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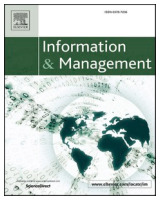

Digital detox: A theoretical framework and future research directions for Information Systems

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ABSTRACT

Digital detox is gaining increasing attention as a method of self-control to address the adverse effects of prolonged leisure information and communication technology (ICT) use. However, the existing literature on this matter uses inconsistent terminology and reports mixed empirical results due to different understandings of what constitutes a digital detox strategy. Based on a theoretical review of existing literature, this study (1) introduces a consolidated definition of digital detox that integrates elements of synonymous concepts, (2) develops a theoretical framework for digital detox strategies, and (3) proposes a research agenda based on this framework. These contributions allow researchers to derive digital detox interventions systematically, make them comparable across studies, and thereby advance this important line of scholarly inquiry. Practitioners may build on our findings to derive individual and organizational measures such as routines and policies that prevent negative side effects of leisure ICT in both work and private life domains.

1. Introduction

In contrast to instrumental work-related information systems, leisure information and communication technologies (ICT) are systems that aim to provide self-fulfilling value to the user, which are often designed to maximize prolonged use (rather than productive use; [85]). Due to increasingly enticing designs, overuse that comes with negative side effects is a pervasive phenomenon [37]. For example, Americans spend 2.16 hours per day on social media [68], and 48 % of British teenagers feel addicted to them [15]. Aside from addictive behavior [18,93], unintended negative side effects of leisure ICT use can encompass technostress [74], reduced well-being [78], lower self-esteem [86], fear of missing out (FOMO; [9]), and a negative body image [26]. These problems are particularly evident in younger age groups [35]. In a recent advisory, the Surgeon General of the United States [[20], p. 13] proclaimed a "national youth mental health crisis," while linking this crisis to the prolonged use of social media.

When people are faced with negative consequences of their actions, they engage in self-regulatory "corrective behavior," which is aimed at restoring their desired states [51]. One common way to deal with and reduce the negative side effects of leisure ICT use is *digital detox* [44,72]. Research on digital detox goes back roughly a decade [81] and is dispersed across various disciplines such as psychology [63], media and communication studies [72], psychiatry [80], and information systems (IS; [44]). Whereas this multidisciplinary effort to understand digital detox is commendable, key limitations of this body of work include the use of inconsistent terminology, the lack of a cohesive research framework, and an unclear research agenda for IS scholars.

To date, different terms that combine a certain online medium, a technology, or a device with a form of restricting such medium/technology/device have been used [57]. Examples include *digital detox* [72], *digital diet* [3], *abstinence* [84], *media-free* [10], and *use reduction* [51,66]. Inconsistencies in the use of terms are not an issue per se if definitions are clear for the purpose of each study. However, imprecise terminology poses a problem to an academic discipline because it inhibits the productive advance of a discourse [1,54]. This is because inconsistencies and conflict regarding the meaning of a concept such as digital detox can lead to (1) conceptual confusion and misunderstandings, (2) difficulties in developing a coherent body of research and theory, and (3) lack of comparability of empirical findings [61].

Regarding the last, a recent systematic literature review by Radtke et al. [57] reported mixed effects of digital detox interventions across studies. These mixed results are grounded in the fact that researchers do

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not have a common understanding of what constitutes digital detox, which then produces study designs that are difficult to compare. While each individual study can provide useful insights, the different boundary conditions under which digital detox is researched make it difficult to combine these individual studies to gain cumulative knowledge. This includes, for example, how many devices or applications are excluded from use behavior, for how long, and at what point in time or how often outcomes are measured. The scientific debate on digital detox, therefore, can benefit from efforts that demarcate imprecise vocabulary from useful ideas, provide a consolidated definition, and develop a theoretical framework that guides digital detox interventions in future research.

The research objectives of this paper are to outline the status quo of digital detox terminology, to solidify a conceptual foundation for future IS research on this matter, and to develop a theoretical framework for digital detox strategies with potential research directions through which IS scholars can contribute to a cumulative tradition about this important topic.

We follow a review methodology that consists of three phases. In the first phase, we undertake a comprehensive literature search following established guidelines [87]. In the second phase, we build on the identified literature to develop a consolidated definition of digital detox (synthesis). To do this, we extract and codify the semantic facets of existing definitions and use the results to articulate a new definition [61]. In the third phase, we integrate our findings into a new theoretical structure (theorizing; [31,52]). Drawing on the higher-level belief–action–outcome framework [42], we propose a theoretical framework for digital detox strategies. Its usefulness is discussed, based on recent examples from the literature. Finally, we use the theoretical framework to inform a research agenda.

Overall, this study contributes to the IS literature because it helps to gain conceptual clarity, advances the theoretical underpinnings of digital detox, and charts important research directions for IS scholars. A distinct conceptual understanding of digital detox is crucial for fruitful discourse and future research on this matter, including theoretical links to concepts of interest for IS research.

2. Related work

2.1. Existing conceptualizations of digital detox

As of this writing, there are several definitions for digital detox. The Oxford Dictionary defines digital detox as a "period of time during which a person refrains from using their electronic devices, such as smartphones, regarded as an opportunity to reduce stress or focus on social interaction in the physical world" (as cited in [57], p. 192). Syvertsen and Enli [[72], p. 1269] provide some more context for the phenomenon: "Digital detox stands in a long tradition of media resistance and resistance to new communication technologies, and non-use of media, but advocates balance and awareness more than permanent disconnection." These examples represent a larger number of definitions that fall short of providing important information about what it means to conduct a digital detox deliberately. In that sense, it remains unclear whether (a) a person restricts the usage of all devices or takes time out from only one device (e.g., a smartphone) while still using another one (e.g., a laptop computer), (b) it is a voluntary and intentional absence from digital devices or an involuntary, enforced absence, and (c) whether digital withdrawal refers to one or more specific applications (e.g., social media apps) that run on a device [57]. There are also questions about the source of motivation that should be clarified: whether a digital detox is externally motivated or driven by one's internally driven desire to restore a desired state (homeostasis; [77].

2.2. Outcomes of digital detox intervention studies

Scholars in several disciplines have set out to examine possible strategies and measures that support individuals in countering negative side effects of leisure ICT use. For instance, both Turel et al. [77] and Brown and Kuss [10] conducted studies in which they compared participants who conducted *social media abstinence* with a non-abstaining control group. Roberts and Koliska [59] conducted a study involving university students who were asked to follow *abstention from media*. Moreover, Anrijs et al. [4] and [92] conducted (smartphone) *digital detox* experiments. [53] tested strategies that helped employees to handle technostressors such as techno-overload and techno-invasion better in the form of *communication measures*. These studies all had the same goal of investigating periodic abstinence from leisure ICT and aimed to understand the effects of a given intervention better. However, each study framed the concept differently: communication measures [53], (social) media abstinence [10,77], or (smartphone) digital detox [4,92]. While the findings of each study are useful for understanding the effects and mechanisms resulting from each intervention, it remains a challenge to combine them into a coherent picture of the outcomes of digital detox. The evidence about effects of digital detox at this stage is nuanced and involves positive and negative outcomes [88]. These interventions vastly differ in the tested period of the absence, the type of device or application that is excluded from use, and the timing of measurement [57].

