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Article

Service Research Priorities: Managing and Delivering Service in Turbulent Times

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Abstract

Transformative changes in the societal and service context call out for the service discipline to develop a coherent set of priorities for research and practice. To this end, we utilized multiple data sources: surveys of service scholars and practitioners, web scraping of online documents, a review of published service scholarship, and roundtable discussions conducted at the world's foremost service research centers. We incorporated innovative methodologies, including machine learning, natural language processing, and qualitative analyses, to identify key service research priorities that are critical to address during these turbulent times. The first two priorities—technology and the changing nature of work and technology and the customer experience—focus on leveraging technology for service provision and consumption. The next two priorities—resource and capability constraints and customer proactivity for well-being—focus on responding to the changing needs of multiple stakeholders. Further, we identified a set of stakeholder-wants from the literature and include research questions that tie key stakeholder-wants to each of the four priorities. We believe the set of research priorities in the present article offer actionable ideas for service research directions in this challenging environment.

Keywords

service research priorities, stakeholders, transformative service research, customer experience, frontline service employees, customer proactivity, service operations, service technology, machine learning

Because service shapes the behavior and well-being of individuals and communities and constitutes the bulk of the global economy, the interdisciplinary field of service research has evolved to describe, predict, and manage various facets of the service experience. Periodic large-scale reviews have identified priorities for service scholarship relevant to the changing times (Ostrom et al. 2010, 2015). For instance, Ostrom and colleagues (2015) identified external forces shaping services, such as advances in technology, the proliferation of service innovation, and the growth in big data, and highlighted the need to enhance service experience and improve well-being through transformative service. However, in less than a decade, the world-at-large and services, in particular, are experiencing tectonic shifts resulting from technological innovations, challenges to institutions, demands for social justice, climate change, and a global pandemic, among other disruptions. As these disruptions become more frequent, services will need to evolve to be robust to such persistent turbulence. This requires a comprehensive reexamination and extension of service scholarship and practice. The aim of this article and its companion piece (Field et al. 2021) is to attempt just that, utilizing a multiple-stakeholder lens that integrates the perspectives of those who influence, and are influenced by, the design and delivery of any (commercial or noncommercial) service. We believe that customers, employees, managers, and the community are, and will remain, key stakeholders and have specific wants regarding service content and processes. Our aim is to develop service research priorities (SRPs) that are rooted in, and responsive to, these wants. We also discuss their implications for researching and managing services in turbulent times.

The multiple-stakeholder approach to services is consistent with the application of stakeholder theory in several business disciplines (Parmar et al. 2010). Further, the Responsible Research in Business and Management (RRBM) movement, a growing community of scholars and partners (including organizations such as AACSB and EFMD; www.rrbm.network), emphasizes the value of plurality and multidisciplinary

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collaboration involving stakeholders in the research process as well as conducting research that positively affects diverse stakeholders. Our work is consistent with these trends and is rooted in the assumption that understanding and solving complex problems requires listening to and integrating the voices of those whose life and work experiences shape, and are shaped by, services. In this article, we treat service scholars—individually and in service centers—as important stakeholders and build upon their work, integrating their key insights with the experiences of people who design, deliver, and experience services. Thus, the aims of this article are threefold:

- (1). To identify SRPs and related research questions to catalyze future research.
- (2). To identify stakeholder-wants—that is, the service delivery process characteristics or outcomes desired by stakeholders—for each of the SRPs that are ripe for new insights.
- (3). To attempt to identify under-researched topics and areas of the field for which new insights could make a significant difference to business, organizations, and society.

The distinct aspects of this SRP article rooted in a multiplestakeholder perspective are as follows:

- analysis of global service trends through web scraping, machine learning, and natural language processing (n = 837 pdf documents);
- review of recent service research review articles (57 articles) to identify stakeholder-wants;
- survey input from scholars (n = 206) and practitioners (n = 196) on areas requiring prioritization;
- machine learning, natural language processing, and qualitative analysis of survey data;
- triangulation of input from multiple approaches to identify priorities;
- priorities that encourage significant transdisciplinary research;
- priorities that relate to significant business and societal issues that, if addressed, could improve individual, organizational, and societal outcomes; and
- identification of critical areas that are "ready" for a significant scholarship.

In the sections that follow, we begin by presenting an overview of the multiple methodologies used in identifying the priorities. The organizing framework of the SRPs and related stakeholder-wants follows. We end with a discussion of the individual priorities and several key stakeholder-wants in more detail, identifying potential researchable issues for each.

Method

The SRPs and the stakeholder-wants were identified through a two-phase process conducted from June 2019 to September 2020. Phase 1 included input from three data collection

processes: (1) the results from a large-scale analysis of global service trends identified through unsupervised machine learning and natural language processing, (2) a global survey of service scholars and business practitioners asking them to indicate the most pressing service issues in need of addressing to advance the field, and (3) a review of recent publications in service journals discussing SRPs with a focus on identifying stakeholder-wants that could be the focus of new and important service research efforts. Our iterative approach examined key topics emerging from the analysis of Phase 1 global service trends and primary data to identify research priorities in the Phase 2 survey and roundtables. See Figure 1 for a summary of the research methodology, described in detail below.

Phase 1

Global service trends. Our initial data collection and analysis focused on a systematic approach to identifying potential SRPs based on recent and current online documents regarding global trends and issues. These online documents indicate the collective understanding of key service-related issues from a diversified group of stakeholders, authors, and readers. They provide a snapshot of the discussions related to service challenges in the public sphere.

We utilized web scraping to identify and download documents and reports that were related to global service trends and issues, using clear rules in the searching and filtering processes, resulting in a data set of 837 pdf documents. We then performed the standard procedure of data cleaning and coding to prepare the data for machine learning and applied unsupervised machine learning algorithms to the document set for topic modeling and identification. Topic modeling algorithms analyze the frequency of words within documents to determine the topics to which they most likely belong. Twenty topics were extracted from this analysis. We then used natural language processing to evaluate the sentiments of the topics via a quantitative score that approximates the positive or negative sentiment in the text. Three service experts who are part of the author team worked together to label the topics from the topic modeling results and sentiment scores. Finally, we derived 10 potential SRPs from this analysis. We believe this is the first time such an approach has been undertaken to identify important global service trends and consider this in itself to be a key contribution to service research. Given the complexity and richness of this process, we have included a detailed description (including data collection, data cleaning, topic modeling, sentiment analysis, and topic labeling) in Web Appendix A.

Primary data. A global survey was designed to receive input from service scholars regarding key problems and opportunities to be addressed in the next 5–10 years. This survey was launched in October 2019 and the link remained available through January 2020. The link was distributed broadly to service scholars through a variety of means (e.g., invitations to

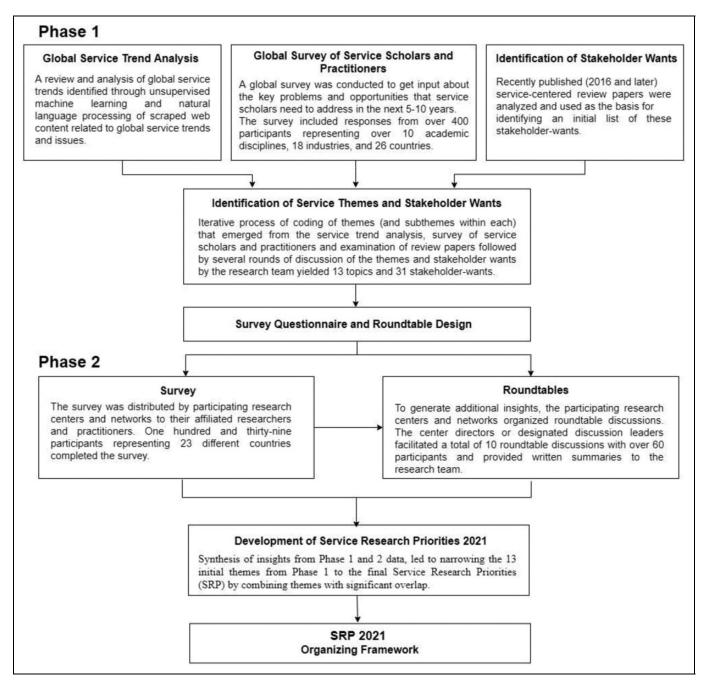


Figure 1. Description of methodology.

Journal of Service Research authors, SERVSIG members, members of service research groups and networks, research and scholarship award recipients across different disciplines) and through the social media accounts of the author team. A similar survey was designed and distributed to business practitioners. To acquire a globally diverse set of responses, we utilized a Qualtrics panel including working professionals from 26 countries. Overall, 206 scholars representing over 10 disciplines and 196 practitioners representing over 18 industries completed the survey in Phase 1. Please see Web Appendix B for characteristics of the Phase 1 respondents. The data for both scholars and

practitioners were analyzed using machine learning and natural language processing analysis following the same procedure as noted above for the global service trends data (see Web Appendix A, Table A3). A qualitative analysis of the responses by two of the coauthors was conducted as a second approach to identify themes that may exist as well as to identify any unique information that could suggest an insightful new path of service research. Thirteen initial themes emerged from our analyses of the global service trends and primary data. These themes formed the basis for potential SRPs in the Phase 2 survey (see Table 1 for a list of said themes).

Table 1. Initial Themes Identified in Phase 1 and Final Service Research Priorities.

