides strategic guidance for businesses seeking to leverage emerging technologies such as service robots for both commercial and social impact.

**Design/methodology/approach** – This research synthesises literature from service management, robotics and social impact to propose a structured typology for implementing service robots in business environments.

**Findings** – The RISE Typology identifies four distinct organisational personas for implementing robots or other technologies with potential for both risk and social impact: Purposeful Guardian, Transformative Champion, Pragmatic Adopter and Strategic Contender. Each persona represents a unique approach to balancing risk considerations with social impact goals, offering tailored guidance for implementation.

**Originality/value** – The central contribution of this paper lies in the development of the proposed RISE Typology, which acknowledges and addresses the gap between technological innovation, risk management and Social Impact Orientation.

**Keywords** Typology, Social impact Risk Service robots, Sustainable Development Goals (SDG3, SDG8, SDG12)

**Paper type** Conceptual paper

## 1. Introduction

Implementing new technologies is arguably one of the best ways for businesses to contribute to social impact while pursuing organisational goals (Varriale *et al.*, 2024). As technologies like service robots become increasingly accessible, businesses face opportunities to drive innovation that benefits both their operations and society at large (Russell-Bennett *et al.*, 2024). However, businesses face significant implementation risks including performance uncertainties, substantial financial investments and workforce skillset challenges when adopting digital technologies (Varriale *et al.*, 2024). These implementation risks, which can span performance, financial, social, time, sensory/physical and psychological dimensions, require careful consideration as organisations seek to balance technological innovation with sustainable outcomes.

Pursuing innovation is inherently riskier than following traditional approaches (Orellano and Gourc, 2024), and organisations vary significantly in both their tolerance for risk and



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their capacity or desire to achieve social impact. Yet businesses are increasingly seen as sharing responsibility for achieving Sustainable Development Goals (SDGs; [Mahajan et al., 2024](#); [Mahr et al., 2024](#)), and technologies like robots present significant untapped opportunities for aligning business goals with social impact through resource management, waste reduction and enhanced productivity ([Vărzaru et al., 2024](#)).

There is a need to support organisations in making technology implementation decisions that consider both business and societal outcomes, recognising that social impact may not always be the primary goal but brings value whether achieved directly or coincidentally. However, the literature remains fragmented ([Orellano and Gourc, 2024](#); [Vărzaru et al., 2024](#)), providing limited guidance on how organisations can effectively manage implementation risks to achieve these dual outcomes, particularly when those organisations are not primarily governments or social enterprises. Addressing this gap requires answering:

- Q. How can organisations address the risk of disruptive technology implementation to align business and social impact?

## 2. Theoretical foundation

Social impact offers significant benefits to society and business alike ([Aguinis and Glavas, 2012](#)), and technologies such as service robots represent an increasingly accessible mechanism for businesses to pursue both commercial and social goals simultaneously. However, the path to achieving this dual impact is complicated by inherent implementation risks spanning multiple dimensions ([Varriale et al., 2024](#)) and by fundamental differences in how organisations approach both risk and social impact. Existing theoretical frameworks address these elements in isolation, creating a fragmented landscape that leaves organisations without integrated guidance for technology implementation decisions. This section examines this fragmentation, establishes the theoretical building blocks for understanding risk exposure and social impact orientation and positions our typological approach as a response to identified gaps.

### 2.1 *The fragmented landscape: limitations of current approaches*

While foundational research exists on technology adoption, risk management and achieving SDGs, these streams remain fragmented, providing no integrated framework that enables organisations to proactively embed social impact into technology implementation decisions. This fragmentation has tangible consequences: technologies consistently deliver short-term benefits whilst creating delayed social harms including job displacement, wellbeing impacts and privacy violations ([Rahwan et al., 2019](#)), because social sustainability integration is often overlooked unless consciously embedded from the outset ([Qadri et al., 2025](#)). The absence of integrated frameworks therefore represents not merely a theoretical gap, but a practical impediment to responsible technology implementation.