2.3. Digital detox in the Information Systems field

When well-specified definitions and conceptualizations are lacking, as in the case of digital detox, this can lead to insufficient "theoretical glue" [91], a lack of parsimony [14], and limitations in developing a coherent body of work on the topic [50]. This is particularly problematic in the field of IS, which, besides theory development, has a strong interest in transitioning academic findings into practice and testing their applicability to the day-to-day realities of organizations and individuals [14,27]. In contexts such as digital transformation or digital work [5], digital detox is of the utmost interest to knowledge work organizations and individuals who suffer from impaired work–life separation imposed by digital technologies [7]. Here, the decreasing separation of work and leisure ICT may exacerbate negative side effects of prolonged use [36, 43]. Leisure ICT intrudes on the work domain and work-related IS intrudes on private life domains [11,82]. Against this backdrop, research has begun to connect digital detox with existing IS-related concepts such as *technostress* [44] or *use addiction* [78,83]. At the same time, researchers have introduced new concepts that are similar to the idea of digital detox but use IS-specific vocabulary such as *system use reduction* [51]. Table 1 differentiates existing concepts from the IS literature from the idea of digital detox.

Table 1 helps us to embed the concept of digital detox in contemporary IS literature. Across disciplines, we see inconsistencies in terminology that describe digital detox. These include discipline-specific synonyms such as *media diet* [3] and *information systems use reduction* [51,66], which come with their own definitions and frameworks. Digital detox interventions that are designed to capture the effects of this (non-) behavior empirically suffer from the absence of a clear theoretical framework that captures all possible facets of a digital detox strategy. For example, this framework should consider all possible combinations of technologies, types of actions, and the voluntariness of digital detox strategies to help future studies design valid interventions. To arrive at such a theoretical framework, we need to establish clear terminology through synthesizing the evolving body of literature around digital detox, and then organizing it into a new and consistent theoretical structure.

3. Review methodology

The methodology for this review comprises three steps: (1) a systematic literature search, (2) the development of a consolidated definition through a semantic analysis and subsequent evaluation (synthesis), and (3) the development of a theoretical framework

Table 1
Overview of concepts from the IS literature and how they relate to digital detox.

Concept	Definition	Comparison with digital detox	Supporting literature
Technostress	"Technostress is stress that users experience as a result of their use of information systems (IS) in the organizational context" ([75], p. 103)	A negative side effect of information systems use. Definition broadened from organizational use (e.g., [75]) to include leisure ICT also (e.g., [38]). Describes a symptom rather than a remedy.	[38,75]
Technology use addiction	"A psychological state of maladaptive dependency on the use of technology to such a degree that the following typical behavioral addiction symptoms arise: (1) salience—the technology dominates a user's thoughts and behaviors; (2) withdrawal—negative emotions arise if a person cannot use the technology; (3) conflict—the use of the technology conflicts with other tasks, which impairs normal functioning; (4) relapse and reinstatement—a user is unable to voluntarily reduce the use of the technology; (5) tolerance—a person has to use the technology to a greater extent to produce thrill; and (6) mood modification—using the technology offers thrill and relief, and results in mood changes" ([79], p. 1044)	Focuses on the psychological state of the user rather than the actions and corrective behavior to alter this state. Digital detox involves a voluntary absence from technology, whereas use addiction describes a state in which a user has already lost this ability.	[21,79,83]
ICT-related overload	"The emotional and cognitive state that occurs when an individual is unable to retrieve and process the information delivered by, or associated with, ICT within the required time limit that is needed for task completion" ([60], p. 804)	Focuses on the organizational context in which the benchmark conditions are related to work tasks. Like use addiction, it describes a psychological state rather than corrective action.	[12,60]
Discontinuance	"The cessation of the use of an organizational information system … that no longer contributes to organizational aims" ([41], p. 141)	Focuses on the use of (legacy) information systems in the organizational context and disregards leisure ICT and private use	[19,41,55]
System use reduction	Corrective IS use behavior that "changes use patterns targeted towards alleviating one's unpleasant states" ([51], p. 44)	Large overlap with digital detox. Focuses on social network sites as one form of leisure ICT. Includes self-observation, judgment, and self-reaction. Does not include abstaining from devices.	[51]

(theorizing) that can inform future research in IS. Fig. 1 provides an overview of the review methodology and the procedure we follow in this study.

3.1. Step 1: systematic literature search

As the first step of this review, we performed a systematic literature search. We approached the literature comprehensively, meaning that we aimed to collect all relevant articles in the literature based on a defined search strategy [87]. We defined articles that were concerned with the idea of digital detox as relevant to our search, even if the authors did not use the label "digital detox." We expected these articles to define, explain, conceptualize, or otherwise explicate their understanding of digital detox or related concepts.

In accordance with the objectives of this review, we proceeded sequentially. We started with the input phase, in which we searched for literature. Then we analyzed and synthesized the identified articles (input) to generate the output in the form of a concept matrix. We decided to include both journal articles and conference articles because with fast-moving topics such as digital detox, conferences are crucial in the research dissemination process. To ensure a high coverage of articles, we followed a keyword search across titles and abstracts and did not limit the time frame of the search.

As has been outlined, there are several disciplines that investigate digital detox, such as psychology, media and communication studies, psychiatry, and IS. Thus, we not only included IS journals and articles in our literature search but were open to other disciplines as well. We therefore selected the following databases to run our literature search on to ensure a broad coverage of relevant articles: Scopus,[1] AIS eLibrary,[2] ScienceDirect,[3] and SpringerLink.[4] These databases, except for the AIS eLibrary, are multidisciplinary.

We defined the initial keywords based on our related work section and scanned the existing literature using the Scopus database. In doing so, we found several more keywords that represent the idea behind digital detox. Based on the pre-identified keywords, we derived the following search string, which we ran through the databases: "media abstinence" *OR* "digital detox" *OR* "digital diet" *OR* "media diet" *OR* "digital unplugging" *OR* "system use reduction". As suggested by vom Brocke et al. [87], we added keywords and adjusted the search string when wee detected new keywords (e.g., use reduction) in the course of our literature search.

As soon as we completed the literature search and collected possibly relevant research articles, we screened all titles and abstracts based on four inclusion criteria to determine the relevance to our research question for each article. We included articles that investigated (1) some kind of digital detox intervention and (2) abstinence from digital devices (e.g., smartphones or a specific subset of applications), (3) were written in English, and (4) were peer-reviewed. We included only peer reviewed articles to ensure scientific relevance. All articles that were assessed as relevant based on their titles and abstracts and fulfilled the inclusion criteria were read in full to determine their absolute relevance. From all selected papers, metadata were extracted to an electronic data sheet that recorded title, authors, year of publication, used terms, and definitions. As Fig. 2 shows, this procedure resulted in a sample of 76 relevant articles.

Out of the 76 papers, 57 were published in journals and 19 were presented at conferences. Our search was not limited to a specific period, but we found that the first paper investigating the idea of digital detox was published in 2012. Table 2 represents the paper distribution among the years and reveals that the number of published articles consistently grows.