Initial Themes (Phase 1)	Final Service Research Priorities
Technology and the changing nature of work Service training and education for inclusion and future in-demand skills	Technology and the changing nature of work
The role of the employee and technology in understanding, creating, and infusing the frontline customer experience and journey	Technology and the customer experience
Resource and capability constraints amid rapidly shifting demand for service	Resource and capability constraints
Consumer proactivity for well- being and responsible consumption	Consumer proactivity for well- being
Designing and orchestrating large- scale, complex, and challenging service ecosystems for transformative impact on society and the planet The impact of climate change on	Large-scale and complex service ecosystems for transformative impact ^a
service and the role of service on reducing or exacerbating climate change	
Service under global conflict and crisis	
Impacts of new service ecosystems and marketplaces (e.g., sharing economy/platforms, experience economy, omnichannel, Amazon, Alibaba) on employee and consumer behavior	Platform ecosystems and marketplaces ^a
Issues and needs of vulnerable populations (e.g., base-of-the-pyramid, aging population) related to service access, inclusion, and opportunities and challenges of serving these populations	Services for disadvantaged consumers and communities ^a
Creating socially just and economically sustainable service ecosystems	
Business survival and service innovation in the face of new technologies, increased competition, and changing customer expectation	(Integrated in other service research priorities)
Data ownership, empowerment, and security	(Integrated in other service research priorities)

^aSee Field et al. (2021).

Stakeholder-wants. Because one of our goals was to identify potential priorities rooted in the wants of multiple stakeholders, we developed a list of such wants that have been mentioned in prior work yet could benefit from more focused attention from the service research community. Service-

Table 2. Stakeholder-Wants Included in Phase 2 Survey.^a

Stakeholder-Wants		
Accessibility	Frictionlessness	Seamlessness
Adaptability	Норе	Security
Agility	Humanness	Shared purpose
Authenticity	Immediacy	Simplicity
Boundaries	Orchestration Social cohesic	
Creativity	Proactivity	Transformation
Dignity	Resiliency	Transparency
Diversity	Respect	Trust
Emotional connection	Sabotage	Waste reduction
Fairness	Safety	Well-being
Fear	•	· ·

^a Based on ratings of novelty and importance, this list of 31 stakeholder-wants (of 560 identified) was determined by the author team as the most promising for stimulating innovative service research. Survey respondents were asked to select and rank their top five stakeholder-wants and suggest associated service research questions critical to investigate in the next 5–10 years.

centered review articles published since 2016 were analyzed and used as the basis for identifying an initial list of these stakeholder-wants. We conducted a systematic search in the Business Source Complete database using the search terms "service" and "research agenda or review" in the abstract, along with specific journal names that publish service research (i.e., Journal of Service Research, Journal of Service Management, The Service Industry Journal, Journal of Services Marketing, Journal of Service Management Research, Journal of Business Research, Journal of Operations Management, Production and Operations Management, Manufacturing & Service Operations Management, and International Journal of Operations and Production Management). The search returned 117 articles published between 2016 and 2020. Members of the author team then contributed a list of relevant review articles, some of which (e.g., forthcoming articles or other journals) did not appear in the Business Source Complete results. One of the coauthors read the abstract and introduction for each article to determine whether it met the criteria for inclusion as a servicecentered review article. On this basis, a total of 57 articles were chosen as the source documents for compiling a list of stakeholder-wants.

Each article was reviewed independently by two members of the author team, who were instructed to list the stated or implied stakeholder-wants. These lists were aggregated across all articles, and 560 unique stakeholder-wants were identified. To narrow the list to the most promising stakeholder-wants for stimulating innovative service research, the members of the author team rated stakeholder-wants on a 5-point Likert-type scale according to both novelty and importance $(1 = not \ at \ all, 5 = extremely)$, resulting in a list of 43 stakeholder-wants rated at least three on both novelty and importance by at least five members of the author team. After the second round of voting and further discussion, a final list of 31 stakeholder-wants was

included in the Phase 2 survey (see Table 2 for a list of these stakeholder-wants).

Phase 2

Phase 2, which consisted of a survey and roundtable discussions, was completed in collaboration with 16 university-based interdisciplinary service research centers and networks representing five global regions (see Web Appendices B and C). The centers and networks distributed the survey to the affiliate members and hosted roundtable discussions during the summer of 2020.

Survey. The themes and stakeholder-wants identified in Phase 1 were incorporated into the survey that asked participants to (1) select and rank the three most important and underresearched themes that were critical to address in the next 5–10 years, (2) discuss any specific issues and research questions related to the top three themes selected, and (3) suggest any additional topics and research questions. The participants followed a similar process to select, rank, and provide input on five (of 31) stakeholder-wants they deemed most critical to investigate in relation to service in the next 5–10 years. One hundred and thirty-four scholars and five practitioners representing 23 different countries completed the survey (see Web Appendix B for characteristics of the Phase 2 respondents). A list of Phases 1 and 2 contributors who agreed to be acknowledged can be found in Web Appendix C.

Roundtables. As the second step in Phase 2, the participating service research centers and networks organized roundtable discussions following a moderator guide provided by the research team. The goal of the roundtable discussion, which was structured around the survey questions, was to generate additional insights on the topics through a collaborative discourse. The center directors or designated discussion leaders facilitated a total of 10 roundtable discussions with over 79 participants and provided written summaries to the research team (see Web Appendix B, Table B6 for detailed information on the Phase 2 roundtable contributing centers and networks).

Using both Phase 1 and 2 data, we narrowed the 13 initial themes to seven SRPs by combining themes that significantly overlapped with each other in terms of the issues raised and questions proposed (see Table 1 for the mapping of the themes to the SRPs). Two of the initial themes—service innovation and data management—were not included as separate SRPs because they span across, and are integrated within, the seven SRPs. For each SRP, the research team determined a set of three or four subthemes gleaned from the data, consisting of issues that, while by no means exhaustive, were raised repeatedly and judged to be in need of further research. The research team considers these subthemes to be among the ones with high-impact research opportunities. From the machine learning and qualitative analyses of the Phase 1 responses and the theme-specific responses in Phase 2, the research team identified understudied, unanswered, and important questions associated with each SRP. To determine the top stakeholder-wants

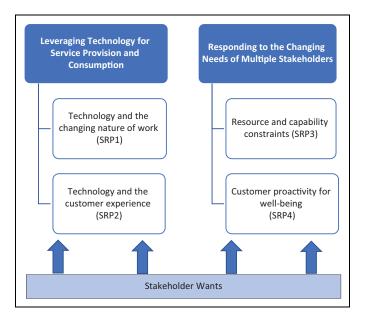


Figure 2. An organizing framework for service research priorities in turbulent times.

for each SRP and generate questions at the intersection of SRPs and stakeholder-wants, the stakeholder-wants in Phase 2 were coded according to their relevance to each of the SRPs. Key research questions related to notable stakeholder-wants are included where appropriate for each SRP.

Service Research Priorities

Utilizing the multiphase and multi-stakeholder approach described in the previous section, we identified SRPs to guide interdisciplinary service scholarship. In this article, we have divided these SRPs into two key service challenge pillars: leveraging technology for service provision and consumption and responding to the changing needs of multiple stakeholders. The two SRPs in the leveraging technology for service provision and consumption pillar are (1) technology and the changing nature of work and (2) technology and the customer experience; the two SRPs in the responding to the changing needs of multiple-stakeholders pillar are (3) resource and capability constraints and (4) customer proactivity for well-being. The SRPs and their pillars sit on a base of stakeholder-wants that inform specific research questions. The complete framework is shown in Figure 2. In the following subsections, we describe the four SRPs and subthemes within each SRP, linking these with key stakeholder-wants and proposing questions to instruct future scholarship. A summary of the SRPs and research questions appears in Table 3. A third pillar, designing sustainable service ecosystems, emerged from our data, but the three priorities under this pillar require a broader lens and a longer-term focus; these are discussed in-depth in Field et al. (2021).

 Table 3. Service Research Priorities, Subthemes/Topics, Top Stakeholder-Wants, and Research Questions.

Priority	Subthemes/Topics	Top Stakeholder-Wants	Questions
Technology and the changing nature of work SRPI	Managing the dynamic interactions between employees and digital technologies for the codelivery of services	Humanness, emotional connection, and well-being	How does the specialization in emotional versus cognitive tasks affect the efficacy of employee efforts? Under what circumstances does a narrower role improve or worsen employee performance and satisfaction? As technologies continue to advance, will jobs be eliminated or created? If eliminated, will there be a constraint for full substitution of employees? What will be the roles of employees in the future (e.g., enablers, innovators, differentiators)? If employees and machines are to coexist in the workplace of tomorrow, how should the former be prepared or trained to align their efforts with the latter? Will the adoption of robot technologies necessarily decrease emotional connectedness? Are there conditions under which robots, augmented and virtual reality, and other technologies could produce more emotionally satisfying interactions than with human service providers? If so, what are the negative sides to establishing emotional connections
	Changes in social architecture within service organizations		to technologies rather than employees from the perspectives of the both the customer and employee? Can jobs created with immediacy in mind be designed to remain meaningful and empowering for employees? How are the relationships among workers and customers structured and managed when algorithms are used for matching and monitoring tasks and robots become coworkers? What are the ethical boundaries around substituting technologies for human workers and who should set said
			boundaries? What types of training and education should be implemented to prepare managers to understand and operate within these ethical and role boundaries? How can work be designed to optimize the alignment between the technical and social subsystems within which FLEs operate? As an unanticipated shock to previous models of alignment, to what extent will the abrupt technology-driven changes in
	Technology effects on employee performance and well-being		how work is organized and carried out during the COVID-19 pandemic persist and evolve over time? What are the implications of changes in work organization and relationships on perceptions of fairness at both the organizational and individual levels? How does the individualization of labor impact worker well-being and what are the spillover effects on customers and business outcomes? How do changes in transparency related to worker efforts and outcomes influence their attitudes, behaviors, and
			performance? Which negative outcomes are most closely tied to technology- mediated work arrangements, such as online and remote models? Moreover, how can technologies better support employee performance and physical and psychological safety rather than engender stress and anxiety? What impact do monitoring technologies have on employer- employee trust? What are the effects on employee well-being of potentially or actually being replaced (partially or fully) by robots and other technologies?