Technology adoption frameworks such as the Technology Acceptance Model and the Unified Theory of Acceptance and Use of Technology are well validated for understanding individual acceptance ([Davis et al., 1989](#); [Venkatesh et al., 2003](#)) and indirectly address some risk dimensions, particularly performance and social risks. However, these models focus on the primary outcome of technology use and are not designed to extend beyond use to consider business and social impact. Their individual-level focus limits their applicability for organisational decision-making that must balance multiple stakeholder interests and longer-term social outcomes.

Risk management frameworks may offer a longer-term perspective suitable for considering potential commercial impact, but do not tend to integrate social impact as a primary consideration, failing to offer a cohesive approach (Orellano and Gourc, 2024). Neither technology adoption nor risk management frameworks alone address both commercial-focused risks and longer-term social impacts. This dual neglect leaves organisations without guidance on how to pursue innovation that serves both business objectives and societal wellbeing.

The business–SDG literature similarly lacks theoretical grounding, with most studies using no theory at all, prompting calls for conceptual and theory-building work (Mahajan *et al.*, 2024). This theoretical absence limits organisations’ ability to systematically align technological innovation with SDGs. Moreover, existing frameworks tend to treat all implementations identically, despite organisations having vastly different risk tolerances and strategic orientations towards social impact. This one-size-fits-all approach fails to acknowledge that organisations pursuing primarily commercial objectives can still generate meaningful social impact, and that excluding these organisations from consideration means losing substantial opportunities for social benefit or, worse, allowing unconscious implementation that may generate harm.

We address calls for guidance on implementing technologies that maximise SDG benefits whilst minimising risks (Värzaru *et al.*, 2024) by developing a framework that integrates risk tolerance and social impact orientation, recognising that technologies create impact through dual pathways: direct or indirect. Following Jaakkola’s (2020) typology conceptualisation approach, we synthesise existing literature into meaningful categories to develop the RISE Typology (Risk-Impact Strategic Evaluation). The typology examines the tension between commercial and broader interests, focusing on how organisations can implement robots to achieve both social and commercial impact whilst managing the risk exposure inherent in technology adoption. The resulting framework foregrounds organisational perspectives, enabling managers to identify their organisation’s strategic position and systematically embed social impact considerations into technology adoption decisions from inception. The four organisational personas represent a unique conceptual contribution, being the first social impact personas focused on organisations rather than end users (Guan *et al.*, 2024). To support practical implementation, we offer the Robot Risk Audit as a complementary tool for assessing risk exposure across multiple dimensions, assisting organisations to move forward with implementation tactics appropriate to their personas.

## 2.2 *Managing risk in technology implementation*

Implementing service robots involves navigating multiple dimensions of risk that influence organisational decision-making and implementation success. Stone and Grønhaug’s (1993) perceived risk framework provides a validated structure for understanding these dimensions, identifying six key risk types: performance (functional), financial, social, time (temporal), sensory (physical) and psychological. This framework is particularly applicable to robot implementation decisions, as it addresses common organisational concerns including products falling short of expectations, stakeholder perceptions, time investment, operational efficiency, physical interactions and psychological impacts (Stone and Grønhaug, 1993). These risk dimensions are especially relevant given that they can prevent organisations from implementing robots, lead to suboptimal implementations or negatively impact achievement of SDGs (Guenat *et al.*, 2022).

Performance risk relates to whether robots will function as expected and deliver on their intended value proposition. Even basic robots such as a \$300 vacuum can pay for themselves quickly through time savings, yet organisations must weigh this potential against uncertainties

about consistent performance over time. Financial risk involves the significant investment required for service robots, including initial acquisition costs, ongoing maintenance and potential costs of failure. The global service robot market is growing at 11.23% annually (Statista, 2024), reflecting increasing recognition of their value proposition, yet the scale of investment remains a substantial consideration for many organisations.

Social risk encompasses how robot implementation influences organisational image and stakeholder perceptions. Research indicates that customers may respond negatively when they perceive robots are implemented solely for cost efficiencies (Belanche *et al.*, 2021), highlighting the importance of ensuring robots are introduced fairly with benefits for all stakeholders. Time risk reflects concerns that robot implementations represent a passing trend with limited long-term value. However, unlike humans who tire of repetitive tasks, robots maintain consistent performance over time, meaning that dismissing robots based on novelty concerns may lead to overlooking substantial long-term benefits.

