
Implementing assisted living technologies under resource constraints: Which frameworks help?

Christian Wittrock*

The Work Research Institute, Innovation and Enterprise Development,
Oslo Metropolitan University, P.O. Box 4, St. Olavs plass, NO-0130
Oslo, Norway.
E-mail: cwit@oslomet.no

Marte Skaug

Lunner Health Center, Vannebos veg 151, NO-2743 Harestua, Norway.
E-Mail: Marte.Skaug@lunner.kommune.no

Lis Ribu

Faculty of Health Sciences, Department of Nursing and Health
Promotion, Oslo Metropolitan University, P.O. Box 4, St. Olavs plass,
NO-0130 Oslo, Norway.
E-Mail: lis.ribu@oslomet.no

* Corresponding author

Abstract: We survey organizational practices in a drive to implement assisted living technologies in the form of multidose dispensers in a mid-sized progressive municipality and contrast actual organizational practices with an established framework for the implementation of innovations. Where the encompassing framework presupposes a rational planning and forecasting process as well as an encompassing and cumulative data collection, practices resemble a muddling through with incremental trial-and-error processes, multiple disjoints in the lifetime of the project, and a garbage can decision-making style, heavily influenced by legitimacy concerns. While neglected by the implementation framework, findings are well explained by extant organizational theory. We suggest that established implementation frameworks may be out of touch with organizational realities faced by municipalities facing resource scarcity which – ironically – is the main driver for innovation efforts, and end by discussing scrum methods as a more relevant template for implementation and project management frameworks in such cases.

Keywords: Implementation; assisted living technologies; multidose dispensers; muddling through; garbage can decision model; diffusion, theory-practice fit.

1 Introduction

Assisted living technologies are widely theorized to enhance efficiency and quality in health care services, including the quality of life for users (Melting and Frantzen, 2015,

Boysen and Støle, 2016). Studies showcase opportunities for significant gains, premised on successful implementation (Hoffmann et al., 2018, Melting, 2017, Stokke et al., 2017). Therefore, implementing assisted living technologies such as virtual wards, GPS alarms, and multidose dispensers, has become a main concern in contemporary healthcare, in the hope of mitigating financial strain due to changing demographics. At municipality level, such efforts are predominantly carried out through various implementation projects through which management seeks to enhance the efficiency of operations. To this end, several guides have been developed, some of which are featured at national levels as the recommended route to good or ‘best practices’ for the implementation of innovations. Guides typically rely on mainstream implementation research. An example of one such guide is the Norwegian ‘Roadmap to service innovation,’ constituting a framework for e.g. the implementation of assisted living technologies (KS, 2018).¹⁾

In this paper, we consider the practical application of such frameworks, using the Norwegian framework as an example in the context of a drive to implement assisted living technologies in the form of GPS alarms and multidose dispensers in a mid-sized municipality in South-East Norway. We focus on multidose dispensers. We contrast actual undertakings in the municipality with the prescriptions and recommendations found in the framework. The framework became known to the municipality during the implementation efforts but was only applied in a scant fashion. We suggest that this is a property of how policy implementation typically functions, rather than being a deficit of the implementation efforts as such. We further suggest that our study highlights how many guides for the implementation of innovations are out of touch with what we already know about organizational adoption and adaption of innovations.

Implementation research has close affinities with research on the diffusion of innovations. The latter is concerned with the uptake of new ideas and practices in social systems, with a focus on social acceptability and legitimacy (Rogers, 2003). Neo-institutional diffusion scholars highlight how pursuit of legitimacy leads to the uptake of innovations, but not necessarily to full implementation (Tolbert and Zucker, 1983). Contrary to much work on diffusion, implementation research appears dominated by a rationalistic view of what implementation is and how organizations work. An authoritative and recently updated review of the field confirms this view, as it pictures the road to implementation as sequential steps in a stage model (Fixsen et al., 2005, Bertram et al., 2015). The implementation model pictures an ordered and well-orchestrated rational implementation, with considerable preparation efforts needed. The core of our Norwegian framework closely follows this review and logic of implementation. Likewise, the framework presupposes a cumulative data-collection for evaluation purposes, and a thorough clarification of organizational needs before embarking on any search processes with respect to suitable innovations.