Table 3. (continued)

Priority	Subthemes/Topics	Top Stakeholder-Wants	Questions
Technology and the customer experience SRP2	Critical importance of connections, evolving actor roles, and context in the customer experience	Humanness, emotional connection, well- being, frictionlessness, immediacy,	What capabilities do customers or service employees require to effectively participate and in engage in multiactor settings involving human and increasingly nonhuman interactions? How can service productivity be conceptualized and measured in this context?
	·	authenticity, and diversity	What new ways of tracking "service performance" need to be established with corresponding metrics and analytical procedures not limited to dyadic exchanges but including all actors along the journey?
			How can firms integrate digital, physical, and social elements to design seamless experiences?
			As service providers continue to raise the bar for quick (often technology-enabled) service fulfillment, how does this impact future customer expectations and evaluations of service system performance?
			What new methodologies, tools, and service blueprints can help firms design CX journeys?
			How can firms use machine learning to manage customer
			experience through the service journey?
			How does the connectivity among people, things, data, and processes arise in situ, particularly in idiosyncratic contexts, for individual customers and how do we optimize the
			customer experience accordingly? How can firms strengthen the diversity, equity, and inclusion of the resulting customer experiences so that they resonate personally with each customer?
			How can services be designed to optimize the experience for each customer, taking into account customer expectations, orientations, and lived experience?
			Are consequences of target marketing that may leave disadvantaged groups worse off also embedded in
	Unintended consequences		personalized or contextualized customer experiences? When management becomes automated, how will that
	of technology in the customer experience		influence downstream customer experience? How will supervision automation influence the future
			relationships between FLEs and consumers?
			How could the design of machine learning technologies be optimized and reduce the potential for cultural bias?
			Could service tools such as service blueprinting increase the humanness of Al-enabled service technology?
	Maintaining humanness and human touch in the		How can humans and AI can best express emotions using robots and other technologies?
	age of robotization and automation		What are new ways to capture customer emotions (such as through wearable and mobile technologies) and customer actions at myriad touchpoints in real time?
			How can we understand consumer reactions to emotionally intelligent Al robots as these technologies emerge? How will robots and Al assistants respond to customer
			emotions? To what extent can (and should) technology be viewed as
			human? In what contexts does humanness enhance, or detract from, the CX?
			While machines can be taught to reason, will machines be able to make moral judgments regarding ethical choices?
	Increasing well-being and reducing ill-being in the age of technologies		Will the radical implementation of technology lead to groups of people living their lives at different speeds? Will this result in a "digital divide?"

 Table 3. (continued)

Priority	Subthemes/Topics	Top Stakeholder-Wants	Questions
	Customer experience: frictionless, immediate, and authentic		What are the underlying processes/mechanisms, contexts, and individual differences that drive people toward or away from technology? To what extent do digitally disadvantaged consumers experience restricted choice and negative impacts? What are the influences of emerging technologies on customer and employee well-being? How can unnecessary roadblocks and pain points be minimized in the customer journey? How do customer immediacy expectations differ between online and off-line services and what are the spillover effects from online immediacy experiences to off-line expectations? What is the impact of "reference expectations" or "expectation spillover" on immediacy from other industries or contexts; will customers expect companies to have sameday delivery like Amazon or doctors to have a reservation system like OpenTable? How much information are customers willing to provide to get immediate service; what is the privacy and immediacy tradeoff? Will data and technologies intended to capture customer needs, expressed emotions, preferences, and even personality lead to more authentic customer experiences?
			How do intrusive yet necessary technologies (e.g., for monitoring patient vital signs) impact patients' psychological
Passures and	Canabilities to anticipate	A deptability agility	and physical well-being?
capability e constraints c c SRP3 d	Capabilities to anticipate environmental, social, cultural, and demographic shifts	Adaptability, agility, and resiliency	What capabilities are needed to meet customer wants across generations that share different sociocultural values and act differently as customers? Does building these capabilities require a workforce that mirrors the customer base? How can employee creativity be leveraged as a dynamic capability? What is the role of organizational ingenuity as a mechanism for adaptability in resource-constrained environments? What capabilities are needed for service recovery from the more frequent external shocks organizations are facing? What are the important capabilities to anticipate these shifts and how can they be developed (e.g., the not-always-realized potential of Al algorithms to reduce biases such as racism
	Novel resource configurations for		and ensure fairness)? How can physical and digital ecosystems be designed for quick reconfiguration and scaling in response to highly volatile
	extreme flexibility		demand and resource constraints? How can businesses, governments, and global institutions (e.g., NGOs) share resources to attain common goals? How and by whom should these resource ecosystems be orchestrated?
			(How) can traditional supply chains be designed to be quickly reconfigured to balance supply and demand during periods of both unexpected resource constraints and demand shocks (e.g., restaurants selling staple foods during the COVID-19 pandemic and shortages at grocery stores)?
			How can organizations move seamlessly among employees, self-service, robots, and digital resources to meet demand depending on resource availability (e.g., food banks moving to a self-service model when volunteers are not allowed to work during pandemic lockdowns)?
			How can platform models be further developed to provide extreme flexibility?

Table 3. (continued)

Priority	Subthemes/Topics	Top Stakeholder-Wants	Questions
			How can traditionally structured organizations be restructured to enable extreme flexibility in resource configurations and deployment? How can these questions be answered for ecosystems of
	Service performance in highly uncertain environments		resources owned and managed by disparate actors? How does the exponential growth in digital data collection, analysis, and use enable the development of new metrics that may be more appropriate for measuring and driving performance improvement in this environment?
			(How) can services be proactively delivered in rapidly changing environments where the past may not be as predictive of the future? What metrics are needed to gauge the feasible and or optimal level of proactivity?
			How can organizational stakeholders ensure transparency and traceability during periods of rapid change (e.g., using blockchain technology)?
			How can technologies such as artificial intelligence and digital twins be used to drive performance on these metrics?
			Can Lean Six Sigma or other process improvement approaches be considered dynamic capabilities in highly uncertain service environments?
_	_		How should the performance improvement process be managed when the relevant performance metrics are rapidly changing due to social, cultural, and demographic shifts?
Customer proactivity Consumer responsibility for well-being for personal health and welfare	for personal health and	Accessibility, creativity, transparency, trust, and waste reduction	Even if consumers have access to services (e.g., health care, financial, education), what are the barriers to utilizing these services and how can these barriers be reduced? How can consumers be educated to use these services
		correctly? How can citizens, patients, consumers, and customers stop viewing themselves as passive receivers of personal health and welfare services and instead become active prosumers of the resources that organizations are providing? How do safety and security concerns affect the willingness of consumers to be proactive for personal health and welfare. How can dignity and fairness be designed into service processes.	
			customers engage in for personal health and welfare? How can emotional connections with customers be created through self-service technologies for these services?
			How can providers trust the quality of consumer self-service for personal health and welfare?
		Who or what should orchestrate the service process when the consumer is taking a greater role in its provision?	
		How can the service ecosystem for disease management be designed to be robust to personal health choices (e.g., wearing masks and social distancing during COVID-19 pandemic)?	
		How is respect for others related to these choices? How does social cohesion impact these choices and what are the impacts of these choices on social cohesion?	
			What is the role of complex human emotions, such as hope, in cocreation of service solutions aimed to increase consumer health and financial well-being?
	The role of consumers in sustainability efforts		What role does emotional connection play in fostering a sense of community (e.g., respect for others) and hope for a better future that results in consumer sustainability efforts?
			How does transparency in service processes and their (environmental) effects impact customer engagement in sustainability efforts?

Table 3. (continued)

Priority	Subthemes/Topics	Top Stakeholder-Wants	Questions
			How can gamification help motivate customers to engage in waste reduction?
			How can waste be reduced without the feeling of burdening the consumers?
			How can consumers be educated on waste reduction without the feeling of being chastised or corrected?
			What value do consumers give to sustainability over the satisfaction of their other needs?
			How can citizens' creativity, including their problem-solving
			skills and willingness to participate in addressing sustainability challenges, be harnessed by policy makers and firms?
	Consumer production,		Why have transparency and traceability in service supply chains
	consumption, and detection of harmful (or		not received equivalent attention in the supply chains of physical goods? What does transparency mean in these two
	value-destroying)		distinct contexts?
	services		How important are ethical practices in the service value chain to customers and other service stakeholders? More generally, what is the role of ethics in considerations of value
			creation?
			How can concepts such as ethical risk analysis, which advocates
			integrating ethical considerations as part of risk assessment of policy decisions, be integrated in service design and evaluation?
			How should existing frameworks be updated for evaluating
			quality and managing trust and loyalty in service relationships for these types of services?
			What are the implications of active reputation management for service providers?
			How can fraudulent and deceptive interventions in public and private service processes be prevented?
			How can consumers and providers avoid becoming victims and unintentional contributors to value-destroying services?
			Once undermined, how can trust in service relationships be regained?
			What are the roles of the aggregate consumer voice and the voice of social influencers in replacing expert advice in specialized services?
			How do consumers evaluate the service quality, credibility, and authenticity of providers in the digital age?
			How should the trade-off be managed between the freedom of speech and protection of truth, consumer activism, and
			service sabotage in an era of disinformation?
			How can technology, which has enabled value destruction such as the spread of disinformation, be used to detect and counteract it?
			Which (smart) services can help overcome fake news and conspiracy theories to stabilize the social cohesion of
			societies? How effective are such efforts in curbing disinformation, elevating credible sources, and rebuilding consumer trust in institutions, organizations, governments,
			media, and individuals?