Sensory or physical risk acknowledges that robots operate in physical environments with varying levels of structure and predictability. Organisations must consider both the robot's operational environment and the people operating within it. Safety considerations begin with design (Zacharaki *et al.*, 2020), requiring appropriate technology selection, proper maintenance protocols and protection against potential damage. Psychological risk encompasses not only job displacement fears but also the changed roles and collaborative environments that employees may experience. Acceptance by both customers and employees is crucial for successful implementation. When deployed effectively, service robots can enhance job satisfaction (Lu *et al.*, 2020) and improve customer comfort in sensitive service encounters (Pitardi *et al.*, 2021).

An organisation's risk exposure represents the aggregate level of risk across these six dimensions for a specific technology implementation in a particular context. This exposure is influenced by factors including the technology's maturity, the complexity of the implementation environment, the organisation's existing capabilities and the specific application area. Risk exposure assessment is therefore context-dependent: the same robot technology may present high risk exposure for one organisation in one application, but low-risk exposure for another organisation in a different context. Critically, organisations vary significantly in their risk tolerance, defined as their willingness and capacity to accept this risk exposure based on factors including organisational size, financial resources, industry context, leadership approach and previous technology experience. This variation in risk tolerance, combined with differences in social impact orientation, creates the foundation for distinct implementation approaches and forms the basis of the RISE Typology presented in Section 3.

### *2.3 Pursuing social impact through technology*

Achieving social impact is no longer the purview of governments and non-profits, with commercial businesses now recognised as essential contributors to social wellbeing (Mahajan *et al.*, 2024). The link between business innovation and the United Nations SDGs is increasingly established (Cordova and Celone, 2019), with research finding that customers prefer to shop with businesses that support SDGs (Barta *et al.*, 2023; Yamane and Kaneko, 2022). Benefits for businesses extend beyond customer preference to include enhanced stakeholder trust, improved operational efficiency and competitive differentiation (Aguinis and Glavas, 2012). We use the SDGs as our operationalisation of social impact due to their universal recognition and comprehensive coverage of social, environmental and economic dimensions. Recent research has summarised the 17 SDGs into seven themes: wellbeing, opportunity, resources, economic, institutions, planet and collaboration (Russell-Bennett *et al.*, 2024).

Service robots offer significant potential to contribute to SDG achievement, with studies finding that robots can already enable 46% of SDG targets (Haidegger *et al.*, 2023) through mechanisms including providing decent work environments and reducing wasted resources (Ivanov, Duglio and Beltramo, 2023). However, a fundamental tension exists in how organisations approach technology implementation for social impact. This tension manifests along multiple dimensions: between immediate commercial gains and longer-term societal benefits, between cost reduction imperatives and social value creation and between organisational priorities and collective wellbeing. Technology offers potential to help resolve these tensions by enabling pathways that serve both goals simultaneously (Fisk *et al.*, 2023), yet realising this potential requires conscious design and implementation choices rather than assuming alignment will emerge organically.

The pathway to social impact through technology implementation exists along a spectrum from direct and intentional to indirect and incidental. Some organisations operate with transformative social missions, deliberately targeting SDG advancement through their technology implementations and measuring success primarily through social outcomes achieved. Others pursue primarily commercial objectives, with social benefits emerging as secondary or unintended consequences of business activities. Both pathways generate meaningful social impact. A cleaning robot deployed purely for cost efficiency still reduces resource consumption (SDG12); a customer service robot implemented for competitive advantage still creates decent work conditions by freeing employees from repetitive tasks (SDG8). These incidental contributions are no less valuable for being unintended and legitimising them encourages broader organisational participation in SDG advancement rather than restricting social impact efforts to organisations with explicit social missions.

