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Management control systems as a tool for planned organizational change

Beekman, Matt

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MANAGEMENT CONTROL SYSTEMS AS A TOOL FOR

This article presents an overview of the Huy model of planned organizational change and uses the model to interpret the evolution of the management control systems of two similar organizations over approximately a ten-year period.

PLANNED ORGANIZATIONAL CHANGE

MATT BEEKMAN, ROBERT H. CHENHALL, AND K.J. EUSKE

n management control literature there is growing interest in the role of management control systems in planned organizational change. The existing literature is concerned with either rational, technical change principles or more behaviorally oriented processes of change with little emphasis on how these approaches interrelate. A more holistic approach to the analysis of change is important to develop a comprehensive understanding of the role of management control systems in planned organizational change. Huy[1] provides a useful integrative model that focuses on both rational, systematic practices and the behavioral processes involved in their implementation. This

MATT BEEKMAN *currently serves as the Principal Consultant of the SYSCOM Practice at RGS Associates, Inc. He has over ten years of experience in the area of cost and performance management and was recently elected by the shareholders to RGS Board of Directors. Mr. Beekman is a certified Project Management Professional by the Project Management Institute, and was elected by the Upstate NY Chapter of PMI to the Board of Directors.*

ROBERT H. CHENHALL *is Professor in Accounting and Finance at Monash University. He holds a B.Ec. from Monash University, a M.Sc. from Southampton University and a Ph.D. from Macquarie University. He is a Fellow of CPA Australia. Robert has taught management accounting and business management, specializing in strategic change and in accounting and financial management in Britain, Europe, the U.S.A., and Australia. His research interests are in understanding the relationship between management accounting innovations and the strategy and operations of organizations.*

K.J. EUSKE *is Professor of Accounting at the Naval Postgraduate School. He holds an AB in Economics from Gonzaga University, an MBA from the Amos Tuck School of Business Administration at Dartmouth College, and a Ph.D. in Business Administration from Arizona State University. His work in management accounting and performance management has been widely published in academic and professional publications. He is a member of the Board of Advisors of the Performance Measurement Association.*

is achieved by identifying four idealized intervention types: commanding, engineering, teaching, and socializing. Understanding the application of these four intervention types requires analysis of the way they interact through time.

This article presents an overview of the Huy model and then uses the model to interpret the evolution of the management control systems of two similar organizations over approximately a ten-year period. The organizations selected for the study were similar and provided an ideal opportunity to compare and contrast the organizations' experiences. The two organizations are:

- From the military sector
- Approximately the same size
- Working toward essentially the same goals for change over the same time period
- Implementing the same type of management control systems to provide a platform for change.

Managing change is a core competency necessary for both successfully transforming organizations over time and enhancing organizational performance. There are useful theories that aid in understanding the interaction of planned change in technical and social systems. These theories often prescribe the use of highly rational change management techniques that tend to focus on understanding how behavioral interactions between individuals leads to changed cognitions and belief structures. Other approaches focus on the gap between the assumed and actual and why the effects of purposive interventions may be enhanced or hindered by a match or mismatch between assumptions and actuality.

Background

Researchers such as Simons[2] and Davila[3] have discussed the use of management control systems (MCS) to effect planned change. However, the role of MCS in planned change has not been studied widely. The field of MCS contains little theory or empirical work that specifically addresses change frameworks or how MCS are used in efforts that attempt

to integrate both rational and cognitive perspectives. Rational issues involve purposive change in the design of MCS and other structural and work-related initiatives. Cognitive concerns consider the actions of individuals and include consideration of the cognitions or the knowledge structures, core beliefs, and schemas that influence the way individuals respond to change initiatives.[4]

Using the experiences of an Australian and a U.S. organization, this project provides an analysis of how MCS, initially based on activity-based cost management (ABCM), is used as the basis for change.[5] The change initiatives occurred over similar time periods in both organizations from the initial design in 1993 for the Australian organization, and from 1995 for the U.S. organization, until 2004 for both organizations. Before the change initiatives were started, the organizations had a much greater emphasis on effectiveness rather than efficiency, which was a characteristic of military organizations at the time. Planning and control by operational units was guided by military doctrine and evaluated on the effectiveness in achieving military goals. Efficiency was not totally disregarded; however, it was not a primary focus. Management tended to be operationally focused with few formal management controls to integrate processes. Accounting was used primarily for budgeting, on a cash basis. Decisions on resources were made at senior levels while resource allocation was the responsibility of the operational management who were focused on execution.