Leveraging Technology for Service Provision and Consumption

Service research Priority #1: Technology and the changing nature of work. Technological innovations typically involve augmenting

or substituting the role of frontline employees (FLEs) in service delivery to improve customers' experience and reduce costs (De Keyser et al. 2019). While innovations such as self-service technology, artificial intelligence (AI), and service robots can significantly reshape service processes and improve

customer experiences of accessibility, responsiveness, and reliability, these also carry the potential risk of replacing humans as the central actors in service delivery (Breidbach et al. 2018; Frey and Osborne 2017; Mortensen and Pissarides 1998). The Phase 1 analysis of scholar and practitioner comments and global trends similarly surfaced these double-edged effects and identified "technology and the changing nature of work" as a key SRP. Specifically, our data highlighted three areas in need of further theoretical and empirical work: (a) managing the dynamic interactions between employees and digital technologies for the codelivery of services, (b) changes in the social architecture of work as a result of technology, and (c) the influence of technology on FLE performance and wellbeing. Humanness, emotional connections, and well-being emerged from the Phase 2 analyses as top stakeholder-wants tied to a future research agenda for this priority.

Managing the dynamic interactions between employees and digital technologies for the codelivery of services. Recent theoretical work explores the complementarity between technology and FLEs and suggests the need to position "tech and touch" in ways that maximize value for customers (Huang and Rust 2018). For instance, Bowen (2016) identified four FLE roles—innovators, differentiators, enablers, and coordinators—each of which requires complementary interactions between humans and machines. Similarly, Solnet et al. (2019) proposed a model wherein the service organization's shared beliefs about relationships (communal sharing vs. market pricing) interact with customers' preferences (transactional vs. relational) to create four distinct service configurations, each emphasizing a varying degree of complementarity between FLEs and technology. Likewise, some scholars (Huang and Rust 2020; Wirtz et al. 2018) have suggested that services requiring the use and display of complex human emotions might be suited to the utilization of FLEs while those high in cognitive complexity can be driven by robots, thus foreshadowing a combination of the two. And yet, how does the specialization in emotional versus cognitive tasks affect the efficacy of employee efforts? Under what circumstances does a narrower role improve or worsen employee performance and satisfaction? As technologies continue to advance, will jobs be eliminated or created? If eliminated, will there be a constraint for full substitution of employees? What will be the roles of employees in the future (e.g., enablers, innovators, differentiators)? Further, if employees and machines are to coexist in the workplace of tomorrow, how should the former be prepared or trained to align their efforts with the latter? To be sure, employee training will need to be more oriented toward applying skills that are unique to humans (e.g., emotional expression) in synchrony with those where technology has an upper hand (e.g., complex cognition). Formal education in yoking one's efforts to technology is a gap that can probably be filled by primary and secondary educational institutions, as well as organizations.

Another approach toward providing efficient and accessible service, albeit with a "human face," is the use of automated

social presence (ASP), defined as the "extent to which machines (e.g., robots) make consumers feel that they are in the company of another social entity" (van Doorn et al. 2017, 44). Being served by human-like robots might also elicit discomfort and compensatory behaviors among customers (Mende et al. 2019), suggesting that a human touch augmented by technology remains the optimal mode of service delivery, especially in contexts that require the execution of emotionladen tasks and when customers expect relationships instead of impersonal transactions. However, will the adoption of these technologies necessarily decrease emotional connectedness? Are there conditions under which robots, augmented and virtual reality, and other technologies could produce more emotionally satisfying interactions than with human service providers? If so, what are the negative sides to establishing emotional connections to technologies rather than employees from the perspectives of both the customer and employee? This is also an opportunity for scholars to emphasize human diversity, with individual differences in preferences for interaction with other humans as opposed to technology. The future of service delivery cannot be one of undifferentiated and homogenous services rendered by employees or technology. Rather, it will surely need to be rooted in inclusiveness.

Changes in social architecture within service organizations. Technological innovations allow organizations to provide around-the-clock service to customers through the use of live chats, chatbots, and (often outsourced) call centers. While companies are deploying such technologies to serve the increasing expectations of on-demand customers, the unrelenting push for immediacy puts immense pressure on service processes to keep up (Lashbrooke 2016). Yet, can jobs created with immediacy in mind be designed to remain meaningful and empowering for employees?

Moreover, platform-based services have reduced or eliminated the need for managers and replaced traditional human resource management practices such as workforce planning and rewards/recognition systems with algorithms. Underlying these developments is a decades-old trend: the replacement of formal employment arrangements characterized by open-ended inducements and social exchange by short-term transactional contracts (Tsui et al. 1997). These developments have led scholars to argue that worker-ecosystem relationships characterized by multiple (often simultaneous) contracts between workers and customers will supplant the more traditional employeeorganization relationships in the future (Subramony et al. 2018). How are these relationships structured and managed when algorithms are used for matching and monitoring tasks and robots become coworkers? What are the ethical boundaries around substituting technologies for human workers and who should set said boundaries? What types of training and education should be implemented to prepare managers to understand and operate within these ethical and role boundaries?

Technology also helps overcome physical and geographical barriers between workers and their customers. For instance, the widespread availability of teleconferencing tools has made remote work ubiquitous, especially during the COVID-19 pandemic. Key challenges associated with this development include (a) managing worker behaviors without direct physical supervision and the need for so-called face time; (b) building effective teams that transcend the barriers of function, geography, and individual differences; and (c) consistently communicating a common set of organizational priorities without the benefit of face-to-face interactions. We suggest that while technological innovations have streamlined service processes, it is essential that work be designed to optimize the alignment between the technical and social subsystems within which FLEs operate (Schneider and Bowen 2019). More research is needed on how to achieve this alignment. As an unanticipated shock to previous models of alignment, to what extent will the abrupt technology-driven changes in how work is organized and carried out during the COVID-19 pandemic persist and evolve over time?

Technology effects on employee performance and well-being. Technological innovations have made the boundaries between service providers and recipients more permeable. In the era of "gigs" and platform-based services, the notions of what is an organization and what constitutes employment are becoming blurry and ambiguous (Cappelli and Keller 2013). But one trend is clear: Technology is accelerating the "individualization" of labor, shifting the costs of service production away from the organization (that traditionally designed work roles, allocated tasks, and implemented compensation systems) toward workers themselves (Fleming 2017). While this trend facilitates flexible work and portfolio-based, self-managed careers (Sullivan and Baruch 2009), it also creates critical issues for workers, including job insecurity and professional isolation. Gig workers are heavily dependent on customer demands for their services and do not have formal organizations or workgroups to count on for social support. Dispassionate algorithms, often lacking transparency, determine what these workers should do, how to do it, and the compensation they deserve for their effort. This leads to lower quality of life and emotional or physical exhaustion (Wood et al. 2019). What are the implications of these changes in work organization and relationships on perceptions of fairness at both the organizational and individual levels? How does the individualization of labor impact worker well-being and what are the spillover effects on customers and business outcomes? How do changes in transparency related to worker efforts and outcomes influence their attitudes, behaviors, and performance?

A variety of technologies (e.g., eye tracking, body heat sensors, video recordings) are being utilized to monitor FLE performance in call centers and telecommuting jobs. While on the one hand, these can increase productivity and be used to provide objective feedback, FLEs might perceive them as invasive and experience high levels of job strain, role overload, and exhaustion (Ravid et al. 2020). Further, the lack of stable workgroups and physical interactions with coworkers in virtual work can frustrate FLEs' intrinsic need for relatedness (Deci

and Ryan 1985), creating a sense of social isolation that can result in a variety of negative psychological and physiological outcomes (Cacioppo, Hawkley, and Berntson 2003). Which of these negative outcomes are most closely tied to technology-mediated work arrangements, such as online and remote models? Moreover, how can technologies better support employee performance and physical and psychological safety, rather than engender stress and anxiety? What impact do monitoring technologies have on employer-employee trust? More broadly, what are the effects on employee well-being of potentially or actually being replaced (partially or fully) by robots and other technologies?

In sum, the influence of technological innovations on FLEs appears to be complex and multifaceted. We urge service scholars to focus on the key FLE desires of *humanness* (integrating technology into service delivery without discounting human worth and dignity), *emotional connection* (combating social isolation inherent in technology-mediated interactions), and *well-being* (the eudemonic needs of personal growth and thriving). In addition, we believe that other stakeholder-wants, such as immediacy and transparency, have implications for FLE work experience and performance with abundant opportunities for impactful research.

Service research Priority #2: Technology and the customer experience. The customer experience (CX) has become a dominant marketing concept. Over 90% of business leaders believe that delivering a relevant and reliable CX is critical to business performance (Meyer and Schwager 2007). CX resonates with academics and practitioners alike (e.g., Brakus, Schmitt, and Zarantonello 2009; Homburg, Jozić, and Kuehnl 2017; Lemke, Clark, and Wilson 2011; Lemon and Verhoef 2016; McColl-Kennedy et al. 2019; Meyer and Schwager 2007; Rawson, Duncan, and Jones 2013). Recent CX scholarship has moved beyond the traditional FLE-customer interface by taking a multiactor perspective (McColl-Kennedy, Cheung, and Coote 2020), including the interaction between an array of technologies, channels, and devices. A recent survey of Chief Marketing Officers found that creating optimal experiences across all channels and devices is associated with higher marketing return on investment and customer acquisition (Moorman and Lemon 2020). Taking this notion of omnichannel engagement further, one can imagine technologies as service providers in and of themselves.