Organisations vary significantly in their Social Impact Orientation, defined as the degree to which they are willing and able to contribute to addressing social challenges and advancing SDGs. This orientation is influenced by multiple factors including organisational mission and values, sector relevance to specific SDGs, regulatory environment, stakeholder expectations and the specific capabilities of the technology being implemented. Not all organisations seek to target all SDGs, nor are all organisations equally positioned to influence different goals. The relevance of specific SDGs varies significantly across sectors and contexts, with some organisations having direct pathways to impact multiple goals whilst others may have more limited or indirect opportunities for contribution. Different robot applications similarly offer varying levels of social impact potential, from transformative environmental solutions to incremental efficiency improvements that generate secondary social benefits.

Critically, excluding organisations without transformative social missions from consideration means losing substantial opportunities for social benefit. Transformation often happens indirectly, through the aggregation of many organisations making incremental improvements that collectively generate systemic change. Moreover, failing to engage commercially focused organisations in conscious consideration of social impact risks allowing unconscious implementation that may generate unintended harms (Rahwan *et al.*, 2019). The RISE Typology therefore embraces organisations across the full spectrum of social impact orientation, recognising that advancing SDGs requires engaging all businesses in implementation decisions that consciously consider social outcomes, whether as primary objectives or valued secondary benefits.

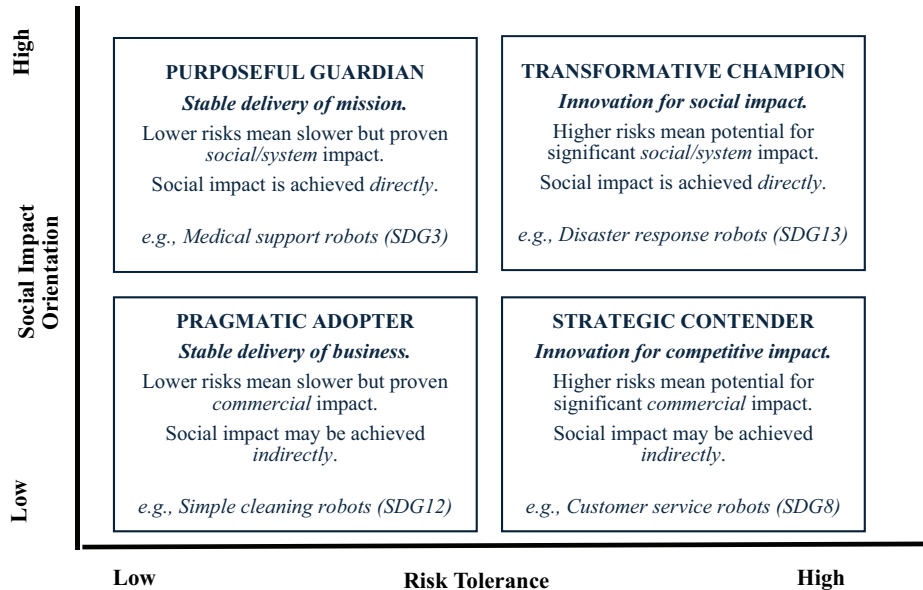
### 3. The RISE Typology: organisational personas for technology-enabled social impact

This section presents the RISE Typology, a proposed approach to achieving social impact whilst working within an organisation's risk tolerance, resulting in four organisational personas for implementing robots for social impact. Drawing on the literature reviewed in

Section 2, particularly the [Stone and Grønhaug's \(1993\)](#) risk framework, social impact implementation research and technology adoption studies, we synthesised these fragmented research domains following [Jaakkola's \(2020\)](#) typology development method. This synthesis involved identifying recurring themes around organisational risk tolerance and social impact orientation that emerged across different literature streams, then organising these into the two key dimensions that distinguish technology implementation approaches. The RISE Typology provides a structured approach for organisations to identify their optimal technology implementation strategy. As illustrated in [Figure 1](#), risk tolerance (horizontal axis) represents an organisation's willingness and capacity to accept uncertainty in technology implementation. Social Impact Orientation (vertical axis) represents the degree to which an organisation is willing and able to contribute to addressing social challenges.