However, organizations are far more than ordered and rational. In their comprehensive review of organizational theory, Scott and Davis (2007) suggest the broad categories of ‘rational systems,’ ‘cultural systems,’ and ‘open systems’ accounts. The two latter have become increasingly influential, as knowledge from the field of engineering is challenged by insights from e.g. psychology and sociology as the constituent knowledgebase in managerial thought (Shenhav, 1995). Organizational practices are seldom developed in a strait forward planned way, but most often through trial-and-error efforts with many setbacks (Mintzberg, 1989). In addition, planning efforts and organizational development are seldom governed by an exhaustive review of all available options against an equally exhaustive matrix of organizational needs, because of the

magnitude of such a planning and forecasting task (Lindblom, 1959, Rothmayr Allison and Saint-Martin, 2011). Similarly, decision-making has been shown to be less than linear and rational; often solutions find problems, rather than the other way round (Cohen et al., 1972, Simon, 1997). Such inconsistencies raise the question if and how current frameworks, based on ‘rational accounts,’ recommended for the implementation of service innovation aid the organizations, who – in theory – should apply them. Since frameworks are encompassing, this question is enhanced by the resource scarcity that innovation projects are theorized to mitigate, as there is a tradeoff between exploitation of organizational resources and knowledge on the one hand and the exploration of new avenues on the other (March, 1991).

We survey the implementation efforts with respect to multidose dispensers in a typical, but progressive, mid-sized Norwegian municipality, experiencing financial strain. We ask:

- How are implementation efforts conducted in a municipality, for whom the recommended framework is intended?
- How does the recommended framework appear to fit current organizational practices?

2 Research design and methodology

We regard our case a critical, and therefore particularly illustrative, case (Yin, 2013), for three reasons: First, the municipality has since 2015 sought to be on the forefront of innovation (Andersen, 2017). The implementation of multidose dispensers was part of a carefully crafted initiative for bottom-up innovation, where our case municipality worked in tandem with a neighboring municipality, sharing resources (Wittrock et al., 2020). Second, the municipality spans app. 9.000 souls, making it a mid-sized municipality in Norwegian terms (Brandtzæg et al., 2019). Third, the municipality face resource scarcity, and a demographic development which is forecasted to put healthcare services under further strain.

Our data is drawn from two science projects related to the case. In the one project, the focus was explicitly the use of multidose dispensers in our case municipality. The other project followed the innovation efforts of the two municipalities from spring 2017 to the fall of 2019 (Wittrock et al., 2020). The combined data comprise six focus groups with a total of 67 participants, lasting between one and two hours each, one interview with the project manager for the multidose implementation part of the overall project, participation in 12 meetings, and a final 4 hour workshop. In addition, we had access to the data archive from the main project, as well as documents used in connection with the multidose initiative. Focus group interviews cover around 80 pct. of all participants directly involved with the innovation project. Interviews cover the entire line and command hierarchy in the municipality, including political leaders from the advisory board of the innovation drive. In both science projects, interviews were audio recorded and verbatim transcribed. Statements made are traceable to the individual interviewee throughout the interviews. This enable us to discern affiliation with respect to municipality and project team in the broader innovation project.

Interviews were coded with respect to the phases in the implementation framework, and analyzed using a critical reflexive approach (Alvesson and Sköldbërg, 2000). As

accounts from interviewees do not map onto the framework in a strict sense, some segments were coded on more than one phase, and the meaning with respect to organizational practices related to the particular phase elicited in a subsequent comparison of all codes for each phase in the framework. Likewise, we pragmatically coded material onto the six phases (see below) as ‘project preparation,’ ‘research undertaken in the preparation phase,’ ‘development of organizational routines and test of chosen solution,’ ‘actual pilot implementation,’ ‘embedding in organizational routines,’ and finally ‘securing daily operations.’ For some phases (e.g. the preparatory work), we also rely on documents used by the municipality in the project, and an early project report (Andersen, 2017).

3 Findings

In this section, we contrast the guidance and six phases of the framework with actual organizational implementation practice. The phases are: 1) Project anchorage and buy-in, 2) Insight and knowledge, 3) Service development, 4) Pilot project and testing, 5) Transfer to daily operations and scale out, 6) New practice and realization of benefits (KS, 2018). The framework is available at a dedicated website.²⁾

Phase 1: Project anchorage and buy-in

The purpose of this phase is to define and to arrive at an overview of the challenges, the municipality is facing, as well as securing that the organization arrives at a shared understanding of both the problems and goals, the project should address. The website states: “Successful service innovation work is characterized by thorough preparatory work, good planning, and wide anchorage.” (KS, 2018). This phase of the framework has five steps with tools provided for their execution: a) Define problem and set goals, b) Explore gains, c) Build the right team, d) Map stakeholders and plan anchorage to gain support, and e) Map relevant projects to learn from.

