An Agenda for Service Case Management

Abstract

Many service industries employ a case management approach, in which one manager works several customer cases, each of which involves several tasks. Case management involves a variety of operational problems, such as determining what tasks (and durations) are required, coordinating tasks which need to be accomplished by someone else, dynamically prioritizing cases and tasks, incurring setups for switching between cases/tasks, deciding when to preempt tasks, deciding whether to batch tasks, tracking and reporting case status, and estimating case completion times. This paper provides an overview of these operational problems, reviews relevant literature, and suggests a long-term research agenda.

Track: Service Operations Management

Key Words: service operations management, case management

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Introduction

Case management has been defined as "a function designed to arrange for, and to sequence, needed services of different sorts by various providers on behalf of a client or client family." (Dinerman, 1992) Case management methods have been widely used in industries such as medicine, social work, credit management, telephone service, tax collection, manufacturing, insurance, banking, and transportation. (Netting, 1992; Austin, 1993; Davenport and Nohria, 1994) Although there are a variety of case management models, case managers are typically expected to accomplish some combination of the following roles: problem solver, advocate, broker, planner, community organizer, boundary spanner, service monitor, record keeper, evaluator, consultant, collaborator, coordinator, counselor, and expediter. (Netting, 1992)

Although the types of service provided may be standard, the differing needs and circumstances of individual clients may cause the required actions to vary across clients. Consequently, case management generally has low standardization and high customization. Also, since some of the service tasks may be done in parallel, case management bears more similarity to a project type of operation than a job shop. A case manager may be even less specialized than other project organizations, accomplishing a wide variety of tasks. However, unlike a manufacturing project organization, a case manager may not actually accomplish the required tasks. Instead, many of the tasks required to serve a client may need to be accomplished by external agencies which must be coordinated by the case manager. Finally, cases may last for extended periods of time and case managers will typically have numerous active cases in progress at one time.

Note that case management is not a type of service *per se*. Instead, it is an operational process used in many service industries. Therefore, case management is not a new cell in a typology, such as the service process matrix. (Schmenner, 1986). Instead, it may be used across typologies, although we might expect its use to more prevalent in certain industries, such as professional services.

Overall, the case management scenario may be described as a case manager interacting with several clients and external agencies, within some industry or company environment. Since case management is both widely used and also often works differently from other forms of operational management, its unique problems merit focused research. The objective of the present paper is to specify some of those problems and offer useful starting points or perspectives for addressing them. In the remainder of the paper, client-related issues are discussed first, followed by case manager issues, external agency issues, and finally, environmental issues. In each category, specific problems, relevant literature, and potential theoretical or applied research topics are identified.

Client Issues

Proximity and contact: Customer contact has long been considered a key determinant of the nature of a service operation. (Chase, 1978) On one hand, frequent, close contact enables service customization. On the other hand, high contact increases variability. Since case managers are often serving as intermediaries among various individuals and organizations, the question of the best frequency, nature, and extent of contact with clients, collectively referred to

as proximity, can be problematic. (Davenport and Nohria, 1994) Several theoretical typologies have been suggested which address this characteristic. (Cook *et al.*, 1999) However, further work is needed to extend this research to the field of case management, and/or to suggest what level of proximity is most appropriate for case managers. Field studies are also needed to learn what forms of client-server contact tend to be used by the most/least successful case management organizations.

Definition of process requirements: One of the key ingredients for successful case management is "an accurate assessment … of what is needed." (Dinerman, 1992) In other words, one of the first tasks of a case manager is to determine the process requirements for a given client, i.e. to design the process. While some degree of flexibility is always required in services which allow customization (Maister and Lovelock, 1982; Schmenner, 1986), that flexibility is normally limited to how or whether a specific step is accomplished. By contrast, the broader scope of case management may call for new process steps to be devised in order to meet a client's needs. From a theoretical perspective, we need tools which will assist case managers in determining and modeling process requirements. From an applied research perspective, customer surveys may be a useful means of determining the extent to which satisfactory service depends on the ability of the case manager to identify what needs to be done and/or how to do it.

Determination of task durations: Once a customer's needs have been determined and process steps designed to meet those needs, the service provider must then deliver the required service. However, while tangible production may be viewed as either complete or incomplete, service providers have more leeway in deciding how much time to spend providing the service. For example, a service provider can do a more cursory, but perhaps adequate, job by taking less time (and in so doing, serve more clients) or they can do a more thorough, perhaps higher quality job. It's also possible to spend more time on a task than a client wants. Prior research has shown that customer satisfaction may depend on how much time is spent providing the service. (Soteriou and Chase, 1998) Surveys of case managers would be helpful in determining the extent to which case managers can determine task durations (both when accomplishing tasks themselves and when specifying the service to be provided by external agencies) and the perceived impact of their choices. This information might then be helpful in constructing or extending models such as those suggested by Soteriou and Chase (1998).