Overview of the military organizations

In the early 1990s, both organizations faced political pressure to improve efficiency, to identify the resources associated with different levels of readiness, and to become more accountable for the use of public resources. Additionally, there was growing pressure for the entire public sector to change from a "public service" mentality to a more "business oriented" approach to management. These pressures extended to the military with governments pressuring the armed forces to justify costs

and, more generally, demonstrate concern with delivering outcomes in effective and efficient ways. An innovative MCS based on ABCM was seen as a way to map activities to different capabilities and to associate costs with these activities. On the basis of working with this activity and cost information the senior management claimed that they expected that the organizations' operational management would move from the traditional military effectiveness emphasis to an orientation that focused on efficiency fostering a cost consciousness. This would satisfy political pressure for more accountability and better equip senior management to argue for new resources or indicate the resource and capability implications of budget cutbacks. More generally, it was expected that the MCS would provide a basis for improved understanding of processes with a view to enhancing effectiveness and efficiency.

Australian organization

In Australia, early in the 1990s government pressure resulted in the surprise closure of several facilities in the Australian organization. As a consequence, senior military management recognized it needed to convince government that it understood the resources needed to deliver on agreed policy. Importantly, management needed to demonstrate that it was alert to the costs of conducting defense operations and that it could provide evidence of the pitfalls of resource cutbacks. ABCM had gained popularity in the private sector and was identified as a MCS technique to identify resources associated with the activities of delivering agreed defense outputs. The change process within the Australian organization involved three distinct stages. First, given the novelty of ABCM to defense, an initial stage involved a four-year period (1993–97) of researching, defining, and pilot testing the systems. This was followed by rolling out the systems for managerial use across the entire organization (1998). After two years it was apparent that the systems had atrophied with many personnel believing that ABCM had been abandoned. A third stage involved a

renewal of ABCM (2001), which continues to the present.

U.S. organization

In the U.S. organization, a number of government improvement initiatives and statutes, such as the Chief Financial Officers Act (1990), Government Performance and Results Act (1993), the Government Management and Reform Act (1994), and the Clinger-Cohen Act (1996) helped focus the U.S. organization on providing accountability in terms of costs related to performance outcomes. As in the Australian organization, three stages were identified. In the first stage (1995-1996), there was a growing awareness that the existing program budgeting model was unable to provide meaningful cost information. This motivated a search for an enhanced way to understand costs associated with the work of the organization. As in the Australian case, the growing popularity of ABCM and its potential to help understand costs was recognized by senior management. Senior managers reexamined the efficacy of program budgeting and the potential of ABCM to improve understanding of costs. This culminated in a decision to adopt ABCM in a segment of the organization that accounted for about 30 percent of the organization's costs. In 1997, the second stage involved the testing of ABCM in this segment of the organization. This involved the leaders of the project developing, in house, an ABCM methodology. A pilot ABCM was then initiated at selected sites. In mid-1999 the leaders of the project were transferred and by early 2000 the effort atrophied. In 2001, the third stage, a rebirth of the project commenced.

Theoretical framework

We use a model developed by Huy to examine and contrast the experiences of both organizations.[6] Huy argues that there are four ideal types of planned change: commanding (formal structures), engineering (work processes), teaching (beliefs), and socializing (social interrelationships). Each type is described

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by identifying specific practices and the nature of the implementation procedures, including leadership and the pacing of change. Planned change involves combining these ideal types, deciding on the sequencing of the types, and timing of the sequencing. The effectiveness of change efforts depends on matching these ideal types to suit the context of the organization and the dispositions of individuals involved in change. This study examines the role of ABCM as a platform to induce a planned change from a military to a more business-like management orientation. In this section, we outline the essential practices and procedures of each ideal type.

The Huy approach has distinct assumptions associated with each planned intervention mode. As assumptions differ between modes of change, it becomes important to examine the effective sequencing, timing, and the pace of change when considering how multiple intervention modes are sequenced or act in combination. The explicit consideration of the different intervention modes and the multiple conceptualizations of time make the Huy model particularly attractive for the analysis of the role of MCS as a basis for change when studying change over a relatively long period of time. Exhibit 1 summarizes key attributes of this approach.