3.1 Dimension 1: risk tolerance

Risk tolerance, derived from an organisation's assessment of its risk exposure across the [Stone and Grønhaug's \(1993\)](#) framework dimensions discussed in subsection 2.2, represents an organisation's willingness and capacity to accept uncertainty in robot implementation. An organisation first evaluates its risk exposure in its particular context (see also Audit Tool in Web Appendix 1). This assessment informs the organisation's risk tolerance, its comfort level with either accepting or actively managing implementation risks. Organisations with low-risk tolerance have identified risk exposure in their context and focus on certainty, pre-validated technologies and slower implementation. These organisations typically engage in extensive pre-implementation testing, establish backup systems and processes and prioritise proven solutions over cutting-edge innovations. This approach aligns with organisational tendencies of more risk-averse companies to prioritise certainty and over



**Figure 1.** The RISE typology  
 Source: Created by the authors

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innovation (Orellano and Gourc, 2024). Organisations with high risk tolerance may face similar risk exposure but are willing to accept greater uncertainty for potentially higher rewards. Their approach involves portfolio strategies to spread risk, rapid iteration principles and strategic partnerships with technology providers to share implementation challenges.

### 3.2 Dimension 2: social impact orientation

Social Impact Orientation represents the degree to which an organisation is willing and able to contribute to addressing social challenges and advancing the SDGs, as discussed in subsection 2.3. This dimension acknowledges that organisations pursue technology implementation along a spectrum from primarily commercial objectives with incidental social benefits to intentionally transformative social goals. Not all organisations seek to target all SDGs, nor are all organisations best placed to influence all goals. The relevance of specific SDGs varies significantly across sectors and contexts, with some organisations having direct pathways to impact multiple goals whilst others may have more limited or indirect opportunities for contribution. This variation reflects findings that organisations commonly engage in new business activities primarily for instrumental reasons such as expected financial outcomes, with social benefit remaining secondary to business objectives (Aguinis and Glavas, 2012). A cleaning robot deployed purely for cost efficiency still reduces resource consumption (SDG12); a customer service robot implemented for competitive advantage still creates decent work conditions by freeing employees from repetitive tasks (SDG8). This perspective aligns with transformative service research, which recognises that service experiences can generate wellbeing outcomes through multiple pathways, both intended and emergent (Fisk *et al.*, 2023).

### 3.3 The four RISE technology implementation personas

Given that organisations differ substantially in their risk tolerance, resources and social impact orientations, we present the intersection of Social Impact Orientation and risk tolerance as distinct personas to help managers recognise their organisation's characteristics and adopt appropriate technology implementation strategies. This persona approach makes business and social impact a conscious part of strategy from the beginning, whether impact is direct or indirect, intentional or incidental. The personas provide actionable guidance tailored to different organisational contexts, goals and mindsets. The four distinct organisational personas are the Purposeful Guardian, Pragmatic Adopter, Transformative Champion and Strategic Contender (see also Table 1).

**3.3.1 Purposeful guardian.** Purposeful Guardian organisations have strong mission orientation and conservative risk profiles yet seek to create significant social impact. They typically have established reputations to protect and/or operate in high-risk industries subject to stringent regulatory oversight, making them cautious in their approach to technological innovation. Their assessment of risk exposure tends to be high due to the sensitive nature of their operations and the significant consequences of implementation failure. Healthcare organisations, educational institutions, social service providers, public sector organisations and established non-governmental organisations are examples of this persona. Purposeful Guardians typically implement robots after engaging in extensive research to identify solutions that have established track records with trusted providers in areas like healthcare (medical support robots, SDG3), education (learning support robots, SDG4) or accessibility (assistive robots, SDG10). These implementations reflect sectors where service robots have demonstrated promise for advancing social wellbeing goals (Haidegger *et al.*, 2023). Their approach to risk involves extensive pre-implementation testing, phased rollouts with multiple evaluation points, comprehensive staff training, backup systems and processes in case of robot malfunction and continual performance monitoring. This risk-aware implementation approach is consistent with risk management