Client follow-up: An often-overlooked aspect of services in general is the need for follow-up with clients. Many organizations that use a case management approach, especially health care industries, are probably more aware of this as being a part of the process which must be planned. Follow-up is needed to determine whether the service provided had the desired effect, as well as to retain/encourage future business. Industry experts say that it costs perhaps five times more to attract a new customer than to retain a current one. (Hart *et al.*, 1990) Applied research is needed to determine how often follow-up with clients is done and how beneficial it's perceived to be. Theoretical research is needed to model the cost tradeoffs involved and to determine the ideal timing of follow-up contacts.

Case Manager Issues

Commonality of process steps: In seeking to describe the practice of case management Steinberg and Carter (1983) identified eleven steps, White (1986) reduced this number to six, and Callahan (1989) suggested that there is no single best way to perform case management. Apparently, there is disagreement about how much process commonality exists across case management scenarios. If certain steps *are* common, it would be helpful not only for training case managers, but also for researching common challenges. Further empirical work is needed to search for common steps. Theoretical research is needed both to prescribe necessary steps, perhaps by synthesizing practices across industries, and to optimize common steps.

Required expertise: A case manager is essentially a project manager. Case managers accomplish some tasks themselves, but are also expected to be intermediaries between a client and other (professional) service providers. To what extent must case managers be content or functional experts in the services being provided versus administrative experts in tracking and initiating tasks and communication among the affected parties? Are the best case managers those who progress through lower-level functional jobs in the service industry or those who are educated primarily in managing cases, perhaps even in different industries? Theoretical research may exist in the human resources domain that could be applied to the case manager. In addition, survey or field research could at least address what skills or backgrounds are typically used in industry.

Capacity and workloading: Many service businesses which use the case management approach have a sufficient number of cases to need several case managers. The number of cases assigned to a single manager affects the cost, quality, and timeliness of the operation. What's the best way to make this decision? Apte *et al*. (1998) used queuing theory to determine that for a relatively large number of service steps and moderate to high utilization, the case manager approach is more efficient than a specialized labor approach. However, given the earlier discussion concerning the case manager's ability to influence task durations and the potential relationship between duration and service quality, it is also necessary to determine how much of a workload should be placed on a case manager. Optimization techniques may be helpful in this regard and may also reveal the sensitivity of such decisions.

Decision rights (empowerment): This relates to, but is not the same as the question of customization. This issue deals with the extent to which the case manager is empowered to define or redefine their own process. Davenport and Nohria (1994) advocate "As much [empowerment] as possible without causing problems elsewhere." However, as was the case with the overall question of client customization, greater autonomy leads to greater variability. Research should seek to quantify the tradeoff between greater responsiveness and consistency of output. A corollary issue is the determination of what actions are required when a need exceeds the authority of the case manager.

Prioritizing tasks: Since the case manager's capacity is limited and multiple clients must be served, a prioritization decision is required. In addition, as the case manager operates over time, new cases or tasks will become feasible while other cases or tasks are still in progress. Does the arrival of a feasible task related to a higher priority client constitute a sufficient basis for

preemption? If not, at what point should a switch be made? In general, which tasks should a case manager deal with first? We have previously identified this issue as the service case scheduling problem (Simons, 1998) and have begun to explore potentially helpful decision rules (Simons *et al.,* 2000).

Setup reduction: There are presumably setups associated with switching between task types, client cases, or both. These setups represent a cost in and of themselves, as well as complicating the switching issue described in the previous paragraph. Despite the potential impact, little research has been done on service setups. (Simons, 1999) What are the nature/extent of these setups and how may they be reduced?

Batching decisions: The existence of setups creates an incentive for batching, either by task or by client case. In the case management scenario, batching refers to a case manager intentionally grouping together the same type of task for different cases or multiple tasks for one case before switching to another case. While batching reduces the amount of time spent doing setups, it also tends to delay the completion of tasks for two reasons. First, tasks must wait while a batch is formed. Second, since it takes longer to process a batch of tasks than individual tasks, tasks which are not included in the current batch wait longer. The manufacturing operations literature abounds with research on batching, but the service sector does not. (Simons and Russell, 1999) Should batching be used and, if so, how?

Agency Issues

Availability of service resources: It is well recognized that the effectiveness of case management depends on sufficient service resources being available to meet client needs. (Dinerman, 1992; Moore, 1992; Netting, 1992) In cases where sufficient resources are not available, case managers must either take steps to make the most of the services available (perhaps via rationing), create the required services, or at least make recommendations to appropriate decision/policy makers. In such cases, manufacturing research on allocation decisions in a resource-constrained environment may hold promise for transfer/application to the case management setting.