3.2. Step 2: development of a consolidated definition (synthesis)

To derive a consolidated definition of digital detox, we followed the approach suggested by Schlagwein et al. [61]. Based on this approach, we collected existing definitions of digital detox and assessed them systematically in a semantic analysis to determine the prevalent understanding of the concept. To do so, semantic facets (meaning-bearing units) of each definition are extracted and are then consolidated and aggregated into characteristics. Subsequently, we integrated the most common characteristics into a consolidated definition. While Schlagwein et al. [61] concentrate on definitions and explanations of the subject at hand ("sharing economy"), we also included the definitions of synonymous terms that we discovered in the literature.

[1] https://www.scopus.com/search/ (last accessed 21 March 2024)
[2] https://aisel.aisnet.org/do/search/advanced/ (last accessed 21 March 2024)
[3] https://www.sciencedirect.com/ (last accessed 21 March 2024)
[4] https://link.springer.com/ (last accessed 21 March 2024)

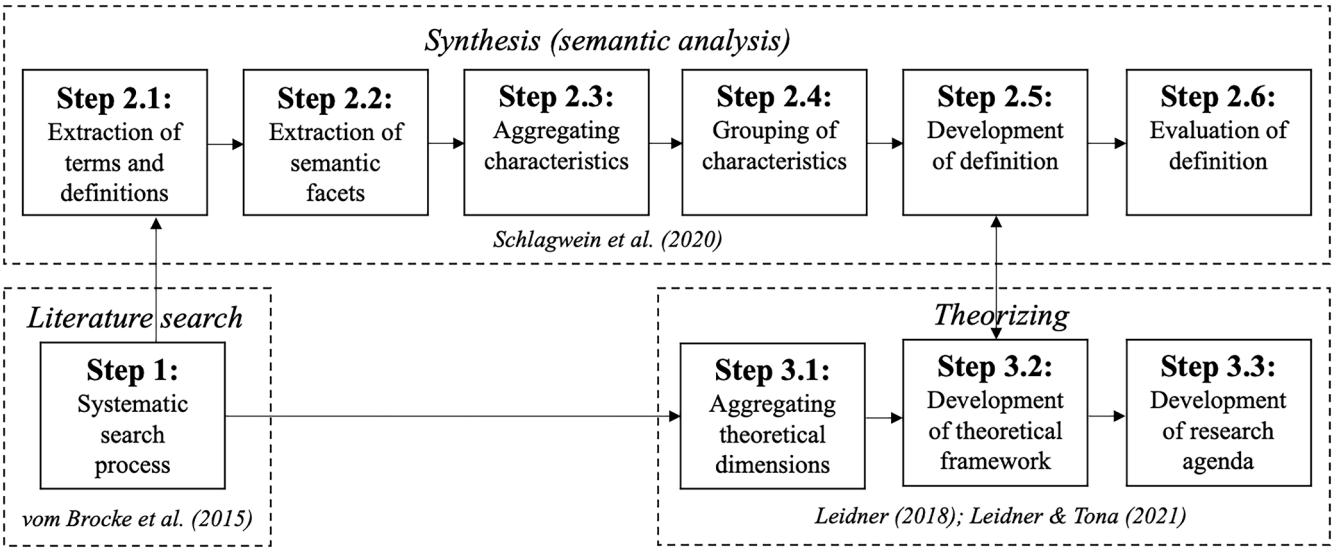

Fig. 1. Overview and procedure of the review methodology for this study.

Finally, we evaluated the consolidated definition. Schlagwein et al. [61] evaluated their consolidated definition of the sharing economy by applying it to ten organizational models that claimed to be sharing economies and checking whether their approaches fit the derived definition. This evaluation approach, however, is not applicable in our case. Instead, we decided to follow the approach of Elbeck and Bacon [17], who consulted experts to evaluate different definitions of *direct* and *indirect assessment*. The results of the evaluation are provided in the Appendix.

3.3. Step 3: development of a theoretical framework (theorizing)

In the third step, we aimed to move from synthesis to theorizing [31] and contribute to the theoretical advancement of an emerging research field [89]. This could be achieved by identifying conceptual commonalities in the literature sample and bringing it into a more abstract theoretical structure [52]. For this step, we built on the comprehensive literature search we carried out in step 1 and derived a theoretical framework to guide researchers in implementing and differentiating digital detox strategies. This step involved extensive brainstorming sessions (generating thoughts) based on the notes we collected from reading the literature (informing thoughts), organizing our ideas into tables (materializing thoughts), and the creation of multiple drafts of the framework (building theory elements from thoughts; [32]).

Two authors compared and discussed the theoretical dimensions until they reached full agreement. The two authors then created descriptions and tables for each dimension and discussed them with a third author. In case any problems with the descriptions came up, the two authors re-read some sections of the relevant articles (re-informing their thoughts; [32]) and engaged with existing theory such as the belief–action–outcome (BAO) framework [42]. The previously derived dimensions were then integrated into the higher-level structure of the BAO framework and applied to domain-specific examples (empirical studies with different digital detox strategies in their research designs), which provided insights into the usefulness of the framework [73].

4. A consolidated definition of digital detox

4.1. Extracting existing terms and definitions

To extract existing terms and definitions from the literature, we first examined the distribution of different synonymous terms that we identified within our sample of research articles. These terms were mentioned either in the title, in the abstract, among the keywords, or in the full paper. In total, 27 different terms were used that aimed to describe the idea of digital detox. While the most common one was *digital detox* (38), the 33 remaining articles used other terms to describe the same phenomenon. Moreover, 14 articles used digital detox in addition to one of the other terms (e.g., unplugging *and* digital detox). For a better overview, we categorized the terms into five categories by analyzing similarities and differences of the terms: *abstinence, detox/diet, disconnection, restriction*, and *-free*.

Out of the 76 papers in the sample, 27 included a definition or proper description of the respective used term(s), and the remaining 49 papers used their terms without a definition or a concrete description. In total, 29 different definitions or descriptions were found in the 27 papers that included a definition (some papers introduced more than one term). In total, 13 terms were defined or explained properly; however, some terms (4) matched more than one definition. Table 3 provides example definitions for each term.

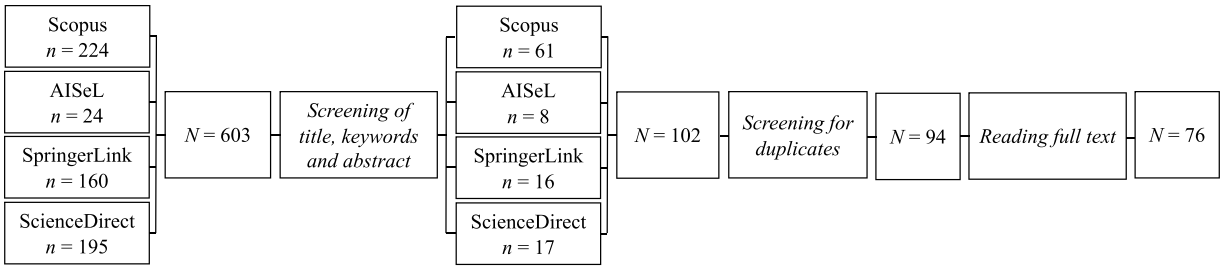

Fig. 2. Literature search process.

Table 2
Paper distribution in outlets and years.