**Table 1.** RISE technology implementation persona profiles

Dimension	Purposeful guardian	Transformative champion	Pragmatic adopter	Strategic contender
Risk tolerance	Low	High	Low	High
Social impact orientation	High	High	Low	Low
Organisational examples	Healthcare organisations, educational institutions, social service providers, public sector organisations, established NGOs	Research-focused organisations, well-funded foundations, social enterprises, forward-thinking governmental organisations, B-Corps.	Small and medium enterprises, resource-constrained organisations, late technology adopters, organisations in traditional industries	Customer-facing businesses seeking differentiation, competitive retail environments, hospitality and tourism businesses, experience-focused businesses, technology industry.
Illustrative robot applications	Medical support robots (SDG3), learning support robots (SDG4), assistive robots (SDG10)	Disaster response robots (SDG11, SDG13), environmental monitoring robots (SDG14, SDG15), advanced medical robots (SDG3)	Cleaning robots (SDG12), simple information kiosks (SDG9), inventory management robots (SDG12)	Customer service robots (SDG8, SDG9), retail assistance robots (SDG8), hospitality robots (SDG8)
Risk management approach	Comprehensive testing, phased rollout, regular monitoring	Portfolio approach, rapid prototyping, flexible frameworks, contingency planning	Mature technologies, financial/efficiency/productivity metrics, exit strategies	Market testing, customer feedback, staged deployment, brand alignment
Social impact focus	Direct	Direct	Indirect	Indirect
Implementation timeline	Medium-term with careful planning and systematic evaluation	Variable with emphasis on learning and adaptation	Short-term with focus on quick wins and immediate gains	Short- to medium-term with focus on competitive advantage

**Source(s):** Created by the authors

practices in high-stakes contexts where safe human–robot interaction is paramount (Zacharaki *et al.*, 2020).

**3.3.2 Transformative champion.** Transformative Champion organisations combine high risk tolerance with ambitious social impact goals. They are innovation-oriented with a long-term vision, generally have access to the necessary resources or are able to secure these through philanthropic or venture funding and have a strong tolerance for uncertainty. Despite potentially high risk exposure in their chosen implementation contexts, these organisations view risk as an acceptable component of pursuing transformative change. This persona is typically embodied by research-focused organisations, well-funded social enterprises or foundations, certain government departments valuing agility in high-stakes contexts, and B-Corporations seeking to leverage technology as part of their core mission.

These organisations may deploy cutting-edge robots in areas like disaster response (SDG11, SDG13), environmental monitoring (SDG14, SDG15), advanced medical treatments (SDG3), renewable energy maintenance (SDG7) and agricultural innovation (SDG2). Their approach to risk involves a portfolio approach to spread risk exposure across multiple initiatives, embracing rapid iteration and “fail fast” principles to learn quickly from setbacks and forming strong technology partnerships to share both risks and learnings. This approach reflects innovation management principles that recognise engaging with risk as a source of valuable learning in pursuit of breakthrough solutions (Orellano and Gourc, 2024). They are more likely than the other personas to focus on innovations with potential for transformative, systemic change rather than incremental improvements.

**3.3.3 Pragmatic adopter.** Pragmatic Adopter organisations have limited risk tolerance and primarily focus on operational efficiency rather than social impact. They typically assess their risk exposure as high due to resource constraints, risk-averse cultures and short-term performance orientation. This persona is common among small and medium enterprises, resource-constrained organisations and organisations in traditional or highly regulated industries. These organisations implement basic robot solutions that can have an incidental rather than intended social impact, such as cleaning robots (SDG12), simple information kiosks (SDG9), standardised industrial robots (SDG8), inventory management robots (SDG12) and basic reception robots (SDG8). Their approach to risk involves selecting mature technologies with demonstrated reliability to minimise risk exposure, and they establish clear financial, productivity and/or efficiency metrics for evaluation. Any technology not proven to offer significant improvements in these areas will be discontinued, hence why these organisations prefer leasing or service models over ownership to limit financial exposure. Pragmatic Adopters create limited direct social impact, with potential contributions to resource efficiency (SDG12) and workplace safety improvements (SDG8).