The *commanding intervention* follows the approaches taken in formal strategic planning involving examination of the external and internal situations, applying analytical frameworks to make changes in tangible organizational attributes such as introducing formal structures, and acquisition or divestment of people, assets, and systems. Leadership is by a top management team that employs a power-coercive style and is assisted, typically, by external consultants. There are clear orders and sanctions to ensure compliance. Preferred changes are paced in a rapid way to prevent resistance developing momentum. The outcomes of change are near-term and progress towards these is measured in linear, clock-time, which is the same for individuals at both higher and lower levels in the organization. While this intervention aims to achieve highly visible outcomes in tangible factors, it is unlikely that a command intervention will foster long-term changes in basic beliefs and values.

The *engineering intervention* is concerned with analyzing, understanding, and redesigning work processes to improve the quality and speed of work. Approaches such as TQM, quality circles, and process reengineering exemplify this type. Change leadership is managed by skilled work process analysts who guide and develop employees' technical skills. Time is clock-time but is paced to the overall logic of the work processes. As processes and skills take time to understand and develop, pacing is somewhat slower than in the commanding intervention with the type favoring medium-term pacing. Success is based on employees' acceptance and use of new work practices.

Exhibit 1 Assumptions of Change Intervention Ideal Types

Assumptions	Commanding Intervention	Engineering Intervention	Teaching Intervention	Socializing Intervention
Metaphor of organization	Top management as operators of a tightly coupled organization	A machine organization with thinkers and doers	Guided learning culture	Organic open system
Conception of time	Quantitative	Quantitative	Qualitative (inner time)	Qualitative (social time)
Entrainment factors	Outside the organization	Inside the organization (logic of work processes)	Inside the organization (individual psychology)	Inside the organization (interpersonal relationships; shared norms)
Time perspective	Near-term	Medium-term	Moderately long-term	Long-term
Pacing	Abrupt, rapid	Moderately fast	Gradual	Gradual
Ideal organizational state or goal	Portfolio of organizational units positioned to achieve superior performance	Highly productive, efficient work processes to achieve superior performance	Community of responsible, adaptive individuals	Democratic community of semi-autonomous workgroups
Intervention theory	Competitive analysis; top-down driven change	Work-process analysis	Exposing tacit and taken-for-granted beliefs and assumptions	Participative experiential learning
Role of change agents	Commander	Analyst	Teacher	Facilitator; role-model
Typical change actions	Demand strict compliance	Analyze, design work processes, and develop task-based skills	Probe, reveal, teach	Facilitate, empathize, self-monitor
Change tactic	Power coercive	Normative reeducative	Empirical rational	Empirical normative
Typical identity of main change agents	Top executives with consultant support	Work design analysts and external consultants to transfer knowledge	Outside process consultants	Ordinary organizational members

The *teaching intervention* involves a formal analytical and guided learning approach in which individuals collaborate with a change agent to change their own personal fundamental beliefs. The approach uses outside intervention agents to undertake cognitive diagnoses as a prelude to change in behaviors that will enable individuals to learn freely and to accept new values and beliefs. Because individuals will be involved in comparing the changing situation with their past, the change initiative recognizes an individual's "inner time." Inner time is subjective with different events seeming to be passing more or less rapidly. Accommodating inner time requires change agents to be patient and avoid generating too much personal distress by rushing events. This intervention entails a moderately long time period involving a gradual and voluntary process that can rarely be imposed by pure power.

The *socializing intervention* focuses on the quality of social relationships among organizational members and involves issues of individual emotions, power, and politics. As such, this ideal type is more concerned with behavioral factors associated with the process of change. Changes in behavioral interactions are seen as a prelude to changes in beliefs (unlike learning that sees changes in beliefs leading to changes in behavior). Leadership is provided by change agents who are often self-motivated employees. These employees have accepted and believe in the change. They attempt to engage in experiential learning with others. The concept of time is qualitative social time that is defined by meaningful events involved in social processes, such as bonding. The pace of change, therefore, depends on when meaningful events occur that enhance social bonds. Change occurs through the process of personal, open, and imaginative conversations. People respond based on the nature of the relationship between themselves and others. Socializers differ from teachers because the former need to change themselves while the latter are outside or transient to the social systems. The phasing of this type is gradual and long term with change in relational behavior preceding changes

in values. Change agents guide the change process in a cooperative mode with individuals taking time to decide if the proposed change improves their welfare and is not just opportunistic.

Learning from both organizations

A key concern in advancing our knowledge of the change process is understanding how different modes are combined and sequenced to ensure effective change. This section examines data from both organizations to discuss the ways in which the intervention modes were combined and sequenced. It examines relevant assumptions, both temporal and non-temporal, of the four intervention types and shows how Huy's framework of effective planned change requires consideration of situational factors and the dispositions of individuals, both of which evolved through time. In essence, Huy proposes that large-scale change involves the enactment of multiple ideal intervention types: commanding, engineering, teaching, and socializing.