Type/Year	'12	'13	'14	'15	'16	'17	'18	'19	'20	'21	'22	'23	Sum
Conference	0	1	0	0	1	3	3	2	5	1	1	2	**19**
Journal	1	0	0	2	3	2	6	2	17	8	7	9	**57**
Sum	1	1	0	2	4	5	9	4	22	9	8	11	**76**

4.2. Extraction, analysis, and aggregation of semantic facets

The next steps toward a consolidated definition included the extraction, analysis, and aggregation of semantic facets and shared characteristics from the definitions. Consequently, we captured all semantic facets of the definitions under study, coded them, and built characteristics for these facets by analyzing their wording, manifestations, frequency, and consistency in the definitions. One example of coding is the semantic facet of "voluntary non-use," which refers to individuals deciding consciously and voluntarily to conduct a digital detox. This is explicitly stated in some definitions. In total, we identified 74 distinct semantic facets, which are presented in the first column of Table 4. For our 74 distinct semantic facets, we derived 19 characteristics, which are outlined in the second column of Table 4.

4.3. Developing the definition

We then examined the commonness of the derived characteristics among the definitions. To do so, we mapped them against the existing definitions. Subsequently, we inspected in which way the characteristics were included in each definition: explicitly included (+), included by implication (+), explicitly excluded (-), excluded by implication (-) or absent from any consideration (0). To give an example, we considered the characteristic "overload" to be explicitly stated when it was expressed in the following way: "in order to avoid or recover from digital stress and overload" ([62], p. 1). Furthermore, the characteristic "intentionality" was included by implication in the definition from Syvertsen and Enli [72]: "efforts to take a break from online or digital media for a longer or shorter period, as well as other efforts to restrict the use of smartphones and digital tools" ([72], p. 1270).

To analyze the commonness of the characteristics, the numbers of inclusions were counted across all definitions. We not only counted the inclusions but also weighted them with the number of citations of the research article with the definition holding the characteristic in other sources. Consequently, when a definition was cited many times, the count for the characteristics of the definition was higher, as these characteristics can be assumed to be confirmed by more other articles or authors [61]. The weight for a characteristic was doubled when a definition was cited by three to nine sources, and it was tripled for definitions that were cited by more than 10 sources [8]. The implicit and explicit inclusions of the characteristics regarding each definition, as well as the inclusion count and weighted inclusion count, are summarized in Table 5.

To develop a consolidated definition of digital detox, we developed a semantic building block for each of the six theoretical dimensions: *Intentionality, Time frame, Action, Technology, Driver,* and *Outcome*. To do so, we identified the most common conceptual characteristics for each dimension to mirror the consensus about what constitutes digital detox. To determine the commonness, the inclusion count and the weighted inclusion count were considered (see Table 5). Furthermore, the applicability of the given characteristics was discussed. Some slight rewording of characteristics was done for syntactic and semantic reasons when integrating the characteristics to a consolidated definition. To evaluate the consolidated definition, we adapted the approach of Elbeck and Bacon [17]. It suggests evaluating definitions regarding *direct* and *indirect assessment* by retrieving input from assessment experts. The authors argue that a judgement sample or purposive sample can be used for the evaluation process, since what is required is not a cross-section of opinion but various perspectives offered by experts [49]. When research questions can be answered with logic rather than with personal opinions, a small sample of experts are sufficient to derive actionable results [17]. Therefore, we conducted a survey with eight experts to evaluate the consolidated definition. The proposed definition of digital detox was rated the best definition by five out of eight (62.5 %) experts. More information about the experts and the results of the evaluation can be found in the Appendix. The qualitative feedback included suggestions such as shortening the definition and reducing the emphasis on less important dimensions of digital detox. The final consolidated definition after implementing the feedback from the experts reads as follows:

> *Digital detox involves an intentionally set time frame in which individuals reduce the use of one or more digital device(s) and/or application(s) to cope with or prevent negative side effects of this use to foster a healthy and balanced relationship with technology.*

5. A theoretical framework for digital detox strategies

5.1. The "Intentionality" of digital detox

We found the "intentionality" aspect of digital detox to be crucial in existing definitions. The studies under scrutiny referred to this aspect either implicitly by adding words such as "to choose" or "consciously" [25,72] or explicitly with formulations such as "deliberately engaging" or "voluntary non-use" [4,22,62,63]. Although not all studies characterized digital detox explicitly as voluntary, we did not find any studies that understood it as involuntary or forced [46]. Some digital detox interventions included mechanisms that made it difficult or impossible to access digital devices and/or applications—for example, through website blockers or a smartphone application that restricts access to social media or e-mail. However, the decision to engage in digital detox always remains voluntary.

5.2. The time frame of digital detox

Most existing definitions include a statement about the time frame of a digital detox intervention. This refers to the length of a digital detox intervention, that is, the period in which no or less leisure ICT is used. Most definitions do not precisely declare the range of this time frame. However, the fact that a digital detox is only temporary and can be terminated by the individual at any time is essential to its conceptualization. Most definitions that consider setting a time frame to be important describe it as a "certain period of time," "a period of time," "short-term period," or "regular periods" [4,63,70,72,90]. All these wordings have in common that the word *period* is used, underpinning the temporal nature of digital detox and that each digital detox has a clear beginning and end. Others refer to the time frame as "to take a break" or "time outs" [57,62,72]. The meaning behind the words "break" and "time outs" refers to a time during which someone has the chance to recover from something that has been very consuming. In that sense, a break or time out is taken to regain energy or resources for the time after the break/timeout is over. Like a "period," a "break" or "time out" is limited in length. Moreover, some definitions referred to "time limits" [22,94]. Here, not the period in which the digital detox is conducted is limited but the time for which leisure ICT is used, for example, measured in hours per day. Thus, "time limits" differs from "period" and "breaks," but still aims to reduce time of exposure.

Table 3
Definitions and examples for each term.

Term (total # of definitions)	Example Definition	Source
Social media abstinence (1)	Temporarily abstaining from using social media.	[90]
Technology un-use (2)	Emphasizing the transitional capabilities of users to (dis-) engage with technology to various degrees over time.	[28]
Category: Detox/Diet		
Digital detox (15)	Digital detox describes efforts to take a break from online or digital media for a longer or shorter period, as well as other efforts to restrict the use of smartphones and digital tools.	[72]
Digital diet (1)	Knowing how to use the technological tools and applications to deal with information overload; learning how to manage attention and cognitive overload; and, finally, establishing regular periods of digital disconnection.	[65]
Social media detox (1)	Disconnection and non-use with the focus on people who are disconnected because of digital divides, who give up or abstain from social media as means of ideological resistance or have different strategies for limiting their use of specific platforms.	[33]
Category: Disconnection		
Disconnectivity (3)	Temporarily switching off devices.	[47]
Voluntary digital disconnection (1)	A deliberate (i.e., chosen by the individual) form of non-use of devices, platforms, features, interactions, and/or messages that occurs with higher or lower frequencies, and for shorter or longer periods of time, after the initial adoption of these technologies, and with the aim of restoring or improving one's perceived overuse, social interactions, psychological well-being, productivity, privacy and/or perceived usefulness.	[46]
Social media disconnection (1)	The intentional self-regulation of one's social media use, varying from explicit or permanent nonuse to the less absolute ways where one places limits on their social media use.	[48]
Unplugging (1)	Disconnected from all digital technology to withdraw from all screen time, including television, computers, and phones.	[76]
Category: Restriction		
Media refusal (1)	A performative mode of resistance, which must be understood within the context of a neoliberal consumer culture, in which subjects are empowered to act through consumption choices—or in this case non-consumption choices—and through the public display of those choices.	[25]
Media resistance (1)	The negation of media technologies is seen to articulate the resisters commitment to self-determination, real-life social relations, and more sustainable forms (simple) of living.	[25]
Restricted use (1)	Impose time limit for browsing friends' social pages, clean up contact lists, mute alerts of new feeds, stop using add-on features with duplicated functionalities.	[94]
Category: Free		
Digital-free (2)	Spaces where Internet and mobile signals are absent or digital technology usage is controlled.	[34]

Note that while Table 3 presents only one exemplary definition per term, several terms have multiple definitions that were used in the literature. These findings reinforced our efforts to develop a consolidated definition of digital detox.