The Phase 1 analysis of scholar and practitioner views and global trends affirmed this notion of technology-infused CX and raised additional issues regarding the evolution of various actors' roles and contexts in shaping CX, as well as the unintended consequences of technology. Analysis of the Phase 2 data highlighted four areas requiring further theoretical and empirical work: (a) critical importance of connections, evolving actor roles, and context in the customer experience; (b) unintended consequences of technology in the customer experience; (c) maintaining humanness and human touch in the age of robotization and automation; and (d) increasing well-being and reducing ill-being in the age of technologies. Several

stakeholder-wants that emerged in the data closely relate to the subthemes identified here, especially humanness, emotional connection, and well-being. We elaborate on these through the subthemes discussed below. Specific stakeholder-wants related to the customer experience topic as a whole include diversity, which is deeply embedded in the frontline customer experience and journey, and frictionlessness, immediacy, and authenticity, which we include as a separate subtheme.

Critical importance of connections, evolving actor roles, and context in the customer experience. The development of technologies (e.g., Internet of Things) and technology-based tools (e.g., AI, mobile applications) has radically changed customer-provider touchpoints and altered the way customers experience the service journey (Bolton et al. 2018; Verhoef et al. 2017). One of these changes is the expanded role of technologies and tools (Hoffman and Novak 2018) in providing information, guidance, advice, and interaction, thus identifying the "best" options in certain contexts (e.g., providing directions to a service location or suggesting substitutes to fill a grocery order). Customer expectations regarding the seamlessness and speed of service (i.e., the stakeholder-want of immediacy) are also increasing significantly due to the accelerating adoption of these technologies/tools. Particularly relevant in this context is the evolving role of AI. Puntoni et al. (2021) suggest four aspects of the CX in which AI can play a pivotal role. First, in data capture, consumers can feel served or exploited when their data is captured by a firm through AI. Second, through classification, as AI analyzes the data, customers can feel well known and understood or misunderstood. Third, through delegation, as human functions get delegated to AI, consumers and employees can feel empowered to take on more substantial tasks or, instead, replaced and disempowered. Finally, AI has implications for the social experience: customers can feel either more connected or more alienated as a result of interacting with technology.

Technology development is coupled with the blurring of traditional participation roles and the emergence of new, often more active, roles for customers and employees (Bolton et al. 2018). We suggest that service researchers should pay attention to the capabilities required by customers or service employees to effectively participate and engage in multiactor settings involving both human and increasingly nonhuman interactions (e.g., mobile apps providing information and even encouraging patients to take medications and/or continue their exercise programs). Related to this is the issue of how service productivity can and should be conceptualized and measured in this context. New ways of tracking "service performance" need to be established with corresponding metrics and analytical procedures including all actors along the journey. How can firms integrate digital, physical, and social elements (Bolton et al. 2018) to design seamless experiences? As service providers continue to raise the bar for quick (often technology-enabled) service fulfillment, how does this impact future customer expectations and evaluations of service system performance? What new methodologies, tools, and service blueprints can help firms

design CX journeys? How can firms use machine learning to manage customer experience through the service journey?

The impact of technologies on customer experiences depends on the context: The same customer may find technology very useful along some journeys but intrusive and unhelpful along with others. The framework delineated by De Keyser et al. (2020) may help us understand the role played by the context. Those authors identify three key building blocks of CX: touchpoints (points of interaction between the customer and brand/firm), context (situationally available resources internal and/or external to the customer), and qualities (attributes that reflect the nature of customer responses and reactions to interactions with the brand/firm). Contextual factors can operate at four levels: individual, social, market, and environmental. It is the confluence of these contexts and building blocks and their idiosyncratic nature that intensify the complexity of customer experiences. Whereas an individual at work may find technologies that reduce the effort of searching or purchasing quite useful, an individual leisurely surfing for inspiration might find such technologies intrusive. Contextual issues in CX can also give rise to negative experiences for customers. For example, Airbnb has faced significant challenges addressing instances of blatant racial discrimination that guests have experienced at hosts' properties (Hakstian, Williams, and Taddeo 2021). As Brian Chesky, Airbnb CEO, notes on the firm's website, "I sincerely believe that [discrimination] is the greatest challenge we face as a company" (Chesky 2021). We need to better understand how the connectivity among people, things, data, and processes, noted above, arises in situ, particularly in idiosyncratic contexts, for individual customers and how to optimize the customer experience accordingly. As firms seek to provide customer experiences that best fit a customer's context, how can they strengthen the diversity, equity, and inclusion of the resulting customer experiences so that they resonate personally with each customer? How can services be designed to optimize the experience for each customer, taking into account customer expectations, orientations, and lived experience? Prior research suggests that target marketing efforts may leave disadvantaged groups worse off (Grier and Kumanyika 2010). More research is needed to consider whether designing personalized or contextualized customer experiences may also have such negative impacts.

Unintended consequences of technology in the customer experience. Automated and AI systems can detect even the smallest "inefficiencies" that human managers may not detect, such as length of downtime between customer service calls, number of keystrokes in chats, and routes taken for package deliveries (Sahota and Ashley 2019). Significant reductions in autonomy may have unintended negative consequences on the customer experience. When management becomes automated, how will that influence downstream customer experience? How will supervision automation influence the future relationships between FLEs and consumers? Relatedly, new machine learning technologies are beginning to assess emotion metrics in human call centers. Individuals are rated on their empathy,

for example, and recent research suggests that such technologies are only as good as the data utilized to train the machine learning algorithm (Vincent 2020). Some call center employees' voice responses (e.g., amount of silence, rapidity of speech) may be interpreted by the algorithm as negative even when those employees are being empathetic (Dzieza 2020). Such inaccurate assessments could result in worse experiences for consumers and, even more concerning, result in potentially discriminatory actions against well-meaning employees. Future research should examine how the design of such new technologies could be optimized and reduce the potential for cultural bias. Could service tools such as service blueprinting increase the humanness of AI-enabled service technology?

Maintaining humanness and human touch in the age of robotization and automation. While machines can pick up emotions by observing facial expressions in humans and other machines (robots), they currently cannot feel emotions ("AI Reads Human Emotions. Should It?" 2020). Understanding how humans and AI can best express emotions using these technologies, while exploring new ways to capture customer emotions (such as through wearable and mobile technologies) and customer actions at myriad touchpoints in real time, is an important avenue for future research. Future research should also examine consumer reactions to emotionally intelligent AI robots as these technologies emerge. Alternatively, one can consider the complementary roles of humans and robots in a way that maximizes efficiency and well-being outcomes. For instance, jobs could be designed so that telepresence robots could be used by individuals who may have low mobility but high emotional depth (e.g., the elderly), thus solving issues of loneliness and isolation while delivering efficient service.

Additional research questions that emerge when considering the humanness of technology include: How will robots and AI assistants respond to customer emotions? To what extent can (and should) technology be viewed as human? In what contexts does humanness enhance, or detract from, the CX? Finally, while machines can be taught to reason, will machines be able to make moral judgments regarding ethical choices?

Increasing well-being and reducing ill-being in the age of technologies. Will the radical implementation of technology lead to groups of people living their lives at different speeds? Will this result in a "digital divide?" It will be important to understand the underlying processes/mechanisms, contexts, and individual differences that drive people toward or away from technology. Some research suggests that too much "screen time" can reduce health and well-being (Twenge, Martin, and Campbell 2018). On the other hand, the COVID-19 pandemic has required almost everyone to expand their screen time in unimaginable ways, enabling people to stay socially connected. Less screen time in such a context would most likely reduce overall well-being. A specific technology could probably lead to worse customer experiences and reduced well-being for some, while it might lead to improved customer experiences and well-being for others, depending on context and individual differences. Research by Bone, Christensen, and Williamson

(2014) suggests that many customer service experiences (e.g., financial, health care, legal, private clubs, education) can result in systemic restricted choices for minority consumers, resulting in a customer journey that is "more of an arduous uphill battle, in which they describe negative impacts on the self" (Bone, Christensen, and Williamson 2014, p. 470). Future research should examine the extent to which digitally disadvantaged consumers may also experience the negative impact of such restrictions. It will be important to engage in interdisciplinary research efforts with computer science, engineering, psychology, sociology, and neuroscience to gain a deeper understanding of the influences of emerging technologies on customer and employee well-being.

Customer experience: Frictionless, immediate, and authentic. Three stakeholder-wants that emerged as significant in Phase 2 of the research are frictionless and immediate experiences and the authenticity of the experience. Customers expect experiences to flow without frustration or roadblocks. They recognize that the journey will typically have multiple steps, such as clicking through multiple screens, answering multiple questions, or needing to go from one section or department to another, in person or online. But customers should not need to answer the same question multiple times in a single customer journey; such unnecessary roadblocks and pain points should be minimized. Advances in technology can bring together vast amounts of data and assemble them in meaningful ways to reduce "friction" in the overall experience. For most firms, the capacity is there to harness the necessary information and make it available in real time.

One example of reducing friction is seen among the many customers who switched from in-store grocery shopping to delivery during the COVID-19 pandemic (Morgan 2020). By improving their websites, apps, and in-store shopping capabilities, service providers significantly reduced the friction and pain of shopping digitally, often leveraging personal information provided by customers. Advances such as "shopping lists" and "past purchase" capabilities, improved substitution options, and in-store chat functions with employee shoppers, incorporating geo-tracking and texting for deliveries, made the grocery shopping experience faster and more seamless. Immediacy can also give rise to new forms of interactions: Some digital creators now enable fans to pay to vote in polls to make those creators' day-to-day decisions such as which sweater to wear, where they should go, or what game they should play, and the creators share the results with fans via social media platforms (Lorenz 2021). Many of these "immediate" services are provided through online channels, which raises the following questions: How do customer immediacy expectations differ between online and off-line services and what are the spillover effects from online immediacy experiences to off-line expectations? Relatedly, what is the impact of "reference expectations" or "expectation spillover" on immediacy from other industries or contexts? Will customers expect companies to have same-day delivery like Amazon or doctors to have a reservation system like OpenTable? Moreover, how much

information are customers willing to provide to get immediate service; what is the privacy and immediacy trade-off?