The effectiveness of applying these ideal types depends largely on which modes are combined, the timing of the interventions, and the pace of change. We found that while each organization aimed to effect change by implementing ABCM, they combined and sequenced the interventions in different ways. It is the effectiveness of combining and sequencing interventions that provides organizations with a "temporal capacity" to manage the process of change. Both of our research sites experienced difficulties in developing effective temporal capacity at various times over the ten years of the study. Situational factors of importance in understanding the application of the model were the extent of pressure from the external situation, the extensiveness of the change (organizational or local initiatives), the complexity of the work situation, the level of structural autonomy, and personal dispositions to change.

In both organizations, the motivation to employ MCS to help effect a change from a military to a managerial orientation derived from external political pressure for the organizations to be more accountable and more professional in their use

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of resources. The growing popularity of ABCM in the private sector persuaded senior managers to employ this technique to help effect change. While this initial adoption may be explained in terms of fashion, senior managers appear not to have lost faith in the potential of the technique to assist in providing valuable information critical to their change initiatives over the ten years of the study. The key issue over the duration of the project has been how to implement the systems to gain buy-in by operational managers.

Commanding interventions

The commanding intervention was the first type applied by both organizations. The data indicate that both organizations had an initial intention of implementing a commanding intervention. The Australian case was an organization-wide application; the U.S. case involved two test site applications within decentralized units. The essential difference relates to the extent of change, with the Australian case involving a much larger scale. It is in large-scale change that the comprehensiveness of the commanding intervention becomes particularly important to ensure organization-wide take-up of change programs.[7] The data supports Huy's proposition that the commanding mode is unlikely to be effective unless there is close supervision and the mode delivers fast, highly visible, and regular outcomes. In the development stage for the Australian case, the commanding mode did not produce fast improvements, did not achieve near-term outcomes, was not entrained by outside factors, and was not monitored in quantitative clock time. As predicted by Huy, the commanding mode was not effective in implementing the ABCM-based change initiative with the development taking three years. Even then the resulting product was not complete, being based on a prototype.

In the U.S. organization, an initial commanding intervention was employed. An implementation model for ABCM was developed by three senior managers who were advocates for the new MCS. The new MCS was rapidly deployed and quickly used at test sites. This satisfied the commanding intervention's requirements for fast, visible, near-term outcomes identified in terms of quantitative time. The commanding mode suffered a serious interruption as the key senior personnel were transferred to other duties before they had time to convince other managers to continue with the commanding intervention. The U.S. data provides an elaboration of the critical importance to effective commanding interventions of ongoing entrainment by change program managers. The continuity provided by "external pacers" is required to ensure the initial benefits from commanding interventions can be matched with other activities and synchronized across the organization as the change program evolves.

One of the non-temporal assumptions for the commanding intervention is that top management is in control and will drive the commanding intervention with "the use of clear orders and implacable sanctions to deter disobedience".[8] In different ways, both organizations demonstrated how violating this assumption in their initial implementations leads to ineffective outcomes. The Australian organization did not create a set of clear orders to use the new system, nor were there sanctions for those who did not do so. Moreover, indifference from senior management meant that there was no close personal monitoring to provide clear orders and sanctions. The U.S. organization also had not formalized the commanding intervention by way of clear orders and sanctions. While senior managers were strongly committed, without this level of formality their effectiveness was lost when they were transferred. Leadership within the commanding intervention was clearly important in both organizations. A lack of a strong coercive leadership style in the Australian case and the movement to other duties of the senior managers of the U.S. case resulted in a lack of effective outside entrainment to pace the MCS implementation.

Combining and sequencing interventions

The way in which interventions are combined and sequenced is critical to under-

standing the application of Huy's theory of planned change. Both organizations provide evidence on the difficulties of combining modes derived from incompatibilities in the timing and pacing of the modes. The initial Australian commanding intervention was combined with an engineering intervention. Given the nature of the new MCS, the engineering mode formed an essential element of the change initiative at the planning and rollout phases. That is, this mode facilitated the development and understanding of the work processes underlying the ABCM initiative. It is clear that the organization-wide approach generated high levels of complexity in understanding work processes and developing the new MCS systems. Given this complexity, it seems, with hindsight, that this process would be protracted.