Table 4
Grouping of semantic facets to characteristics and theoretical dimensions.

Semantic Facets	Characteristics	Theoretical Dimension
"a certain period of time", "a period of time", "short-terms periods", "regular periods", "a specific period of time", "over time"	Period	Time frame
"timeouts", "to take a break", "temporarily"	Break	
"time limit"	Limit	
"choose", "consciously", "deliberately engaging", "voluntary non-use", "deliberate", "intentional"	Intentionality	Intentionality
"abstain", "detoxing", "resist", "restrict", "avoid", "leaving", "negating", "non-use", "refrain", "disengage"	Abandoning	Action
"control", "manage", "to deal with", "limit", "self-regulation", "reduce exposure"	Controlling	
"disconnect", "switching-off"	Disconnecting	
"social media", "social networking sites"	Social media	Technology
"e-mails", "applications", "subset of smartphone use", "digital tools", "features", "platforms", "digital technologies"	Applications/tools	
"cell phones", "smartphone", "computer", "electronic devices", "digital devices", "television", "technology"	Device	
"Internet", "new communication technologies", "media", "online media", "digital media", "digital world", "mobile signals", "media technologies", "messages"	Digital media	
"overworked", "overuse", "over-connected", "permanent connected"	Overuse	Drivers
"digital stress", "stress"	Stress	
"information overload", "cognitive overload"	Overload	
"reminder that life is not meant to be lived through your cell phone", "focus on the physical world", "leaving digital world", "reconnect to nature", "productivity"	Focus on offline world	Outcome
"reconnect to each other", "improve the quality time spent with family and friends", "real-life social relations", "social interactions", "privacy", "perceived usefulness"	Focus on social activities	
"balance", "awareness", "health", "focus", "meaningful connection", "psychological well-being"	Mindfulness and health	

5.3. The action in digital detox

This dimension describes the behavior individuals engage in while conducting a digital detox. Three characteristics have been derived from the definitions: "abandoning," "controlling," and "disconnecting." The characteristic "abandoning" refers to the process of waiver or renunciation. It conveys the meaning that individuals abstain from something, for example, by not consuming it. In general, this characteristic contains semantic facets such as "abstain," "resist," "restrict," "avoid," "leaving," "negating," "non-use," "refrain," and "disengage" [25,56,72,90], which all reflect different ways of renunciation. Furthermore, the term "detoxing" goes one step further and implies some sort of cleansing from a "toxic" substance or behavior. The characteristic "controlling" is mirrored by semantic facets such as "control," "manage," "deal with," or "limit" [34,63,65], which emphasize the active role of the individual in conducting a digital detox. The last characteristic can be seen as a metaphor and is called "disconnection." In that sense, the terms "disconnecting" and "switching off' are used, which refer to the process of cutting digital connections [4,22,33,63,69], implying that users are psychologically or physically tied to devices and applications. In general, we found the characteristic of "controlling" to have the most consensus among the reviewed literature.

Table 5
Cross-matrix of characteristics and theoretical dimensions in digital detox definitions.

	Intentionality	Time frame			Action			Technology				Driver			Outcome		
Theoretical dimension/ characteristic	Voluntariness	Period	Break	Time Limit	Abandoning	Controlling	Disconnecting	Social media	Application (s)/tool(s)	Device (s)	Digital media	Overuse	Stress	Overload	Refocus on offline world	In-person sociability	Mindfulness & health
Inclusion count	10	14	5	3	9	4	11	11	10	11	13	5	4	4	6	4	6
Weighted inclusion count	25	28	10	6	17	9	26	22	22	23	30	12	5	7	9	10	12
[6]	0	0	0	0	0	0	0	0	0	+	0	0	0	0	(+)	0	0
[76]	0	0	0	0	0	0	+	(+)	(+)	(+)	(+)	0	0	0	0	0	0
[47]	0	+	0	0	0	0	+	0	0	0	0	0	0	0	0	0	0
[65]	0	+	0	0	0	+	+	0	+	0	+	+	(+)	+	0	0	(+)
[69]	+	0	0	0	0	0	+	0	0	0	0	+	0	+	+	+	0
[4]	+	+	0	0	0	0	+	+	+	0	+	0	0	0	0	0	0
[25]	(+)	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0
[25]	0	0	0	0	+	0	0	0	0	0	+	0	0	0	0	+	+
[33]	0	0	0	0	0	0	+	+	0	0	0	0	0	0	0	0	0
[34]	0	0	0	0	0	+	0	0	0	0	(+)	0	0	0	0	0	0
[22]	0	0	0	+	0	0	+	0	0	+	0	0	0	0	+	0	+
[22]	+	0	0	0	+	0	0	0	0	0	+	0	0	0	0	0	0
[16]	0	0	0	0	0	0	0	(+)	0	+	(+)	+	0	0	0	0	0
[45]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	+	0
[63]	+	+	0	0	0	+	+	0	0	+	0	0	0	0	0	0	0
[70]	0	+	0	0	+	0	0	(+)	(+)	(+)	(+)	0	0	0	0	0	0
[72]	(+)	+	+	0	0	0	0	0	+	+	+	0	0	0	0	0	0
[90]	0	+	0	0	+	0	0	+	0	0	0	0	0	0	0	0	0
[94]	0	0	0	+	0	0	0	0	0	0	0	0	0	0	0	0	0
[28]	0	+	0	0	+	0	0	(+)	(+)	(+)	+	0	0	0	0	0	0
[57]	(+)	+	0	0	+	0	0	0	0	+	0	0	(+)	0	+	0	(+)
[56]	0	+	0	0	+	0	0	+	0	0	+	0	0	0	0	0	0
[62]	+	0	+	0	0	0	0	0	0	0	+	0	+	+	+	0	(+)
[24]	0	+	0	0	0	0	0	(+)	(+)	(+)	(+)	+	+	+	0	0	0
[57]	0	0	+	0	0	0	0	0	+	+	0	0	0	0	0	0	0
[67]	0	+	0	0	0	0	0	0	0	0	0	0	0	0	+	0	0
[46]	+	+	0	0	0	0	+	0	(+)	0	0	+	0	0	0	(+)	(+)
[48]	+	0	+	+	0	(+)	+	+	0	0	0	0	0	0	0	0	0
[23]	0	(+)	+	0	(+)	(+)	0	+	(+)	0	0	0	0	0	0	0	0

