

# Planning and Control and the Use of Information Technology in Mental Healthcare Organizations

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## INTRODUCTION

Demand for mental healthcare increases. Simultaneously, the need for more patient oriented processes increases and the market develops towards more competition among providers and organizations. As a result of these developments, mental healthcare organizations are becoming more aware of efficiency and effectiveness. Often, they choose to transform to more process oriented organizations, which require changes in planning and control systems and information technology (IT). However, little is known about the required planning and control systems and IT for mental healthcare.

We argue that IT for planning and control of mental healthcare organization needs to be adaptive and support short term planning. IT has to be adaptive to be able to support first and second order control which is needed for planning and control of mental healthcare processes. Short term planning or reactivity is needed to deal with stochasticity and variability as present in mental healthcare. These subjects are further described in the background.

This article reports the results of two studies on the use of standard care processes and IT for planning and control of mental healthcare processes. The results give insight in the needed functionalities of IT and planning and control of mental healthcare processes. The first study is a case study in a center for multidisciplinary (mental) youth care. This center implemented care programs and an automated planning tool. We studied the success of this implementation and particularly the fit between the care programs and the planning tool. In the second study we studied the characteristics of ambulant mental healthcare processes and the actual and preferable use of planning and control models and IT.

## BACKGROUND

Mental healthcare is often multidisciplinary and includes several professionals, disciplines, and departments within one or more organizations which all need to be planned and controlled. Consequently, the object of control is mainly professionals and patients, but also resources like rooms. We define planning as the determination of what should be done and control as the process that assures that the planned results are obtained (Van Merode, Groothuis, & Hasman, 2004).

According to Hofstede (1981), the way nonprofit organizations, such as mental healthcare organizations, can be planned and controlled depends on the type of processes. The type of process can be determined by answering the following questions: is the output measurable? Are the objectives unambiguous? Are the effects of management interventions known? And, can the activities be repeated? The type of processes determines the control model and instruments (e.g., protocols, case management and budgeting) that can be applied.

Hofstede (1981) defines six different control models, as shown in Table 1. The more standardized, well-defined, and structured the processes are, the more routine control can be used.

A mental healthcare organization consists of various processes. These processes are possibly different and thus need different control models. To select a control model that best suits a situation, processes have to be analyzed. Especially the distinction between routine and less routine processes is important here.

Routine processes can use standards and can be controlled by routine control or, when the activities cannot be repeated, by expert control. For routine control, and marginally for expert control and trial-and-error control, models that compare automatically what

Table 1. Control models

Control model condition	Unambiguous objectives	Measurable output	Known effects	Repetitive activities
Routine control	+	+	+	+
Expert control	+	+	+	-
Trial and error control	+	+	-	+
Intuitive control	+	+	-	-
Judgmental control	+	-	+/-	+/-
Political control	-	+/-	+/-	+/-

+ = condition is present

- = condition is not present

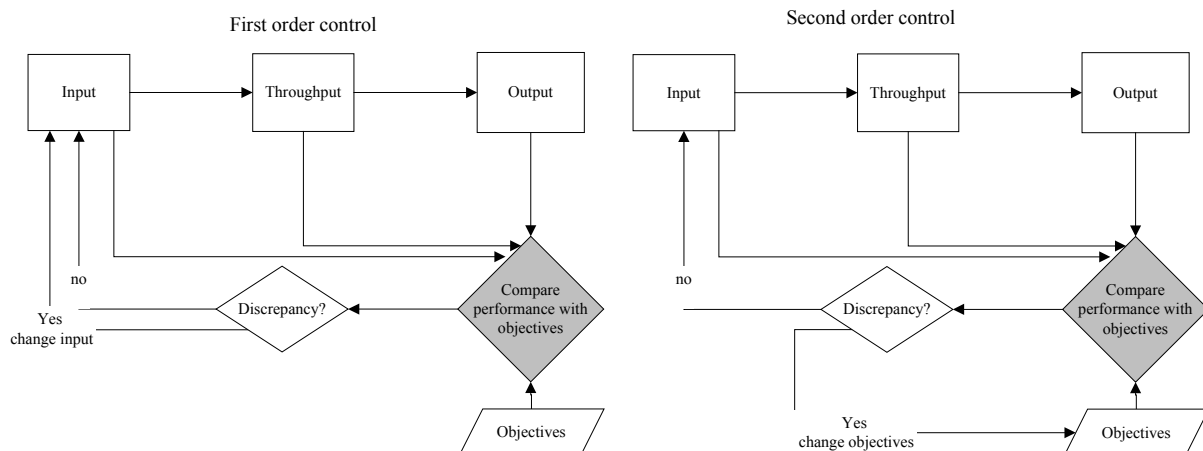
actually happens with the standards about what should happen apply. These models use feedback for control. The feedback from relevant indicators provides information that can be compared with targets. A number of care processes can be coordinated to a large extent by planning and control integrated in one system and by providing feedback from control to planning (Hofstede, 1981; Van Merode, Groothuis et al., 2004; Van Roth & Van Dierdonck, 1995). Moreover, for intuitive and judgmental and political control only vague models exist (Hofstede, 1981).

An example of control by feedback in mental healthcare is a protocol for the process of the treatment of depression. This protocol describes that the target of the indicator “number of sessions” is 15. If a patient receives 17 instead of the targeted 15 sessions, this is evaluated. Several actions can be undertaken to meet the target of 15. One such an action is adapting the input

of the process so that the 15 sessions are not exceeded. This is first order control (Figure 1).

A problem with first order control can be that the aim becomes to keep the activity on target at any cost. To overcome this problem, a second order feedback loop that can periodically adjust the targets of the first order feedback loop is necessary (Figure 1). A second order feedback loop provides information (e.g., by new insights or outcome of evaluations) that enables decisions on the appropriateness of the target. By means of a second order feedback loop, the interventions of the first order loop can be overruled. With that, the targets of the process can be adapted so that the outcome better fits the targets. In our example of 15 sessions where the output did not meet the target of 15 sessions, the target of the standard can be changed to, for example, 17 sessions. An advantage of second order feedback is that it can cover more complex organizational control

Figure 1. First and second order control



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