Step one has a template power point with 18 slides for project presentation, including a SWOT analysis, a stakeholder analysis, and a specification of entanglements and dependencies on other projects at national, regional and local levels, as well as a specification of teams and their roles in the project and a project plan with milestones. It is rounded off with a list of decisions to be made and points to be clarified.

Step 2 has a further three sub-steps (1. mapping of envisioned gains with a breakdown of how to identify gains, comprising three generic types and eight sources in total; 2. Planning for gains; and 3. Follow-up on gains) and accompanying spreadsheets, where data needs to be collected and filled in. The sources of data would typically not be available at one access point in the organization but needs to be collected – or collection planned for – in various parts of the organization. The specification of gains is – appropriately – connected to concrete work processes in the organization, with a specification of planned changes and the preconditions for those changes. The website for this step in phase 1 in the framework has a separate ancillary website, helping the user to understand the role of figures and statistics. The ancillary website has a 24 slides presentation, including a specification of how indicators of outcomes should be ‘SMART’³⁾ The presentation explicitly introduces the necessity to establish new

indicators in the organization, related to individual projects and the establishment of follow-up procedures.

Step 3. in phase 1 has no further tools or further specifications of sub-steps, but step 4 has a tool aiding buy-in from stakeholders, in the form of a description of 11 suggested stakeholders and their potential role in the project. The last step in phase 1 has no further tools. There is, however, a further tool for 'project documentation' tied to phase 1 outside the steps in the phase.

Actual practices related to phase 1

Actual practices: In the studied project, problems have not been clearly defined, whereas goals have been described well. Possible gains have also been explored to some extent, through spreadsheet calculations of scenarios, and there has been a strong focus on creating the right interdisciplinary team of dedicated professionals with an interest in assisted living technologies. A professional project organization has been developed, complete with an advisory board of engaged local political leaders (Andersen, 2017). Hence, at a political level, stakeholders have been clearly involved. However, end-users, next of kin, and the managerial level have been involved only to a very limited extent in the early phase of the project (Wittrock et al., 2020). Other relevant projects have been explored to some extent, but to speak of an actual mapping in terms of both stakeholders and relevant projects would be an exaggeration.

Phase 2: Insight and knowledge

According to the framework, "Good services are created based on thorough insight into actual needs." Therefore, it is recommended to "conduct thorough work in order to unearth what the real needs are, and the reasons for organizational issues, before solutions are chosen." It is further stated that such work will reduce the danger of the development of solutions that are erroneous. This phase of the framework has a further five steps with tools provided for their execution. The steps are: a) Map the existing target service, b) Conduct interviews, c) Learn from others – study how other municipalities have solved similar issues, d) Study statistics and numbers, e) Explore technology, and f) Analyze and summarize.

To give an impression of the extensiveness of this phase, the accompanying presentation of the tool 'conduct interviews (step b)' is 39 slides long and covers many other sources of data collection than various forms of interview. The framework recommends at least six interviews with users and at least six interviews with employees, all of these at a length of between 30 and 60 minutes. The execution of step a) above entails following the services affected by the innovation from the end-user perspective throughout the organization to its 'final ends.' These will be found in e.g. the finance department and other administrative units in the organization, and ideally extended to any supplier outside the organization too.

For the rest of the phases discussed below (3-6), there are similar steps and tools in the framework, many of which span further decomposition into sub-steps and presentations with between 20 and 40 slides for various sub-steps, and various forms of data collection, including interviews.

Actual practices related to phase 2

In the surveyed project, no clear mapping of the existing service has been conducted, though at least one political leader took on the challenge of following services delivered in the home care units to their 'end points' in the organization. Interviews have been sparse and mostly informal. Some other projects have been studied, but we do not find traces that learning from such studies have been documented or formalized. In addition, statistics and numbers have been considered only to a limited extent. Various prospect suppliers of multidose dispensers were consulted, and one selected. It is unclear what the selection criterion were, but price point appears to have been given weight.