Customers also want experiences to be authentic, for service providers to treat them as real people, not numbers or blips of information, and for providers to show that they care about them. Machines are good at some of these roles but not others. For instance, technology should be able to accurately identify customers and match those customers to their needs, expressed emotions, preferences, and even personality by using data from customer relationship management systems, data scraping, wearables, and by capturing changes in customers (e.g., heart rate and microexpressions) in real time. For example, Amazon's Halo tracker uses machine learning to analyze the levels of positivity and energy in a customer's voice. Amazon suggests that this will "help customers understand how they sound to others, helping improve their communication and relationships" (Majmuda 2020). However, will this lead to more authentic customer experiences? In certain contexts, technology can better predict or gather information compared to humans. In health care settings, for example, technologies are critical for monitoring patients' vital signs, but how do these intrusive yet necessary technologies impact patients' psychological and physical well-being?

This priority focuses on the challenges and opportunities that emerge as technology rapidly transforms the customer experience. First, we examined the importance of connection, evolving actor roles, and context. Second, we looked at potential unintended consequences of technology in the customer experience, including new AI technologies such as chat and voice, and implications for diversity, equity, and inclusion. We also examined issues related to maintaining humanness and human touch with these emerging technologies, along with strategies to increase well-being and reduce ill-being. Finally, we highlighted three stakeholder needs relevant to this priority: frictionlessness, immediacy, and authenticity.

Responding to the Changing Needs of Multiple Stakeholders

Service research Priority #3: Resource and capability constraints. Patterns of customer demand related to various forms of services, as well as firms' ability to meet these demands, appear to be increasing in their unpredictability due to environmental disruptions, including pandemics (Voorhees, Fombelle, and Bone 2020), climate change (Besiou and Van Wassenhove 2020), volatile labor markets, unraveling trade relations between nations, and significant societal changes (Previte and Robertson 2019). Our Phase 1 analyses indicated that service providers are under increased pressure to reconfigure, and then deploy, the necessary resources and capabilities to respond to these changes in real time. Thus, we propose "resource and capability constraints" as a priority for future service research. Three particular focal areas emerged from our data: (a) capabilities to anticipate environmental, social, cultural, and demographic shifts; (b) novel resource configurations for extreme flexibility; and (c) service performance in highly

uncertain environments. Not surprisingly, the stakeholderwants most closely tied to a future research agenda for this priority in Phase 2—adaptability, agility, and resiliency—are all oriented toward responding to changing conditions.

Capabilities to anticipate environmental, social, cultural, and demographic shifts. The difficulties of predicting the future are immense. While firms often forecast supply and demand patterns based on linear extrapolations of past and current trends, the interconnected nature of the world often provokes complex and nonlinear change (Anderson 1999). As an example, an increase in half a degree of global temperature (a difference threshold that cannot ordinarily be sensed) can incur vast economic and human costs (Masson-Delmotte et al. 2018). Similarly, an illness in one geographical location can trigger the disruption of supply chains and global markets (Ivanov and Das 2020). To anticipate and respond to these changes, organizations will need to supplement market intelligence with robust scenario planning while building dynamic capabilities, that is, a collection of routines that "together with its implementing input flows, confers upon an organization's management a set of decision options for producing significant outputs of a particular type" (Winter 2003, p. 991). While ad hoc problem-solving has a lower cost structure than the creation and management of these dynamic capabilities, the "capability of firms to develop capabilities" is essential to consistently cope with uncertainty.

Let us take the example of rapid sociodemographic shifts in the form of increased racial and ethnic diversity in various developed nations and age and income diversity in emerging economies. A firm might build capabilities to manage this diversity by catering to specific (e.g., base-of-the-pyramid) segments of the population. However, with an increase in income and education, members of this market might shift into the middle class with different service expectations and standards (e.g., an increased focus on a sustainable lifestyle). To cater to this class of customers, the firm might need to develop new capabilities—perhaps, in this case, exploring affordable "green" services. The second-order capability required to develop these separate capabilities (i.e., BOP and green services) might consist of environmental scanning and new service development routines based on continuous learning from the social environment. The existence of these dynamic capabilities would enable the organization to quickly pivot to the provision of the green services in our example.

We view the theoretical frame of dynamic capabilities as helping answer a variety of questions: What capabilities are needed to meet customer wants across generations that share different sociocultural values and act differently as customers? Does building these capabilities require a workforce that mirrors the customer base? How can employee creativity be leveraged as a dynamic capability? Relatedly, can organization-wide ingenuity enable increased adaptability in resource-constrained environments? What capabilities are needed for service recovery from the more frequent external shocks organizations are facing? More broadly, what are the

important capabilities to anticipate these shifts and how can they be developed (e.g., the not-always-realized potential of AI algorithms to reduce biases such as racism and ensure fairness)?

Novel resource configurations for extreme flexibility. Research in both manufacturing and service operations has focused on how to efficiently and effectively match capacity (i.e., allocate resources) to customer demand under uncertainty (Aksin, Armony, and Mehrotram 2007; Hariharan, Liu, and Shen 2020; Jordan and Graves 1995). Common solutions are to increase the flexibility of the resource pool through initiatives such as worker cross-training, utilizing multi-functional equipment and facilities, and leveraging a flexible/contingent workforce (Kocaga, Armony, and Ward 2014). Firms typically have to balance the costs of building this flexibility with its longterm benefit of increased responsiveness to customer demands and environmental disruptions. These costs may include investments in digital technologies, seeking and building relationships with external partners (e.g., suppliers and outsourced service providers), and issues with managing separate dual employment systems for full-time and contingent workers.

However, our world is experiencing an increase in environmental and social disruptions with unprecedented effects on resource availability and demand volatility. Thus, new ways of configuring resources are needed, with a broader consideration of how ecosystems of resources can be brought together to meet the need for extreme flexibility in response to this environment. While research on emergency preparedness provides important insights into how capacity can be rapidly ramped up to meet unpredictable demand shocks (Besiou and Van Wassenhove 2020), service organizations that never faced this type and level of uncertainty—as during the COVID-19 pandemic—will need to determine how they will structure and manage resources going forward, both internally and with ecosystem partners. As an example, hospitals that are stretched thin in terms of capacity to manage patient volumes are relying on telehealth and drug chains to manage excessive demands. Yet, how can physical and digital ecosystems be designed for quick reconfiguration and scaling in response to highly volatile demand and resource constraints? The following research questions help frame the discussion of how these organizations and ecosystems can move toward extreme flexibility.

How can businesses, governments, and global institutions (e.g., nongovernmental organizations) share resources to attain common goals? How and by whom should these resource ecosystems be orchestrated? (How) can traditional supply chains be quickly reconfigured to balance supply and demand during periods of both unexpected resource constraints and demand shocks (e.g., restaurants selling staple foods during the COVID-19 pandemic amid shortages at grocery stores)? Similarly, how can organizations move seamlessly among employees, self-service, robots, and digital resources to meet demand depending on resource availability (e.g., food banks moving to a self-service model when volunteers are not allowed to work during pandemic lockdowns)? Moreover, how can traditionally

structured organizations be restructured to enable extreme flexibility in resource configurations and deployment (e.g., through microenterprises that function as internal resource matching platforms; Yu and Greeven 2020)? More broadly, how can these questions be answered for ecosystems of resources owned and managed by disparate actors?

Service performance in highly uncertain environments. Measuring and improving service performance remain SRPs, attesting to the ongoing challenges of determining appropriate metrics to evaluate services and optimize their performance (Field et al. 2018; Ostrom et al. 2015). Efficiency and productivity, which relate the resources used to the outputs produced, are often considered easier to measure than effectiveness, which is determined based on factors such as how well outputs meet customer and other stakeholder-wants and can include not only economic but also social and environmental impacts. Although single metrics rarely capture the wants of all stakeholders, multiple performance metrics for a service process are often in conflict. For example, management of a fast-food chain directed employees to reduce food waste by cooking food only after it had been ordered, thereby converting it into a "slowfood" chain (Hammer et al. 2007). While improving one metric (waste), revenues and profitability decreased even more as customers defected due to long waits. Although corporations often use balanced scorecards to align metrics across stakeholders (Kaplan and Norton 2007), it becomes essential for these measures to reflect both organizational priorities and the need to adapt to uncertainty in the environment through measures such as adaptability, agility, and resiliency.

Technologies such as sensors and online activity tracking have expanded the types and amount of digital data available for measuring service performance (Field et al. 2018). (How) does this exponential growth in digital data collection, analysis, and use enable the development of new metrics that may be more appropriate for measuring and driving performance improvement in this environment? For example, more and more services are being delivered proactively, based on analyses of previous customer behavior (e.g., purchase patterns) or algorithms (e.g., using data on state variables to predict equipment maintenance needs). (How) can services be proactively delivered in rapidly changing environments where the past may not be as predictive of the future? What metrics are needed to gauge the feasible and/or optimal level of proactivity? Further, how can organizational stakeholders ensure transparency and traceability during periods of rapid change (e.g., using blockchain technology)? How can technologies such as AI and digital twins be used to drive performance on these metrics?