Control or influence over brokered services: It has been suggested that "Case management developed as a response to dysfunctional delivery systems, delivery systems that were structured for the most part, to accommodate providers, funders, and professionals rather than clients." (Austin, 1993) Since many of the service tasks may be accomplished by external agencies, the case manager often has limited ability to ensure that services are accomplished correctly or in a timely manner. (Dinerman, 1992) In fact, it seems possible that by serving as an intermediary, the case manager may have a decoupling effect which makes external agencies even less responsive to the ultimate client. Research is needed to identify ways in which case managers have been or can be empowered to positively influence external service providers.

Communication and handoffs: Since the case manager does not personally accomplish all required tasks, but is responsible for initiating and tracking them, much of the manager's attention is necessarily devoted to communicating with other service providers. Since these service providers may be external to the case manager's organization, a sort of supply chain is

created with the case manager as an intermediate customer. Apte et al. (1998) suggest that a series of operations accomplished by different individuals may result in a loss of ability to deal with customization, build up of work-in-process between operations, and increased errors due to handoffs of responsibility. While the use of external agencies facilitates each organization to focus on their core competencies, it seems reasonable to expect that the suggested problems would increase with both the number of tasks accomplished by external agencies and the number of different agencies involved. Relevant research questions include when to use external agencies (vs. in-house capabilities), which ones to use, and how best to communicate with them.

Predicting lead times: A fundamental expectation of any operations manager is the ability to predict lead times. For the case manager, several factors may cause this to prove a particularly daunting task. First, as discussed previously, the case manager may have to spend time on a case just to determine what processing actions are required and by whom. Second, the decision of when to initiate case tasks may depend on several factors (e.g. relative priority, setups, batching) over which the manager may have limited knowledge at the outset of the case. But perhaps the greatest difficulty for case managers is that they may have little or no visibility, let alone control, over the portion of lead time attributable to external agencies. Theoretical models are needed to help case managers accurately predict lead times.

Environmental Issues

Cross-typology differences: Not all service operations are the same and numerous typologies have been suggested to characterize these differences. (Cook *et al*., 1999) Therefore, the potential success and best means of implementing case management may be different for different service businesses. Both theoretical and empirical studies are needed to show how case management implementation does and should vary along each typological dimension and across various combinations of dimensions.

Integration of services: Often, a client requires a variety of individual services to meet their overall needs. The integration of a service delivery system is determined by the extent to which different types and levels of services are available and delivered within the context of an administrative structure. (Moore, 1992) In other words, even if service resources are available, a service delivery system is not well integrated (it is fragmented) unless the various service providers work well together in systematically meeting client needs. While some have argued that case management would not be needed at all if systems were not fragmented, it may simply be that the role of the case manager differs with the degree of integration. (Moore, 1992; Netting, 1992) Specifically, in highly integrated systems, the client may be aware of several service providers and the case manager may play more of a matching role, i.e. matching customers with the most appropriate service. In a fragmented system, clients may not know who can provide what they need and case managers may play more of a "finding" role, in which their primary contribution is locating or perhaps even developing the needed services. Although the way in which the level of integration relates to case management has been debated, empirical research is still needed both to know the true costs of system fragmentation and to learn what skills sets are needed by case managers.

Tracking and reporting case status: The ability to maintain visibility over cases as they progress through a case management system is important to both clients and service providers. Clients need to know the status of cases so that they can learn of potential problems and plan the initiation of activities which they intend to follow case completion. Service providers need the ability to track case status so it can be reported to customers, to facilitate their ability to control their system's overall efficiency, and to monitor the performance of case managers. However, excessive monitoring may frustrate employees and ultimately threaten the success of the case management system. (Davenport and Nohria, 1994) While information technology is available to provide virtually whatever level of data is desired, prescriptive research is needed to determine optimal levels and uses of case status data.

Performance measurement and rewards: Success in a business endeavor presupposes that success can be defined and measured. Service environments are often "messy" in this regard. For one thing, it is often difficult to measure service output and quality. This problem is also true in the case management scenario, but is compounded by the multiplicity of actors. Perspectives, needs, and desires may differ among clients, between clients and the case manager, between the case manager and external agencies, among external agencies, and ultimately between clients and external agencies. Determining how to measure and reward performance is an open research issue.

Conclusions

The case management approach is widely and increasingly used to manage service operations. While case management is intended to simplify the achievement of several service actions for clients, it creates or compounds service management problems. In this paper, we have tried to identify research opportunities which pertain to clients, the case manager, the external agencies being coordinated, and the environment in which case management takes place.

As providers of services, case managers can benefit from the majority of research conducted on service operations. However, the unique aspects of the case management approach call for research in their own right. In some cases, this research will largely involve extending general service research to address the case scenario. In other cases, the topics are completely new. The widespread use of this approach suggests the potential for significant impacts on practice.

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