However, no encompassing review of needs was conducted, the municipal very early decided that they wanted to test multidose dispensers as they were aware of the possible advantages of these through information available to them through news sources. Multidose dispensers are fashionable, and were therefore selected for test in efforts to move forward, and gain experience, on various types of assisted living technologies.

Phase 3: Service development

According to the framework, the service development phase is where the insights gained in the preceding phase is transformed into ideas, which again are developed further into a service, ready for a pilot test. It is stated that "It is important to include users as well as employees in this step, in order to secure buy-in and develop solutions, which are relevant." This phase in the framework has an additional five steps and accompanying tools to it. These are: a) Brainstorming, b) Test suggested solutions, c) Define routines and responsibilities, d) Map gains, e) Develop points of contact, and f) Develop or choose technology.

Actual practices related to phase 3

What the municipal did is difficult to reconcile with the five steps in this phase of the recommended framework. Since no encompassing analysis of needs were conducted, efforts at this stage were directed at training selected staff in operating the multidose dispensers already chosen. The municipality relied on advice from the supplier of the multidose dispensers. When the supplier was later abandoned, the municipality largely changed its practice to follow the advice of the new supplier of a different model. Routines and responsibilities were not clearly defined from management but was worked out in a trial-and-error process with the project team and the frontline staff in the home care services as the main actors involved.

Phase 4: Pilot and testing

In this phase of the framework, the initiative or new service is tested on a smaller scale. The innovation is tested over time in a pilot to ensure that "everything works as it should." The purpose is "to identify errors and deficits, identify issues and not foreseen issues, and thereby reduce risk." This phase in the framework spans four steps and accompanying tools. The four steps in the framework are: a) Planning, b) Implementing, c) Evaluating, and d) Deciding.

Actual practices related to phase 4

It is a matter of interpretation, if a limited scale pilot was ever conducted in our surveyed project, or if it is rather the case that the project headed for full-scale implementation straight away. Early on, it was decided that the municipality would rent 10 multidose dispensers and distribute those to users, whom were deemed relevant. This was the number of dispensers the municipality obtained initial funding for and thought, they could utilize. The municipality still operates 10 dispensers, and a larger scale implementation would require reconsidering for which types of users, the dispensers are relevant.

The planning and implementation at this stage was largely left to the project team and the frontline personnel. An evaluation was carried out, comprising an informal focus group with the personnel present at the lunchbreak on a particular day. Based on the information obtained, it was decided to switch to another supplier (see phase 3 above), which is to the satisfaction of the employees. A particular difficulty in terms of follow-up evaluations was that a large part of the management team changed during the project. For instance, the current project manager assumed work well into the project period. Changing management throughout the lifetime of the project has caused significant issues to its progress and for the accumulation of knowledge regarding service innovation implementation, because very little has been documented. Therefore, the project team and the frontline personnel has been instrumental in overcoming disjoints and moving the project forward.

Deciding to keep the dispensers was based on a general feeling of having saved time, the original promising calculations, and the argument that suddenly taking dispensers away from users would be a significant change in their experienced service, which was deemed undesirable. Another important driver in the decision was a fear that rejection of the innovation could lead to further cuts in the budget of the home care services in the future.

Phase 5: Transfer to daily operations and scale out

According to the framework, “in this phase, it is important to secure the integration of the new service into the daily operations of the organization in a good manner.” This is premised upon planning and carrying through the implementation, as well as securing any acquisitions. The phase comprises an additional five steps with accompanying tools and recommendations. The five steps of the framework are: a) Accomplish any acquisitions, b) Plan gains, c) Embed the service or innovation in daily operations and secure buy-in, d) Implement the new solution, e) Hand over to daily operations.

Actual practices related to phase 5

Rather than accomplishing any additional acquisitions, ‘transfer’ to daily operations entailed securing funding for continuous use of already rented dispensers. No particular gains were planned for and the question of embedding left largely unaddressed. The reason for the former is that the municipality lacked concise data for such planning, the reason for the latter is that the frontline personnel already had a modus operandi for the use of the multidose dispensers. The use does not (yet?) include many of the extra

technological features – in principle – enabled through the technology of the dispensers. In addition, a final report has been produced.