**3.3.4 Strategic contender.** Strategic Contender organisations combine high risk tolerance with a primary focus on business goals rather than social impact. Despite potentially high risk exposure in competitive, customer-facing environments, these organisations view this exposure as manageable and accept it in pursuit of competitive advantage. They typically operate in highly competitive environments, have a strong end user experience focus and see innovation as part of their core competitive advantage. Research confirms that service robots are increasingly viewed as tools for competitive differentiation (Mahr *et al.*, 2024). These organisations may deploy sophisticated customer service robots (SDG8, SDG9), retail assistance robots (SDG8), personalised service delivery robots (SDG9), innovative hospitality robots (SDG8) and advanced entertainment robots (SDG8). Their approach to risk involves conducting market testing and establishing customer feedback loops to manage risk exposure, forming strategic partnerships with technology providers to share development risks, investing in in-house expertise to build internal capability and implementing staged deployment to ensure implementations enhance their value proposition. Studies indicate that successful robot implementation in customer-facing contexts requires careful attention to customer perceptions of the robot, which can impact how the customer sees the brand and whether they will use the robot or not (Belanche *et al.*, 2021).

Strategic Contenders create primarily economic impact (SDG8), with potential for efficiency improvements (SDG12) and contributions to innovation infrastructure (SDG9). Their social impact is largely incidental to their business goals, yet these incidental contributions represent meaningful progress when aggregated across the commercial sector. For example, robot implementation in tourism can lead to decent work environments (SDG8) while also reducing resource consumption (SDG2, 6, 7, 12 and 13) even if the original intention was purely business efficiency and effectiveness (Ivanov *et al.*, 2023). However, if

social impact proves to offer enhanced customer experience and hence stronger competitive advantage, it may become a more primary focus for this persona.

#### 4. Practical application: the robot risk audit

The Robot Risk Audit (see Web Appendix) translates the risk element of the conceptual framework into actionable assessment questions. While organisations are generally clear on their social impact orientation (given its relationship to the business mission and strategies), the risks associated with implementing a specific technology for a particular purpose are contextually bound and must be assessed independently for each decision. Importantly, this audit tool deals only with risk and from a tactical lens. For a comprehensive strategic framework to guide robot implementation in the organisation, we suggest options such as [Phillips et al.'s \(2024\) Service Robot Innovation Canvas](#).

The Audit assesses risk exposure across the six dimensions from [Stone and Grønhaug's \(1993\)](#) framework: performance, financial, social, time, sensory/physical and psychological. For each dimension, organisations identify whether each risk type is present in their specific implementation context. Second, they evaluate whether identified risks can be adequately mitigated given their resources and capabilities, or whether risks remain unmanageable. After completing the audit, organisations compare assessed risk exposure against risk tolerance to determine their persona and next steps. Organisations may accept higher levels of risk exposure if they have high risk tolerance, positioning themselves as Transformative Champion or Strategic Contender. Alternatively, they may implement additional mitigation strategies to reduce exposure as Purposeful Guardian or Pragmatic Adopter.

#### 5. Discussion and implications

Progressing the SDGs is the business of all businesses ([Varriale et al., 2024](#)). However, despite the benefits ([Aguinis and Glavas, 2012](#); [Mahr et al., 2024](#)), this essential work is impeded by a need for accessible, holistic theory to provide guidance ([Mahajan et al., 2024](#); [Orellano and Gourc, 2024](#); [Varriale et al., 2024](#); [Värzaru et al., 2024](#)). The RISE Typology with its four organisational persona profiles, implementation strategies and the supporting Robot Risk Audit contribute to both theory and practice and directly answer the research question: *How can organisations address the risk of disruptive technology implementation to align business and social impact?*

##### 5.1 Theoretical contributions

The proposed RISE Typology makes three contributions to the literature on service robots and social impact. First, it synthesises fragmented literature streams, bringing together the [Stone and Grønhaug's \(1993\)](#) risk framework with SDG implementation research and technology adoption studies. This integration addresses the theoretical absence noted by [Mahajan et al. \(2024\)](#) in business–SDG research whilst responding to calls for cohesive approaches to innovation risk management ([Orellano and Gourc, 2024](#)).