The data indicates that a consequence of combining an imperfect commanding and a complex engineering intervention resulted in domination by the engineering intervention. By emphasizing an engineering intervention, the change managers could demonstrate that the organization was busy analyzing and understanding work processes. This produced a series of engineering-based outcomes. As a consequence, for a period of time there was less pressure from senior management, who had a focus on the commanding mode, to demand evidence of progress towards the organization-wide changes to a more managerial organization. However, it eventually became apparent that the initial expectations of the commanding intervention were not being effected and the change initiative atrophied.

The data also suggests that the slower pacing required for the highly complex engineering intervention did not match the faster pacing required for the commanding intervention. This mismatch in the phasing and the delays caused by the time-consuming process of collecting information from the engineering intervention resulted in a number of negative outcomes. Importantly, the organization was not able to deliver the fast-paced, highly visible outcomes necessary for an effective commanding intervention. Given the long period of time

involved in the engineering intervention, some individuals who were part of the early commanding and engineering interventions were moved to other positions. This resulted in new personnel being confronted with the ABCM change initiative who had no experience with the early commanding mode. Consistent with the model, this appears to have resulted in increased resentment and resistance by those who were affected by the engineering intervention but had no experience with the expectations of the earlier commanding mode.

The U.S. organization did not have a blended or combined set of interventions during the initial stage. It used a focused commanding intervention driven by strong environmental imperatives. However, in the second stage, once the decision was made to implement a new MCS, the commanding intervention was supported with an engineering intervention to identify activities and processes. It is important to note that this engineering mode was less complex and more focused than was the case in the Australian organization. Also, some training was involved in the effort. However, it was directed at instructing how to input data into the system, not on how to use the system. In summary, the U.S. organization employed a strong commanding intervention that provided a disciplined approach for a focused engineering application for the new MCS. This facilitated a pacing for the engineering intervention that was sufficiently rapid to match the needs of the commanding intervention for fast, visible outcomes.

Pacing considerations

The experiences of both organizations show that combining commanding and engineering modes requires the pacing of engineering to be sufficiently rapid to satisfy the requirements of the commanding mode. It also suggests that a strong commanding mode can help to ensure that the engineering intervention avoids problems of scope creep and lack of focus with the objectives of the change initiative. The data supports the contention that without a change in man-

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agers' values, such "deep change" is unlikely to occur. In the Australian case, the managers were able to ignore the change initiative. Attempts to change managers' values to encourage take-up of the new initiatives were attempted by implementing a teaching intervention. However, this failed because of incompatibility with the engineering intervention. It may be speculated that an approach that aligned the sequencing and pacing of teaching with engineering may have had beneficial outcomes and saved the initiative from atrophying. Indeed, recent positive experiences in the renewal stage of the project suggest that this is possible. In the U.S. case, the combined commanding and engineering intervention was effective in generating local enthusiasm for the new MCS. However, the adoption of values consistent with the change strategy was restricted to the junior officers who were designing local systems and not the ultimate users. It is possible, as in the Australian case, that combining the commanding-engineering intervention with a teaching mode could have afforded the opportunity for the members of the organization in the field and at headquarters to accept the new mental model implicit in the system.

In the U.S. case, the initial command-driven implementation could have been a success if key personnel had remained in place for a sufficient period of time to provide clear benefits to those who were actively using the system. Additionally, these benefits could have accrued if the three senior managers had convinced other senior managers to continue the commanding intervention. That support could have set the stage for a socializing intervention to follow with the aim of changing the underlying beliefs given the new behaviors based on the commanding intervention. However, with a change in key leadership the sequencing did not occur.

The data related to the teaching intervention provides evidence to reflect on the process of phasing the pacing of different intervention modes. The sequencing of the teaching intervention during the rollout of ABCM in the Australian organization after the initial commanding and engineering intervention

was an attempt to help managers develop the mental models appropriate for the new decision environment. Huy notes that a slower pacing of the teaching intervention helps to create a less stressful rhythm for the organization, following the commanding and engineering interventions that typically involve rapid and stressful change. However, the teaching intervention is implicitly designed for the sharing of tacit assumptions and cause-effect relationships.

This helps provide the background for people to retrospectively gain a greater understanding of the current change initiative. Although the external change agents implementing the teaching intervention could help the members of the organization reveal their tacit assumptions and cause-effect relationships, they could not effectively relate to new people entering the change environment because of a lack of coordination between themselves and the different external consultants used for the commanding and engineering interventions. The coordination among different external change agents involved in sequenced or combined interventions is implicit in the model. Nevertheless, our data suggest that it may be beneficial to make this obvious point explicit, thereby helping to avoid potential problems in executing multiple interventions.