In discussions on how to best secure scale out and a fuller implementation of opportunities offered by the technology, the interdisciplinary project team lament that their engagement with the project comes in addition to their normal job and workload. Therefore, their focus fluctuates between the project and their own field of responsibility tied to daily operations.

Phase 6: New practice and realization of benefits

According to the framework, in this phase, it is important to secure gains for the users, their relatives, and the municipality. However, securing gains is often a protracted process, and is premised on consistent efforts and follow-up. It is stated “that salient progress drives motivation.” This phase contains three steps in the framework. The three steps in the framework are: a) Day-to-day operation of the service, b) Measuring and following up on gains, and c) Improve and innovate.

Actual practices related to phase 6

In our studied case, the day-to-day operation of the multidose dispensers are largely governed by the frontline personnel. There are several issues with planning and time use of dedicated super users, other employees feeling insecure in their use of the dispensers, as well as various technical problems. However, the frontline personnel are largely capable of solving those issues among them and negotiate acceptable solutions. Furthermore, they are continuously debating between them, which new users may benefit from the dispensers. In this work, the algorithms provided by the second supplier has given some new and helpful ideas in selection processes, though it is no longer in use for selection. No measuring and follow-up on gains have been planned for, and frontline staff lament lack of follow-up training on the use of the dispensers.

4 Discussion

Considering step 1 and 2 in the implementation model, the decision to adopt multidose dispensers in the municipality was not driven by a meticulous internal analysis, suggesting that such dispensers would be the best solution to carefully mapped problems, as envisioned in the framework. Rather, the decision was driven by a combination of several factors. One was to further innovation in the municipality in response to political pressures at national level, another was concerns for the pressure future demographics would place on the municipality (Hagen et al., 2011). Last, but not least, the municipality was aware that other municipalities were experimenting with multidose dispensers, as a response to such pressures. These are processes poorly captured by the careful analysis suggested by the framework, but well described by neo-institutional theory, showing that legitimacy concerns and emulation drives adoption decisions (Tolbert and Zucker, 1983, Strang and Macy, 2001). Likewise, the decision-making process is characterized by complex streams of information, deliberations among organizational members, using their expertise, and cognitive ‘work,’ through which problems finds available solutions (Cohen et al., 1972).

Concerning the following stages in the implementation model, we suggest that ‘muddling through’ or ‘incrementalism’ captures organizational practices much better than the formalized implementation model. In his seminal works developing the ‘science of muddling through’ or ‘incrementalism’ Charles E. Lindblom suggests a corrective to the (still) dominant synoptic rational model of decision-making and policy implementation process (Lindblom, 1959, Lindblom, 1958, Dahl and Lindblom, 1953). Lindblom’s corrective is both descriptive of actual administrative behavior and normative; the rational-comprehensive model of reasoning is not efficient or practical, rather it is an ideal model far removed from the realities of organizations. Central to Lindblom’s arguments is that:

“intellectual and informational capacities, as well as time and resources, simply do not permit this style of reasoning most of the time, [...] “administrators [...] simply compare a limited number of alternative policies, [...] alternatives typically differ only marginally or incrementally.”
(Pal, 2011 ,p. 30).

Lindblom sees these properties of actual decision-making and policy-implementation as an advantage, rather than as an issue to be solved (Hirschman and Lindblom, 1962). The decision-making and policy implementation model is geared towards obtaining simplicity which is applied in a steady and stepwise development of policy on an trial-and-error basis. The “decision making is, and ought to take place through, a process of successive limited comparison” (Rothmayr Allison and Saint-Martin, 2011, p. 1).

The implementation framework surveyed above is a rational-comprehensive model, demanding comparison of a clearly defined project start with clear measures of organizational outcomes, relevant to the innovation in question, the building of cumulative data on progress throughout a pilot testing period, and evaluations based on these collected data at various decision points. As our comparison of the stages in the recommended framework and the practices of the progressive municipality evolves, the gap appears to widen.