5.4. The technology in digital detox

In general, it can be differentiated between digital detox interventions that are concerned with restricting the exposure to (1) certain devices, (2) applications, or (3) contents. Four characteristics have been derived for this dimension, namely "applications/tools," "devices," "digital media," and "social media." Applications and tools include "e-mails," "applications," "subsets of smartphone use," and "digital tools" [65,76]. Thus, existing digital detox definitions define very precisely exactly what individuals restrict. Yet these definitions mostly focus on just one of these characteristics, depending on the purpose of the respective study. Further, the semantic facet "device" distinguishes accurately between different physical devices that can be waived. In this context, "cell phones," "smartphones," "computers," "electronic devices," "digital devices," and "television" are mentioned [57,63,70]. The characteristic "digital media" does not place the physical devices in focus but the virtual aspects of such devices. For instance, this includes "Internet," "new communication technologies," "media," "online media," "digital media," and "digital world" [34,62,72]. Another characteristic that ties in with the previous one but was mentioned most frequently was "social media" [4,16,70].

5.5. The drivers of digital detox

The dimension of "drivers" aims to capture the motivators and triggers for individuals to engage in digital detox. In general, overuse, stress, and overload, but also the intrinsic motivation to prevent (rather than to cope with) side effects of leisure ICT use, can be differentiated. Some studies refer to feelings such as being "overworked," "over-connected," or "permanently connected" [16,65,69]. Another factor that can be seen as a motivator for a digital detox is stress. Definitions that include this characteristic frame it as "digital stress" or simply "stress" and assume that the use of digital devices and constant connection can lead to individuals feeling stressed [24,62,65]. The third characteristic refers to the feeling of overload that can occur when using digital devices and consuming digital content, also referred to as "information overload" or "cognitive overload" [24,62,65,69].

5.6. The outcome of digital detox

In existing definitions, three characteristics could be identified that refer to outcomes: "focus on the offline world," "focus on social activities," and "mindfulness and health." The first two have in common that they stress the normative view that the "digital world" should be left in order to "reconnect to nature," "reconnect to each other," and "improve the quality time spent with family and friends" [22,62,67,69]. The characteristic "mindfulness and health" is captured in definitions that stress the need for "balance," "awareness," "health," "focus," and "meaningful connections" [22,62,72]. Among the definitions, the re-shifting of one's focus to the "offline world" and improving "mindfulness and health" were mentioned most frequently. These outcomes mentioned in the literature contribute to the desired psychic state of finding balance, also referred to as "homeostasis" [77].

5.7. Developing the theoretical framework

Based on the six theoretical dimensions we identified from synthesizing the existing literature and their conceptualizations of digital detox, we now derive a theoretical framework. We decided to develop the framework around the aspect of "strategy," as this aspect of digital detox was a recurring theme (e.g., [23,33,94]) that did not fit in with the other dimensions (intentionality, time frame, action, technology, driver, and outcome), because it has a higher grade of abstraction. Yet the term "strategy" or "strategies" speaks both to individuals conducting digital detox and to researchers and organizations designing digital detox interventions. A framework of digital detox strategies is needed because currently, empirical studies have tested some digital detox characteristics while disregarding others [57]. For example, [63] asked participants to abstain from their smartphones (devices), whereas Whelan et al. [90] did the same with social media (applications). Although both papers test digital detox strategies, the boundary conditions are vastly different. A framework that integrates the theoretical dimensions of the digital detox strategies we have identified in our review of the literature will provide researchers with the opportunity to design digital detox interventions more effectively. Research designs that aim to test digital detox strategies should cover every dimension (technology, driver, action, time frame, and outcome). This will increase the replicability of the individual study and, over time, also allow researchers to build cumulative knowledge about the effectiveness of particular digital detox strategies. Rather than asking "does digital detox work?" [63], we will be able to ask "which digital detox strategy works for what?"

To organize the theoretical dimensions we identified in our review effectively, we turn to the BAO framework [42]. This higher-level framework provides a coherent theoretical structure in which we can embed our strategic dimensions of digital detox. According to the BAO framework, macro-level technological advances shape micro-level beliefs and other psychic states related to the challenges and potentials that come with this change (belief formation). These beliefs translate into individual actions (action formation), which affect the social and organizational systems in which the individual is situated (outcome). This is consistent with what we observe with digital detox. Here, emerging macro-level trends in how leisure ICT are designed lead to (undesirable) micro-level psychic states. These trigger actions to alleviate these states and restore a desired state. The outcomes of digital detox then feed back into the macro-level environment, for example, through changes in the design of technologies (e.g., a feed-stopper in social media or digital wellbeing functionalities of smartphones).

We structured the theoretical dimension in a sequence that aligns with the BAO framework. Furthermore, we decided to merge the dimensions of "intentionality" and "action." Voluntariness was a central theme in the reviewed literature, and we found no examples for involuntary or "forced" digital detox. The final framework is provided in Fig. 3.

The framework breaks down the *essential* dimensions of digital detox strategies at an abstract level through the six theoretical dimensions we derived from the literature. Within each dimension, a digital detox strategy can comprise one or more characteristics. Regarding the sequence of digital detox strategies, technologies and drivers impact belief formation around the idea that the use of these technologies might be problematic. This is followed by a voluntary action or actions, which are restricted in time. Finally, this action formation may result in outcomes that mitigate the initial driver(s) of these actions or other positive and/or negative outcomes. The characteristics in each dimension, such as the three types of outcomes that are listed in the framework, are representative of the reviewed literature. However, this does not mean that there cannot be others, especially in the "driver" and "outcome" dimensions. Here, the framework aims to be an impetus for researchers to measure and reflect upon all sorts of variations in these dimension.

The framework allows a *flexible* understanding of what constitutes a digital detox. For example, a possible digital detox strategy is a one-day break each week (time frame) in which a user voluntarily abandons (action) their smartphone (technology) due to stress symptoms (driver) with the goal of refocusing on the offline world (outcome). At the same time, another viable digital detox strategy would be voluntarily limiting the use of TikTok, Facebook, and e-mail (a combination of technologies) to one hour per day (time frame) to control (action) the feeling of information overload and stress (a combination of drivers) and prevent negative mental health (outcome). Providing domain-specific examples can also be helpful in demonstrating the usefulness of a theoretical framework [73]. In their study, Wood and Muñoz [92] aimed to test the effects of digital detox on student learning, because digital technologies had been said to inhibit some learning outcomes for students in higher