Six Sigma and Lean (often combined as Lean Six Sigma [LSS]) are two of the most popular service process improvement methods. By focusing on decreasing variation, reducing waste, and improving process flow (Sunder, Ganesh, and Marathe 2018), LSS aims to improve service performance on multiple dimensions (e.g., quality, cost, customer satisfaction), with gains in market share due to services that better meet customer needs. More research is needed on whether or how

LSS or other existing process improvement approaches can also be considered dynamic capabilities (Sunder, Ganesh, and Marathe 2018) in highly uncertain service environments. For example, Scrum is an iterative and agile product development framework that has also been applied to process improvement projects. More generally, how should the performance improvement process be managed when the relevant performance metrics are rapidly changing due to social, cultural, and demographic shifts?

The importance of adaptable, agile, and resilient resources and capabilities during turbulent times cannot be overstated. Our data suggested three subthemes that represent opportunities for impactful service research. First, there is a need for research to identify and understand the capabilities required to anticipate environmental, social, cultural, and demographic shifts. Second, given the accelerating pace of change and increased uncertainty, research on extreme flexibility in resource configurations and ecosystems is needed, as well as research regarding how different stakeholders can share resources to attain common goals. Third, we need a deeper understanding of how to measure performance in uncertain environments and perhaps new tools and approaches to enable better assessment and performance.

Service research Priority #4: Customer proactivity for well-being. Consumers are increasingly assuming a greater role in all aspects of services that affect their well-being (Erikainen et al. 2019) as well as the well-being of others and the environment (Finsterwalder and Kuppelwieser 2020). Terms such as coproduction and value cocreation capture this blurring of the lines between the production and consumption of services as consumers take on tasks that have may have previously been the domain of service providers (Leroi-Werelds 2019; Vargo and Lusch 2004, 2016). A related term, "prosumption," signifies an even more active role of the consumer in service production processes, often facilitated by digital technologies (Rayna and Striukova 2016). As a result of the growth in customer engagement in these types of services (Brodie et al. 2011), we propose "customer proactivity for well-being" as a research priority. Customer coproduction or prosumption activities, such as self-service and participation in peer-to-peer services and smart city initiatives, typically seek to cocreate value by integrating their resources with other stakeholders in the service ecosystem (Vargo and Lusch 2016). However, not all services unilaterally cocreate value, and the term "value codestruction" has been coined to describe "an interactional process between service systems that results in a decline in at least one of the systems' well-being" (Plé and Chumpitaz Cáceres 2010, 431). Studies of this nature include those addressing customers posting negative reviews online, although additional research applying a service lens to better understand consumers' participation in other value co-destructive services is needed (Laud et al. 2019). Survey responses reflect the potential for both value cocreation for well-being and value codestruction for "ill-being" and the importance of further research in three particular areas: (a) consumer responsibility

for personal health and welfare; (b) the role of consumers in sustainability efforts; and (c) consumer production, consumption, and detection of value co-destroying services. In Phase 2, the most-cited stakeholder-wants associated with this research priority are accessibility, creativity, transparency, trust, and waste reduction.

Consumer responsibility for personal health and welfare. Services for personal health and welfare (e.g., health care, financial services, personal care) typically involve significant levels of interpersonal interaction between customers and service providers. In other words, they are "customer-intensive" (Anand, Paç, and Veeraraghavan 2011). Many of these services are also knowledge-intensive, requiring highly skilled and trained providers, while others, such as personal care, entail more manual labor. With the advent of new technologies such as wearable devices, knowledge platforms (e.g., WebMD and Google Finance), and social media platforms for the creation and sharing of C2C content (e.g., PatientsLikeMe), consumers can take on many of the knowledge-based tasks previously performed by service providers such as physicians and financial planners (Erikainen et al. 2019). Although increased consumer responsibility for their well-being can be empowering (McColl-Kennedy et al. 2017), in many cases, rather than increasing agency in making personal health and welfare decisions, consumers may instead cede decision making to the AI algorithms that drive these technologies (Klaus and Zaichkowsky 2020). Ironically, the opacity of AI algorithms to the consumer may result in less engagement in the decision-making process than when interacting and cocreating with a human provider. Many of these devices and platforms do not have the desired outcomes without a supporting network of otherwise disintermediated providers. For example, Google Health was launched for consumers to consolidate their health information but failed without support from providers and insurers (Van Alstyne, Parker, and Choudary 2016). We need to better understand the implications of increased customer responsibility for personal health and welfare on the service ecosystem.

In Phase 2, further research needs related to accessibility were especially prevalent for this subtheme. While the digital divide continues to result in uneven access to these digital technologies along socio-economic lines (Erikainen et al. 2019), many Phase 2 comments focused on the idea that accessibility is meaningless if there are barriers to actual use, such as safety and security concerns or limitations and variations in consumer capabilities. Moreover, a number of the participants in our study suggested extending a service lens beyond the focal consumer to consider how personal health and welfare choices affect others in a service ecosystem.

Specific research questions arose in the areas of accessibility and personal health and welfare. Even if consumers have access to services (e.g., health care, financial, education), what are the barriers to utilizing these services and how can these barriers be reduced? How can consumers be educated to use these services correctly? How can citizens, patients, consumers, and customers stop viewing themselves as passive

receivers of personal health and welfare services and instead become active prosumers of the resources that organizations are providing? How do safety and security concerns affect the willingness of consumers to be proactive for personal health and welfare? How can dignity and fairness be designed into service processes customers engage in for personal health and welfare? How can emotional connections with customers be created through self-service technologies for these services? How can providers trust the quality of consumer self-service for personal health and welfare? Who or what should orchestrate the service process when the consumer is taking a greater role in its provision?

How can services related to disease management become more robust to personal health choices (e.g., wearing masks and social distancing during the COVID-19 pandemic)? How is respect for others related to these choices? How does social cohesion impact these choices and what are the impacts of these choices on social cohesion? Similar questions can be asked of other technologies and focal actor choices that may affect the health and welfare of other stakeholders in a service ecosystem differently (e.g., safety of other drivers and pedestrians with self-driving cars). What is the role of complex human emotions, such as hope, in the cocreation of service solutions aimed to increase consumer health and financial well-being?

The role of consumers in sustainability efforts. Field et al. (2018) discuss the challenges of achieving sustainability goals when customers play a significant role in whether these goals are met, particularly in industries such as hospitality and tourism (e.g., water and energy consumption during hotel stays). They suggest a research priority to determine behavioral approaches that can encourage customers and employees to engage in sustainability efforts in both these and other service industries. Similarly, in the context of smart city initiatives, Hasija, Max Shen, and Teo (2020) consider the important role that citizens play in successful implementations and advocate for a research agenda that includes developing a better understanding of how to engage citizens in these efforts and ensure that their actions maximize social surplus and not only citizen utility.

While sustainability efforts require the active involvement of stakeholders throughout the service ecosystem, our Phase 1 data highlighted future research opportunities centered on the consumer, with research questions in Phase 2 concentrated on but not limited to the intersection of stakeholder-wants of waste reduction and, interestingly, creativity. The following questions add to the developing research agenda on the consumer's role in sustainability efforts.

What role does emotional connection play in fostering a sense of community (e.g., respect for others) and hope for a better future that results in consumer sustainability efforts? How does transparency into service processes and their (environmental) effects impact customer engagement in sustainability efforts? How can gamification help motivate customers to engage in waste reduction? How can waste be reduced without the feeling of burdening consumers? How can consumers be

educated on waste reduction without the feeling of being chastised or corrected? What value do consumers give to sustainability over the satisfaction of their other needs? How can citizens' creativity, including their problem-solving skills and willingness to participate in addressing sustainability challenges, be harnessed by policy makers and firms?

Consumer production, consumption, and detection of harmful (or value-destroying) services. In light of the sharing economy's recent growth, the distinctions between the roles of service facilitators, users, and providers have blurred (Bolton et al. 2018). The fluidity and transience of service relationships often make it less immediately evident who benefits and who is negatively impacted by a service in the short and long term. This requires examining value creation and destruction through a broader lens, adopting an ecosystem perspective and wellbeing outcomes at individual and community levels. As one of the Phase 1 survey participants pointed out, along with the positive outcomes, service ecosystems may bring negative consequences for the stakeholders or the whole ecosystem and may generate negative consequences outside the ecosystem itself. Phase 2 data highlighted the need for research that examines social repercussions of recent disruptors of traditional service models (e.g., gig economy), which may require bringing in theories from other disciplines such as sociology. For example, according to sociological standpoint theory, which emphasizes the perspective and experiences of marginalized groups (Harding 2004), service outcomes should be evaluated not only from the viewpoint of those for whom the value is created but also from the viewpoint of those who bear its cost and may experience value destruction and reduced well-being as its consequence.

Not surprisingly, questions related to this subtheme were linked to transparency, which was identified as one of the critical service stakeholder-wants. Operational transparency has been shown to increase customer-reported service quality and employee satisfaction (Buell, Kim, and Tsay 2017). Companies, however, rarely disclose the third-party service providers they use as part of their service solution and may choose to intentionally keep the service supply chain obscure, separating themselves and their brands from "cheap, disposable, and isolated" independent "service partners" (Tobin, Armstrong, and Elliott 2020). As a result, individuals may become victims or unknowing participants of unethical and even illegal operations disguised as gig economy engagements (Popper 2020). As one of the survey participants pointed out, this raises important questions about why transparency and traceability in service supply chains have not received equivalent attention as the supply chains of physical goods. What does transparency mean in these two distinct contexts? How important are ethical practices in the service value chain to customers and other service stakeholders? More generally, what is the role of ethics in considerations of value creation? How can concepts such as ethical risk analysis, which advocates integrating ethical considerations as part of risk assessment of policy decisions (Hansson 2018), be integrated into service design and evaluation?