We suggest there are three main reasons for this: First, the municipality relies on organizational members’ expertise with respect to issues in the organization, rather than conducting a meticulous mapping and crunch the numbers needed for such an exercise. Second, they go for a head start to try out something (here 10 multidose dispensers), rather than doing a carefully orchestrated minor pilot from which data can be collected and learning extracted. To them, the testing of the 10 dispensers, which later becomes the standard stock, *is* the pilot, though one already intertwined with daily operations. Third, they rely on the capabilities and knowledge of the interdisciplinary project team and among frontline staff to develop solutions to problems on the go. Therefore, there is no formal ‘service development’ (phase 3 in the framework), where insights are transformed into ideas and then developed into a re-designed service. The actions of the municipality are directed towards the everyday practice of services delivered in a much clearer fashion, than in the implementation framework. In targeting the daily operations rather directly, the envisioned formal testing (phase 4) and transfer to daily operations (phase 5) in the framework becomes largely redundant. Before the implementation framework gets into gear and start moving, the municipality is already ready for the next round of trial-and-error experiment.

Another important aspect of Lindblom's theory of muddling through is his contrasting of the practical reason, used by practitioners in a field and abstract reasoning, used by researchers or social scientists (Pal, 2011). The implementation framework has been developed by scientists, and it draws clearly on a science of implementation research, in which optimal implementation is sought through the application of formalized models, prescribing certain steps leading to an accumulated fond of documented project knowledge. This type of project knowledge stems not from professional judgement by practitioners, but from, and clearly related to, the execution of each step in the framework. Upon this knowledge further development of the implementation can be fashioned. In contrast, (Lindblom, 1959 , p. 87) positioned his incremental method as founded in practical knowledge:

“Theorists often ask administrators to go the long way round to the solution of his problems, in effect ask him to follow the best cannons of scientific method, when the administrator knows that the best available theory will work less well than more modest incremental comparisons.”

In short, Lindblom places emphasis on practicality, intuition, professional judgement, experience in the field, and incremental development, rather than on rational-comprehensive models of formalized knowledge. In the surveyed project, implementation is borne by the expertise of practitioners in the frontline, and in the project team, rather than by a formalized framework for implementation or service innovation.

As a research field, scientific studies of the implementation of assisted living technologies appears replete with cautions on how insufficient implementation efforts have led to lesser outcomes in adopting organizations than those predicted from the ‘perfect’ implementation through established frameworks (e.g. Dugstad et al., 2015, Lassen, 2017, Nilsen et al., 2016). While these cautions provide important ideas for corrections with respect to efficient implementations, we suggest taking a different route; namely to critically assess if the frameworks provided for implementation efforts match the realities of contemporary public organizations. Put differently, given what we know about organizational practices with respect to adoption of innovations and change processes, is it reasonable to expect a highly complex and encompassing framework to be helpful for the average municipality seeking to innovate in order to mitigate financial strain, possibly through multiple parallel projects?

The problems we find with respect to implementation are echoed in several other studies of the use of multidose dispensers and range across studies of several types of public service innovation projects (e.g. Nilsen et al., 2016, Dugstad et al., 2015, Sæterstrand et al., 2015). As discussed above, insights from extant organizational scholarship accounts well for the practices observed. On this basis, we suggest that current frameworks designed to aid the implementation of innovative new solutions may be out of touch with the realities of many public service organizations, suffering from chronic scarcity of resources in the face of demands placed on them, ironically being a main driver for innovation efforts in the first place. These municipalities are characterized by ad hoc organization with respect to innovation and ‘on the go’ solutions, rather than the investment in thorough planning with respect to innovation. Their focus is the daily operations, which already stretch resources considerably.

5 Conclusion and implications

Based on our findings and the support these find in extant organizational science, we suggest that a helpful framework should fit the trial-and-error character of current municipality organization. Furthermore, it should have a 'grab and go' form, where beginning from the (theorized) middle of a project is equally possible as starting from the beginning. The framework needs to depend as little as possible on previously executed work. Likewise, since employees in smaller municipalities have multiple other tasks and often contribute to projects 'on top of' their daily work, frameworks need to allow for time and effort delivered to the project as both focused and scattered. Innovations are theorized to help curb financial scarcity. It is therefore illusive to provide a framework demanding considerable resources for its execution, which can only be taken from the budget of the daily operations in the case of public sector organizations.

Given the iterative trial-and-error processes which drives our case project forward, the coming and going of personnel in the project, and the inability to dedicate personnel and resources to the project on a permanent basis, we suggest that frameworks aiding implementation efforts likely better be based on agile methods and what has become known as scrum methods (e.g. Schwaber, 2004), rather than on mainstream classic project management. Scrum methods are based on short cycles of clearly discernable project activities with an ongoing deliberation with relevant stakeholders, and small project teams, which are often cross-functional (Cervone, 2011). In addition, it typically relies on project teams which are largely self-organizing, and a keen attention to the needs of the end-users, potentially matching efforts of collaborative innovation and bottom-up approaches well (Hartley et al., 2013).

