

An impact-oriented maturity model for IT-based case management



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ABSTRACT

Case management comprises various complex activities. Consequently, case managers have to balance very diverging requirements and needs, while at the same time facing increasingly complex decisions. *Case management software systems* (CMS) provide capabilities such as information assessment and handling, decision and collaboration management as well as flexible process guidance to support case managers. When introducing a CMS into an organization, a maturity model of IT-based case management helps in mastering different levels of technology adoption by exploiting technological benefits and carefully addressing associated risks. In this paper, we propose the C3M maturity model for IT-based case management that links maturity levels with sets of capabilities that are typical for case management in social work, health care, and the handling of complex claims in insurance. The model focuses on the impact of technology and is linked to a map of benefits and risks across five impact areas. Each impact area is characterized by six impact factors that we consider as especially important when managing IT technology adoption within case management.

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1. Introduction

Recently, case management practices have been very influential in discussions about the next evolution of business process management and knowledge-intensive work in general [1,2]. Historically, case management has emerged as a management discipline within social work to ensure the continuity of care in the United States in the 1970/1980 years where social work and health care were extended into a coordinated end-to-end process involving different institutions and professions. Elements of case management can be found much earlier in social work, but the management discipline was coined in this decade. For comprehensive introductions into the field see for example [3–5].

*Case management is a specific approach for the coordinated handling of complex situations in social work, health care and insurance. A bundle of services is provided to a client based on her/his individual needs in a systematic and cooperative process in order to effectively achieve jointly defined objectives in high quality. Case management coordinates inter-professional and inter-institutional services and respects the autonomy of the clients while preserving resources in the client's and the supporting systems.*¹

Case management defines how a complex situation is handled and how the services, which respond to the needs of the client, are determined and implemented. It is considered as a coordinated response to a differentiated landscape of offerings that can constitute a solution to a client's complex problem. It has the goal of empowering

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¹ Definition of case management by the case management network of Switzerland <http://www.netzwerk-cm.ch>.

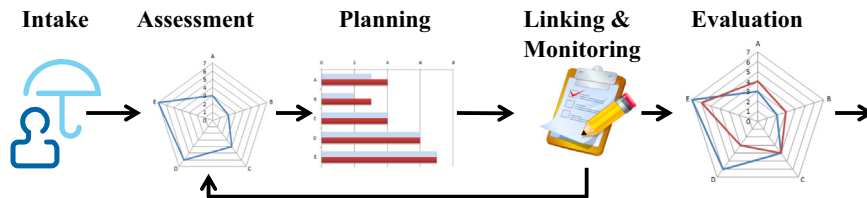


Fig. 1. The 5 phases of the case-management process.

clients and also often initiates a change in the resource system when necessary. As is observed in [2], “...the knowledge worker in charge of a particular case actively decides on how the goal of that case is reached, and the role of a case handling system is assisting rather than guiding her in doing so.” Five phases are commonly distinguished in the client-facing processes of case management, see also Fig. 1:

1. *Intake*: Is a client in a situation in which case management can and should be applied?
2. *Assessment*: What detailed situation is the client facing? How is the case structured? What services could be of help, reaching which possible objectives?
3. *Planning*: What objectives can be jointly agreed with the client? Which services are possible and can be bundled to achieve the objectives?
4. *Linking and monitoring*: How are the services put in place and how is the partner network established? How effective are the services?
5. *Evaluation*: Which results and change are achieved in the client’s situation before she/he exits the case-management process? Are the objectives met?

Phase 1 covers the entering of a client into the case-management process. Phases 2–4 are highly iterative. The assessment often happens in a continuous way leading to changes in the planning and linking of services when necessary. Phase 5 concludes the case management process with a final evaluation.

In previous work [6], we investigated the capabilities of case management software systems (CMS) and the requirements of case managers. We compiled a set of key capabilities that we related to five different levels of maturity in our C3M maturity model for IT-based case management.²

In this paper, we extend the C3M maturity model with a detailed benefits and risks analysis that helps understanding and mastering the impact of IT-related decisions within case management. Our benefits and risks analysis is based on a thorough investigation of impact analyses proposed by various fields. We compile a benefits and risks map, which recombines and extends existing models from the literature to obtain a more holistic view on the manifold aspects of technology-related benefits and risks. At the core of the map are *five impact areas* that are not specific to case

management software, but that are widely recognized as relevant when assessing the impact of IT systems. Each impact area is refined with *six impact factors* that allow us to obtain a focused, yet comprehensive view on the potential risks and benefits of a CMS. The impact factors are clearly tailored towards the characteristics of CMS based on the capabilities that we identified in [6] and are thus clearly influenced by the nature of case management work.

We propose our maturity model and benefits and risks map as a methodological guideline for the following types of empirical work:

- The identified capabilities help organizations in determining their requirements when making purchasing decisions for case management software.
- The maturity levels support organizations to clearly identify the stages in which they want to advance their IT technology and help to determine which level of maturity in using IT is appropriate for which organizational processes.
- Software vendors can position their CMS products with respect to capabilities and maturity levels.
- The benefits and risks map allows to steer technology planning and implementation processes towards achieving improved IT value.

Our focus is clearly on case management and case management software systems in the fields of social work, health care, and insurance. However, case management has become a metaphor to characterize knowledge-intensive work. As a metaphor it combines collaborative and complex decision making with high needs in assessing and handling different sources of information. In this sense, our maturity model and benefits and risks map can also be applied to evaluate and manage the introduction of other types of software systems for knowledge-intensive work such as for example software in the fields of business analytics and intelligence.

The paper is organized as follows: [Section 2](#) discusses key capabilities of case management and summarizes the C3M maturity model as presented in [6]. [Section 3](#) extends our model with a refined map of CMS-related benefits and risks based on five key impact areas and a collection of six impact factors for each area. [Section 4](#) reviews related work, whereas [Section 5](#) concludes with a brief summary and discussion.

2. The C3M maturity model

Case management is widely recognized as a successful practice for effective service delivery. Three characteristics

² The acronym C3M combines CM, which stands for case management, and 3, which stands for the three aspects that our model brings together: maturity level characterizations, benefits, and risks.

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