For example, advancements in digital technologies gave rise to such value co-destruction phenomena as disinformation-asa-service (Kerr 2020; Martin, Shapiro, and Ilhardt 2020) and harassment-as-a-service, which are used to influence public opinion and suppress vocal opponents (Kerr 2020). Examining value co-destruction from a resource mis-integration point of view, Laud et al. (2019) define this type of value co-destruction as a deceptive integration of resources often guided by unethical, unlawful, or opportunistic intentions. However, this approach assumes that ethical intentions are inherent in the resource integration service framework, which may be limiting our understanding and opportunities to ask broader research questions regarding value co-destructive services. As our data highlights, value creation and destruction often coexist. For example, survey participants drew attention to questions related to balancing the bright and dark sides of technology and AI use in services that, while enabling organizations to increase efficiencies, may automate and amplify social inequities ("The Guardian View on Automating Poverty: OK Computers? | Editorial" 2019). Survey participants also highlighted the need to examine service implications of deepfake AI technology, which provides opportunities for engagement and entertainment but can also be used for malicious manipulation (Kietzmann et al. 2020), destroying value for service organizations and their customers and undermining reputation and trust. The implications of such technologies are multifaceted and complex and require updating the existing frameworks for evaluating service quality and managing trust and loyalty in service relationships. Some of the related Phase 2 questions included: What are the implications of active reputation management for service providers? How can fraudulent and deceptive interventions in public and private service processes be prevented? How can consumers and providers avoid becoming victims and unintentional contributors to value-destroying services? Once undermined, how can trust in service relationships be regained?

Our data also emphasized the role of social media in consumer production, consumption, and detection of valuedestroying services. Social media platforms enable individuals to create value by facilitating interpersonal connection, fulfilling their consumption need for entertainment and information, and providing an opportunity for self-expression and selfactualization (Shao 2009). However, social media platforms, widely unregulated, can easily become sources and disseminators of misinformation (Allington et al. 2020) and harmful conspiracy theories (Romer and Jamieson 2020) that destroy value at the societal level. Disinformation is often propagated by influencers who create and monetize misleading and false content using social media platforms (Lewis 2018). Social media platforms in this case act as service providers that enable the creation and algorithm-driven promotion of unverified content and profit from its monetization. The ease of the spread of information and disinformation on social media raises a multitude of questions about the dark side of consumer activism online, from false reviews (Luca and Zervas 2016) to vigilante (Haasch 2020) and cancel culture (Lizza 2020) phenomena.

Some of the related questions raised in Phase 2 included: What are the roles of the aggregate consumer voice and the voice of social influencers in replacing expert advice in specialized services? How do consumers evaluate the service quality, credibility, and authenticity of providers in the digital age? How should the trade-off be managed between the freedom of speech and protection of truth, consumer activism, and service sabotage in an era of disinformation? How can technology, which has enabled value destruction such as the spread of disinformation, be used to detect and counteract it? Which (smart) services can help overcome fake news and conspiracy theories to stabilize the social cohesion of societies? For example, Facebook and Twitter started labeling misleading posts (Wagner 2020) and have subsequently more aggressively banned users for violating their terms of service. How effective are such efforts in curbing disinformation, elevating credible sources, and rebuilding consumer trust in institutions, organizations, governments, media, and individuals?

This priority centers on consumers taking more agency and responsibility for their own well-being. First, additional research is needed to understand consumer responsibility for personal health and welfare, especially as it relates to engagement, accessibility, emerging technologies, and AI. Second, we need to further investigate behavioral approaches that encourage customers and employees to engage in sustainable practices in service industries. Third, more research is needed regarding the roles of both consumers and firms in consumer production, consumption, and the detection of "value-destroying" services. Five stakeholder-wants cut across the themes in this priority: accessibility, creativity, transparency, trust, and waste reduction.

General Discussion

We live in times of great change shaped by technological innovations, global crises, and the promise of a fair and sustainable future. Amid disruptions caused by transformative forces including a global pandemic, social upheaval, and climate crisis, we reached out to service scholars, practitioners, and the online public sphere to identify a set of thought-provoking and socially relevant service priorities. Our multiphase, multimethod approach enabled us to identify priorities that span disciplines, along with key stakeholder-wants associated with each SRP. In this article, we focus on the first four of these priorities; the companion article (Field et al. 2021) delineates the rest. Here, we examine priorities relating to significant changes in the world that urgently require additional research. The first two—"technology and the changing nature of work" and "technology and the customer experience"-focus on leveraging technology for service provision and consumption. The next two—"resource and capability constraints" and "customer proactivity for well-being"—focus on responding to the changing needs of multiple stakeholders. The issues identified in these four priorities represent critical and actionable areas that all scholars, regardless of discipline, can begin to tackle.

A recurrent theme throughout this article is the uncertainty and turbulence that societies, firms, governments, and consumers face in the provision, access, and consumption of services. The priorities and specific stakeholder-wants outlined in this article showcase the depth and breadth of these seismic changes. Whether it is challenges to institutions, demands for social justice, the need to address climate change, stresses related to a global pandemic, or technological advances blurring the distinction between humans and machines, the priorities reflect these challenges and offer a call to action for researchers. For example, technology serves as an enabler and a potential threat in terms of its implications for the changing nature of work and for the customer experience (SRP1 and SRP2). Climate change brings key challenges for resource and capability constraints (SRP3). Increased uncertainty necessitates consumers taking on a more proactive role in their well-being (SRP4). Each priority, we hope, offers viable opportunities for important actionable research to address these critical issues.

As noted at the outset of this article, our goal was to be as inclusive and expansive as possible in gathering input for the research priorities. Thus, we undertook a multimethod, multiphase approach with some innovations. We believe this is the first attempt in service literature to utilize global web scraping, machine learning, and natural language processing to identify key global trends to inform research priorities. We also believe that our identification of stakeholder-wants across a broad set of stakeholders constitutes a distinctive feature of our article. To identify these stakeholder-wants, we examined a comprehensive list of review articles published in service journals. These two inputs served as the basis for our Phase 1 survey data collection, including scholar and practitioner respondents across many disciplines from 18 countries. This Phase 1 textual data were analyzed using two methods: a machine learning and natural language processing approach and a qualitative analysis approach. The Phase 2 survey and roundtable data collection enabled refinement of the research priorities and identification of top stakeholder-wants. The resulting SRPs represent a robust set of relatively under-researched topics and areas of the service field that are particularly suited for research efforts that can significantly impact firms, consumers, and society. We seek to mobilize multiple stakeholders through these priorities.

Potential Actions for Scholars, Firms, Consumers, and Public Policy

A call to action for scholars. Many of the SRPs require inter-, multi-, and transdisciplinary approaches to solve the knotty problems that have been identified. We hope that researchers will seek out scholars from other disciplines, collaborating, for example, with computer scientists to understand the algorithms underlying social influence in the online environment and working with public health scholars to determine the forces weakening or strengthening health care delivery. Second, we encourage the academic community to tackle big problems that can have a significant impact. For scholars interested in the

organizational frontline or the customer-firm relationship, we suggest a deeper examination of issues highlighted in SRP1 (technology and the changing nature of work) and SRP2 (technology and the customer experience). For researchers more interested in firm- or organization-level issues, we suggest a deep dive into SRP3 (resource and capability constraints). For those researchers more interested in transformative service research, we suggest taking a look at SRP4 (customer proactivity for well-being). We also recommend that scholars seek out collaborations with other stakeholders (e.g., firms, organizations) to address key issues and to enable the implementation of identified actions and solutions.

Innovations for firms. It is our sincere hope that the key issues set out here will spark firm creativity. We have highlighted many innovations throughout the article. But the opportunity and the need for substantial innovation are evident in each SRP and stakeholder-want. Firms can find new applications for technology to improve both worker and consumer well-being and to address current customer pain points, new solutions to use resources more judiciously to reduce harm to the planet, and new ways to enable consumers to be proactive about their own well-being. Successful solutions for these problems may be accelerated through collaborations with scholars with expertise in these areas.

Empowering consumers. For individuals, we believe that the insights here offer hope and opportunity. Technology and systems innovations may reduce friction in customer experiences and provide simpler solutions to enable consumers to have more information, transparency, and agency. That said, they also may inhibit consumer capabilities. The changes and turbulence we have discussed have substantial impacts on consumers. Most significantly, consumers across almost all service domains now bear a greater responsibility for their well-being. Individuals have the opportunity to find specific ways in which they can be proactive in their well-being, whether it be in health care, finance, consumption, or impact on the planet. Key stakeholder-wants that emerged from this research may offer opportunities in this regard.

Energizing policy makers. The research priorities and topics outlined here necessitate big solutions and innovative thinking. Our priorities have implications for policy development and implementation. Particularly, SRP3's focus on resource and capability constraints sets out critical challenges for policy makers relating to access, allocation, and equity. SRP4's call for consumer proactivity for well-being will involve supporting social innovations and experiments to identify the drivers of community well-being. Similarly, the continued acceleration of technology as described in SRP1 and SRP2 will require a renewed look at existing labor, worker safety, and (consumer and employee) privacy laws. We see the need for service scholars to engage with policy makers to help inform and drive these changes.

Conclusion

In this article, we utilized a multiple-stakeholder lens to identify four key SRPs that reflect our changing and turbulent times. As we sought input from scholars and practitioners alike, we heard the call—at once affirming and ambitious—regarding the potential of our interdisciplinary field of services to respond to technological, societal, and business challenges. To increase the field's relevance, service scholars will need to heed this call by developing responsible and actionable research that has the power to not just respond to environmental turbulence but also create a way forward for all stakeholders.

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Supplemental Material

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