Acknowledgements

The first author wishes to thank Reidun Norvoll, Pål Klethagen and Selma Therese Lyng for discussions that helped shape the paper. All opinions expressed are those of the authors. An earlier version of the paper was presented at the Public Service Innovation Conference (PUBSIC), Stavanger Norway, February 2020. We thank the session participants for helpful comments, improving the manuscript. Finally, we thank the many people in the project surveyed, who generously gave us their time and attention.

References and Notes

- 1) All translations of the Norwegian language framework and citations conducted by the authors.
- 2) <https://www.ks.no/fagomrader/innovasjon/innovasjonsledelse/veikart-for-tjenesteinnovasjon/>
- 3) Specific, Measurable, Accepted (broadly), Realizable (or realistic), and Timebound.

ALVESSON, M. & SKÖLDBERG, K. 2000. *Reflexive methodology : new vistas for qualitative research*, London, UK, SAGE.

ANDERSEN, T. 2017. *Innovativ tålmodighet. ØF-notat*. Lillehammer, NO: Østlandsforskning.

- BERTRAM, R. M., BLASE, K. A. & FIXSEN, D. L. 2015. Improving programs and outcomes: Implementation frameworks and organization change. *Research on Social Work Practice*, 25, 477-487.
- BOYSEN, E. S. & STØLE, N. 2016. Erfaringer og funn fra pilotering av velferdsteknologi i Stavanger kommune.
- BRANDTZÆG, B. A., LUNDER, T. E., AASTVEDT, A., THORSTENSEN, A., GROVEN, S. & MØLLER, E. 2019. Utredning om små kommuner [Report on small municipalities]. *Telemarksforskning Rapporten*. BØ, Norway: Telemarkforskning.
- CERVONE, H. F. 2011. Understanding agile project management methods using Scrum. *OCLC Systems & Services: International digital library perspectives*, 27, 18-22.
- COHEN, M. D., MARCH, J. G. & OLSEN, J. P. 1972. A Garbage Can Model of Organizational Choice. *Administrative Science Quarterly*, 17, 1-25.
- DAHL, R. A. & LINDBLOM, C. E. 1953. *Politics, economics and welfare: planning and politico-economic systems, resolved into basic processes*, Harper & Brothers New York.
- DUGSTAD, J. H., NILSEN, E., GULLSLETT, M. K., EIDE, T. & EIDE, H. 2015. Implementering av velferdsteknologi i helse- og omsorgstjenester : opplæringsbehov og utforming av nye tjenester – en sluttrapport. *Skriftserien fra Høgskolen i Buskerud og Vestfold*. Drammen, NO: Høgskolen i Buskerud og Vestfold.
- FIXSEN, D. L., NAOOM, S. F., BLASE, K. A., FRIEDMAN, R. M. & WALLACE, F. 2005. *Implementation research: a synthesis of the literature*, Tampa, FL, University of South Florida.
- HAGEN, K., ANDERSSON, S. I. S., FAGERTUN, T. J., HØYLAND, K., SKANSGÅRD, B., BRUUN, G. K., GAMMELSÆTHER, P., LEVERAAS, I., BJØRVIG, S., HAUAN, A., RANA, S. & BARSTAD, S. 2011. Innovasjon i omsorg. In: SERVICESENTER, D. & INFORMASJONSFORVALTNING (eds.) *NOU - Norges offentlige utredninger*. Oslo, NO: Departementets servicesenter.
- HARTLEY, J., SØRENSEN, E. & TORFING, J. 2013. Collaborative Innovation: A Viable Alternative to Market Competition and Organizational Entrepreneurship. *Public Administration Review*, 73, 821-830.
- HIRSCHMAN, A. O. & LINDBLOM, C. E. 1962. Economic development, research and development, policy making: some converging views. *Behavioral science*, 7, 211-222.
- HOFFMANN, C., SCHWEIGHARDT, A., CONN, K. M., NELSON, D., BARBANO, R., MARSHALL, F. & BROWN, J. 2018. Enhanced adherence in patients using an automated home medication dispenser. *The Journal for Healthcare Quality (JHQ)*, 40, 194-200.
- KS. 2018. *Veikart for tjenesteinnovasjon* [Online]. Oslo, NO: KS. Available: <https://www.ks.no/fagomrader/innovasjon/innovasjonsledelse/veikart-for-tjenesteinnovasjon/> [Accessed 14th January 2020].
- LASSEN, A. M. 2017. Velferdsteknologi i et medarbejderperspektiv - Et kvalitativt studie af kommunale medarbejders erfaringer med velfærdsteknologi. *Tidsskrift for omsorgsforskning*, 3, 106-117.
- LINDBLOM, C. E. 1958. Policy Analysis. *The American Economic Review*, 48, 298-312.
- LINDBLOM, C. E. 1959. The Science of "Muddling Through". *Public Administration Review*, 19, 79-88.
- MARCH, J. G. 1991. Exploration and Exploitation in Organizational Learning. *Organization Science*, 2, 71-87.