Second, by conceptualising implementation approaches as organisational personas rather than generic strategies, the typology represents the complex relationship between organisational characteristics, risk perceptions and social impact goals. Not all organisations focus on social impact directly, and all organisations experience risks that are unique to their industry and their specific application of robots. This approach provides a more realistic understanding of how different organisations approach robot implementation decisions in ways tied to their organisational goals and identity. These are the first social impact personas focused on the organisation rather than the users they serve ([Guan et al., 2024](#)). The persona approach acknowledges organisational diversity whilst providing actionable guidance, moving beyond

the one-size-fits-all approaches that have characterised existing frameworks and limited their practical utility.

Third, the typology contributes to the literature on social impact measurement by demonstrating how the SDG framework and risk types can be operationalised to support aligned outcomes for business and society. The typology reduces trade-offs and makes positive impact more likely by supporting the role of all organisations as change catalysts in line with transformative service research (Fisk *et al.*, 2023), and highlighting the value of social impact whether achieved as a primary focus or as an unintended positive outcome secondary to other business goals. This integration of SDGs and risk into an actionable typology and persona categorisation for organisational decision-making for emerging technologies, supported by the Robot Risk Audit to manage identified risks, offers a pathway for researchers and practitioners to evaluate both commercial and social outcomes. We need all businesses to contribute in ways that match their capabilities to support both social and business sustainability, or else risk technology hindering our progress (Guenat *et al.*, 2022).

### 5.2 Practical implications

For managers considering robot implementation, the RISE Typology offers several practical benefits. First, it provides a structured approach to understanding how an organisation's risk tolerance and social impact goals should influence implementation decisions. By identifying which persona best represents their organisation, managers can adopt appropriate strategies and avoid misaligned approaches that can lead to trade-offs between business and social outcomes. Second, the typology helps organisations set realistic expectations for robot implementation outcomes. By understanding the typical timeline, risk management approach and impact potential associated with their implementation persona, organisations can establish appropriate goals and metrics. Organisations can recognise that success looks different across personas: Purposeful Guardians measure success through sustained positive social impact with stakeholder acceptance, Transformative Champions through breakthrough potential and knowledge generation, Pragmatic Adopters through operational efficiency gains and Strategic Contenders through competitive positioning and customer satisfaction. Thirdly, the Robot Risk Audit offers a practical tool for assessing and mitigating specific risks across multiple dimensions and robotic applications. The audit makes visible the specific sources of risk exposure in an organisation's context, enabling targeted interventions rather than broad, generic risk management strategies.

### 5.3 Limitations and future research

Firstly, the RISE Typology and audit tools have been developed through synthesis of existing literature rather than empirical validation. Future research should test the conceptual typology through case studies, surveys and mixed-methods approaches to validate its dimensions and organisational personas, refining the framework based on empirical observations of actual business experiences of risk, social versus business benefit and implementation practices. Longitudinal studies could explore whether the typology accurately predicts implementation outcomes and whether organisations following persona-appropriate strategies achieve better results than those pursuing misaligned approaches. Cross-sector comparative studies could examine whether certain personas are more prevalent in particular industries and whether sector characteristics influence the applicability of different implementation strategies. Secondly, the paper focuses on organisational decision-making rather than implementation outcomes. While the typology provides guidance on appropriate strategies for different organisational contexts, we have not empirically tested whether adherence to persona-appropriate strategies leads to superior outcomes. Future research could investigate the

## 6. Conclusion

The RISE Typology provides a structured approach to aligning robot implementation with both organisational risk tolerance and social impact goals. By identifying four distinct organisational personas, the framework acknowledges varied organisational contexts and supports organisation-centred approaches for achieving social and business impact. Each persona represents a strategic position with distinct strengths. As emerging technologies continue to advance and service robots become increasingly accessible, this typology offers a roadmap for organisations seeking to navigate the complex landscape of technological innovation, risk management and social responsibility. The framework positions technology implementation as an opportunity for mutual gain rather than a zero-sum choice between organisational and societal wellbeing. By recognising that transformation happens through multiple pathways, direct and indirect, intentional and incidental, the typology creates space for all organisations to contribute meaningfully to sustainable development whilst pursuing their organisational objectives.

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### Further reading

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### Supplementary material

The supplementary material for this article can be found online.

### About the authors

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