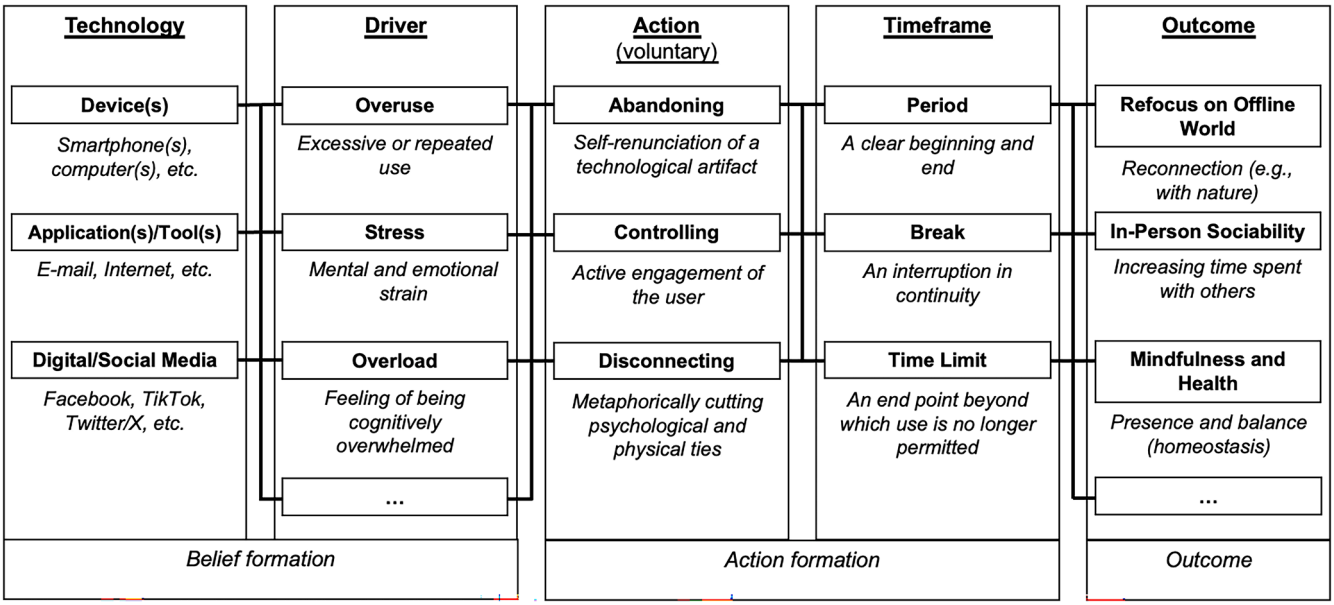

Fig. 3. Theoretical framework of digital detox strategies.

education (driver). They asked participants (students) to abstain (action) from the Internet, television, and all other electronic media (technology) for 48 hours (time frame) while doing an assignment for a marketing class.[5] Students reported higher awareness of their surroundings during the digital detox, contemplated their dependency on digital technologies, and some experienced social isolation (outcome). In another study, Anrijs et al. [4] aimed to investigate whether a digital detox intervention could decrease physiological stress (driver). After one week of regular smartphone use, participants were asked to use their smartphones (technology) as "dumb phones," restricting them from accessing the Internet (action) for one week (time frame). During the digital detox week, the participants experienced less physiological stress (outcome). Both examples show that our framework covers the essential dimensions of a digital detox strategy (technology, driver, action, time frame, outcome) and is flexible enough to allow any combination within each dimension (e.g., multiple technologies in Wood and Muñoz [92], or one specific driver in Anrijs et al. [4]). This makes the framework useful for anyone who aims to design a digital detox intervention or wants to compare different interventions with respect to their characteristics in each essential dimension.

6. An agenda for Information Systems research

In the following, we outline a research agenda for IS scholars to continue to empirically investigate and theorize digital detox. Although the recommendations below are tailored to IS research, a multidisciplinary and pluralistic approach is needed to advance this research stream and to build a rich cumulative tradition.

Design-oriented studies are needed to explore how *technology* can facilitate balanced use "by design." In recent years, the IS discipline has cultivated a rich body of knowledge about gamification and other persuasive system designs [64]. These approaches should be used not only to maximize use but also to nudge users to minimize it if this is in alignment with achieving their desired outcomes. Moreover, the design of technological artifacts can implement artificial intelligence (AI) to learn about individual user preferences to create better user experiences. For example, past research has explored stress-sensitive information systems [2], which monitor vital parameters and notify the user about signs of technostress. Combining advances in neuro IS with the capabilities of AI will constitute one of the key frontiers of digital detox research. However, a challenge of this research stream will be to moderate possible conflicts and dilemmas involving algorithmic bias, business models, and user privacy.

The *drivers* that underlie an individual decision to conduct a digital detox have been investigated primarily from a coping logic. For example, experiencing technostress is a symptom individuals take as the trigger to reason about their technology use and contemplate potential corrective behavior. This coping logic is deeply rooted in psychological theory [29] and has immensely influenced the IS technostress literature [38,75]. The broader behavioral concept of digital detox makes it possible to include additional logics such as prevention or self-actualization. These intrinsic "toward" logics will add nuance to the understanding of digital detox, as they complement the extrinsic "away from" logic of psychological coping. However, research has yet to unpack the theoretical implications of investigating digital detox through the lenses of these logics. Therefore, we recommend that fellow IS researchers not only extend the prevalent coping logic to digital detox but also open this research stream to other constructs that can explain digital detox. In addition, it is imperative to rethink design choices for leisure ICT, including social media platforms, that maximize prolonged use and consequently contribute to adverse side effects of technology use. IS scholarship, in particular, can contribute to finding and evaluating alternative platform architectures that forgo "algorithmic audiencing" [58] and the exploitation of user needs that leads to use addiction [18]. Here, intensified efforts to explore decentralized approaches [13] that replace a central provider with the motivation to push exploitative designs with user-based governance are another possible path in mitigating drivers for digital detox. This translates into putting user preferences (or removing detrimental features that users are unaware of) at the center of IS design.

The dimension of *actions* (voluntary) is important to understand and delineate digital detox in relation to other IS-related constructs, such as use addiction or discontinuance. For example, we do not know to what extent digital detox can support the treatment of IS use addiction. As IS use addiction is defined as a psychological state that inhibits the ability to change one's behavior voluntarily [79], future research will need to clarify the relationship between digital detox and IS use addiction. Moreover, if we extend digital detox research from leisure ICT to

[5] The action was voluntary because students who did not want to commit to the digital detox could take on a different role during the 48-hour period.

organizational contexts, questions about (self-)managing digital detox [44] and discontinuance behavior arise [19,41,55]. As the use of leisure ICT and instrumental work-related ICT increasingly overlap [11,82], we recommend that future research endeavors on digital detox consider this blurring separability of private and work-related IS use.

Research that tries to establish causalities of digital detox strategies faces several challenges. Cross-sectional research designs cannot account for the long-term effects of digital detox. On the other hand, experiments that take place over an extended *time frame* often fail to control for confounding variables. We recommend that IS researchers first generalize carefully to their samples and theories. Statistical generalization will only be possible if we are confident in making certain judgment calls such as the principle of uniformity of nature (i.e., the future will resemble the past; [30]). Consequently, we recommend that future researchers not generalize from their empirical studies to one theory of digital detox but develop more specific constructs and causalities that contribute to the larger edifice of digital detox theory.

At this point in time, the *outcomes* individuals pursue with digital detox point to a misalignment of IS design and user preferences. Currently, leisure-ICT is designed to maximize use because it benefits the business model of technology vendors. However, we recommend that future research explore alternative routes of IS design that maximize user preferences. For example, social media platform vendors have been criticized for designing algorithms that maximize prolonged use through persuasion. We now see up-starts of decentralized social media platforms that have no incentive to maximize use but seek to maximize user preferences [40]. One possible direction for IS researchers would be to explore the design of emerging, decentralized social media platforms from a digital detox perspective to not reintroduce the issues of centralized social media to those platforms.