- MELTING, J. B. 2017. Andre gevinstrealiseringsrapport med anbefalinger. Nasjonalt velferdsteknologiprogram. *In: HELSEDIREKTORATET* (ed.). Oslo, NO: Helsedirektoratet.
- MELTING, J. B. & FRANTZEN, L. 2015. Gevinstrealiseringsrapport nr. 1. *In: HELSEDIREKTORATET* (ed.). Oslo, NO: Helsedirektoratet.
- MINTZBERG, H. 1989. *Mintzberg on management : inside our strange world of organizations*, New York, Free Press.
- NILSEN, E. R., DUGSTAD, J., EIDE, H., GULLSLETT, M. K. & EIDE, T. 2016. Exploring resistance to implementation of welfare technology in municipal healthcare services – a longitudinal case study. *BMC Health Serv Res*, 16, 657-657.
- PAL, L. A. 2011. Assessing incrementalism: Formative assumptions, contemporary realities. *Policy and Society*, 30, 29-39.
- ROGERS, E. M. 2003. *Diffusion of Innovations*, New York, NY, Free Press.
- ROTHMAYR ALLISON, C. & SAINT-MARTIN, D. 2011. Half a century of “muddling”: Are we there yet? *Policy and Society*, 30, 1-8.
- SÆTERSTRAND, T. M., HOLM, S. G. & BRINCHMANN, B. S. 2015. Hjemmesykepleiepraksis. *Klinisk Sygepleje*, 29, 4-16.
- SCHWABER, K. 2004. *Agile project management with Scrum*, Redmond, WA, Microsoft Press.
- SCOTT, W. R. & DAVIS, G. F. 2007. *Organizations and organizing : rational, natural, and open systems perspectives*, Upper Saddle River, N.J, Pearson Education.
- SHENHAV, Y. 1995. From Chaos to Systems: The Engineering Foundations of Organization Theory, 1879-1932. *Administrative Science Quarterly*, 40, 557-85.
- SIMON, H. A. 1997. *Administrative behavior : a study of decision-making processes in administrative organization*, New York, Simon & Schuster Free Press.
- STOKKE, R., PAULSEN, K. B., ISAKSEN, J., SKARLI, J. & MELBY, L. 2017. Hvilken nytte har hjemmeboende med hjelpebehov av velferdsteknologi? *Tidsskrift for omsorgsforskning*, 3, 117-127.
- STRANG, D. & MACY, M. W. 2001. In Search of Excellence: Fads, Success Stories, and Adaptive Emulation. *American Journal of Sociology*, 107, 147-182.
- TOLBERT, P. S. & ZUCKER, L. G. 1983. Institutional Sources of Change in the Formal Structure of Organizations: The Diffusion of Civil Service Reform, 1880-1935. *Administrative Science Quarterly*, 28, 22-39.
- WITROCK, C., INGELSRUD, M. & NORVOLL, R. 2020. Ledelse og organisering av innovasjonsprosesser i Gran og Lunner kommuner: Implementering av hverdagsmestring i helse og omsorg. En casestudie av et top-down, bottom-up organisatorisk innovasjonsarbeid. *AFI Rapportserie*. Oslo, NO: Arbeidsforskningsinstituttet ved OsloMet.
- YIN, R. K. 2013. *Case Study Research: Design and Methods*, Thousand Oaks, CA, Sage publications.