Moreover, existing research has examined outcomes of digital detox mostly in isolated settings. However, like mindfulness, digital detox can be conducted repeatedly and in all variations within the use history of an individual or a broader, organized context [71]. This raises questions about the future behavior of a user resulting from their digital detox experience. We do not know how the outcomes of one digital detox inform future digital detox interventions. The motivation might change from coping to prevention or from involve relapse or cheating. Therefore, processual theories of digital detox are needed that explain the possible pathways between digital detox interventions. In this regard, we also do not know how users evaluate digital detox and what constitutes a "successful" or "failed" digital detox.

Examining digital detox strategies to reduce the negative side effects of IS use is a multi-faceted research stream. The level of analysis is not limited to the individual user but extends to the organizational level, on which individuals engage with IS. Here, IS research can make contributions by providing rich descriptions of digital detox [39]. This can involve cross-sectional but also longitudinal studies that capture the experience users have when abstaining from IS use. At the organizational level, opportunities exist for researchers interested in exploring the possibilities for employers to develop policies and training to support individuals through a collective effort. To sum up these research opportunities, Table 6 provides an overview of possible research questions for future IS research on digital detox.

6.1. Practical implications

The findings of this paper enable individual knowledge workers, including those in management positions, to adopt and use best practices and findings from the academic research we draw on. We recommend that organizations implement digital detox principles into professional conduct proactively to support individuals in using leisure-ICT but also work-related IS in a healthy and balanced way. The outcomes of our framework do not specifically mention knowledge worker performance, as existing literature is less concerned with this independent variable. However, the outcomes we discussed may certainly be understood as prerequisites for high-performing knowledge workers. We invite practitioners to derive organizational measures such as policies and training based on our framework not only to counteract but also to proactively prevent negative side effects of IS use and support a workforce that is adapt at maneuvering the pitfalls of contemporary technology portfolios that span across work and private life domains.

6.2. Limitations

Although we did not limit our search for digital detox literature to specific disciplines or time frames, we still may have overlooked works that have been within the research scope. Furthermore, we tried to be as clear and as accurate as possible when deriving the definition during the semantic analysis. Still, the semantic analysis requires a lot of interpretation by the researchers and was therefore inherently subjective. We tried to overcome most of the subjectivity by reporting each step of the definition development. However, other researchers might have come to different results. During the expert evaluation, we compared our definition with two other existing and widely cited definitions. As we consulted digital detox experts, they most likely were familiar with the other two already existing definitions and might therefore have been biased.

7. Conclusions

This paper presents a consolidated definition and theoretical framework of digital detox strategies based on a review of multidisciplinary literature. In line with the findings from this review and our theorizing, we identified future directions for IS research on digital detox. These contributions help to gain a better understanding of the phenomenon of digital detox and allow empirical research to be benchmarked against this consolidated understanding, which increases validity and replicability for future work. Our research agenda, which proposes multiple pathways and future directions for scholarship involving digital detox, will aid IS researchers in elevating the concept from a buzzword to an important concept that is representative for critical and thought-provoking research that shines light on the dark sides of technology use.

CRediT authorship contribution statement

Julian Marx: Writing – original draft, Visualization, Investigation, Formal analysis, Data curation. **Milad Mirbabaie:** Resources, Methodology, Formal analysis, Conceptualization. **Ofir Turel:** Writing – review & editing, Resources, Conceptualization.

Appendix A

Results of the expert evaluation

The experts who evaluated our consolidated definition are researchers in fields such as neuroscience, anthropology, psychology of health, and IS. Out of the eight experts, five were female (55.6 %), two were male (22.2 %), and one was diverse (11.1 %). One expert had a master's degree; the others had doctorates. To control the levels of expertise, we asked the participants to rank their knowledge regarding digital detox on a scale from 1

Table 6
Possible research questions for future IS research.

Theoretical dimension	Relevant IS topics	Possible research questions
Technology	IS design, Digital innovation and digital business models	• How do effects of digital detox strategies that restrict the use of one vs. multiple technologies differ? • How can gamification and other persuasive techniques inform the design of technology that makes digital detox obsolete? • What are digital business models that support user preferences and well-being? • How can a digital detox perspective inform design requirements of information systems? • What are incentives for designers to maximize user preferences instead of time used? • How can AI be used to optimize IS for balanced rather than prolonged use?
Driver	IS user behavior, engagement, and consequences, IS policy, IS implementation and adoption	• How do different drivers influence people's choice of a digital detox strategy? • What are the underlying motivational logics of digital detox beyond coping? • What are intrinsic motivators of digital detox? • How do motivators for digital detox change over time? • How does digital detox relate to technostress, IS use addiction, and discontinuance? • How can we (or should we) differentiate between private and professional digital detox? • What are managerial and organizational stakes in designing digital detox policies and training? • Can there be a form of externally enforced rather than intrinsically motivated digital detox?
Action (voluntary)	IS user behavior, IS philosophy	• What are positive effects, negative effects, and unintended side effects of digital detox? • How do effects of digital detox strategies that involve one vs. multiple actions differ? • How can we compare studies that test the effects of different types of digital detox strategies? • How do people experience digital detox phenomenologically?
Time frame	IS user behavior	• What are longitudinal effects of digital detox? • How should researchers control for confounding variables? • How does digital detox unfold as a process? • How does the experience of one digital detox intervention inform the next? • What are temporal dimensions of belief and action formation in the context of digital detox?
Outcome	IS user behavior, IS in healthcare, IS in business and society	• How do users evaluate digital detox? • How do the outcomes of digital detox inform future behavior? • To what extend can digital detox support the treatment of IS use addiction? • How does digital detox allow for prevention of negative side effects of IS use rather than coping with them? • Why does digital detox fail? • What are causal relationships between digital detox strategies and well-being, performance, and user satisfaction? • What are possible effects of digital detox on a population level? • What is the relationship between different digital detox strategies and knowledge worker productivity?

representing the least expertise to 10 representing the most. The level of expertise was relatively high, with a mean of 7.75.

Within the survey, three different definitions were presented to the experts, one after another, in randomized order to avoid order bias. Out of the three definitions, two definitions can be found in the frequently cited digital detox literature and one was our consolidated definition. The sources of the definitions found in the literature were not revealed to the participants. A 100-point scale was used, where a higher score indicated a definition of higher quality. Further, the experts were asked to provide short feedback on each definition in the form of a qualitative comment to explain positive as well as negative aspects of each definition. Descriptive statistics of the evaluation are summarized in Table A.1.

Table A.1
Descriptive statistics of definition ranking ($N = 8$).

Definition	*M*	SD	Min	Max
Alternative 1	63.38	28.20	19	96
Alternative 2	49.25	33.90	20	100
Proposed	65.38	21.53	32	100

The proposed definition of digital detox was rated the best by five out of eight (62.5 %) experts. Within the survey, we also asked the experts to provide qualitative feedback. Analysis of this data suggests that the proposed consolidated definition would be an improvement over those in the existing literature [17].

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