It is noteworthy that the reintroduction of the teaching intervention in the Australian organization during the renewal stage was effective due to the lessons learned from the earlier disconnect between engineering and teaching consultants and from the prolonged engineering intervention work processes change requirements. Using this information, the teaching intervention was highly focused and pertinent to managers' day-to-day activities. In summary, the matching or phasing of the pacing of combined or sequenced interventions is a key point in Huy's discussion. Our data for both organizations illustrate the mismatch in pacing that can occur in combining different modes and the deleterious effect on the interventions. However, both organizations had the opportunity to reexamine their

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experiences and on reintroducing the MCS change initiatives were sensitive to prior difficulties in sequencing and pacing change initiatives.

Socializing and integration

Socializing is an important intervention mode in Huy's model. This can be distinguished from the other modes as it directly addresses personal interrelationships between organizational members involving changes in relational behaviors as a precursor to changing values. In a sense, it is often the least planned of the interventions requiring organic social facilitation, often by organizational members rather than external consultants. In the Australian case, the success of the socializing mode in a specific unit attests to the effectiveness of this approach. In this case the socializing intervention preceded and facilitated the engineering and teaching modes within the unit.

A central factor in the success of this case was the positive dispositions of the managers in the organization and close working relationship between the manager and the individual advising on the engineering intervention. Without these positive dispositions among the managers throughout the organization, the effectiveness of this combination of intervention modes was not transferable to other parts of the organization. Also, the process of the socializing intervention during the renewal stage of the Australian application demonstrated how personal values could be changed by paying attention to social interactions, supported by a well entrenched, if somewhat simplified, engineering mode. Importantly, this combined intervention was given sufficient time to be effected.

In the U.S. case, the use of training sessions and conferences to encourage socialization was largely effective among the junior officers because of the strong dispositions of the senior managers and the junior officers who were designing and implementing localized models towards the new values embedded in the move to a more managerial way of administering the organization. These dispositions were derived from the educational background of the individuals and their enthusiasm for new initiatives. An additional motivation was for managers to be perceived as part of a group that were up to date with modern management, for promotion purposes. In summary, our data suggest that the ease with which a socializing intervention can be implemented is highly dependent on personal predispositions to the change initiative.

Huy stresses that the context of the organization is important to understand how change should be planned. Thus far, we have noted the importance of the extensiveness of the planned change, the complexity in understanding the work processes underlying the engineering intervention, and the role of personal dispositions to acceptance of the initiatives. The nature of the organizational structure also appears to be important.

In the U.S. organization, the change initiative was implemented within a relatively decentralized structure. The initial failure of the top-down commanding intervention made clear to the senior team of advocates that successful implementation was not an issue of meeting centrally determined time schedules, but rather one of shifting mental models and norms of behavior of the autonomous managers at the local level. With the rebirth of the MCS project, the objective was to develop acceptance of a new way of thinking and acting at the local level. The senior team of advocates chose a combined teaching-socializing approach to accomplish this end. This lent itself to a more decentralized effort than would have a commanding or engineering approach that would have involved a loss of autonomy for the decentralized managers.

In the U.S. case, consistent with the decentralized structure, the ABCM models were developed at the local level during the rebirth. This provided a way to support a combined teaching-socializing intervention at the local level. The models were relatively simple and very focused. The expressed intention was to stimulate the local managers' appetites with readily usable and understandable data so the managers would request more or different data from the model. In other

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words, it was intended to create initial information that was readily usable by the local managers, presuming that they would ask for more. The intervention relied on a pull implementation strategy rather than a push strategy based on changing the values of the managers to acceptance of the ABCM-based change initiative. From the perspective of the combined teaching-socialization intervention, the readily usable data led the managers to new behaviors and provided opportunities to question the decision models they employed. Given that the managers were in effect driving the revisions to the ABCM models through their requests, they were provided the temporal space to adjust their personal decision models according to their own inner time.

In the Australian case, local managers tended to restrict their administrative work to centrally determined processes and procedures. The development of localized procedures and processes was not encouraged. It might be expected that in such a situation it would be relatively easier than in the U.S. organization to introduce a new initiative that would be common to all segments and allow for a close integration between segment applications. The commanding intervention is most clearly compatible with a centralized approach. Several members of the original ABCM team indicated that they thought the initial implementation should have used the centralized structure to force individuals to adopt and use the new systems. However, given an enthusiastic change agent and support from above, encouraging a socializing mode within segments of a centralized organization is possible. It may be necessary for the change agent to be provided sufficient flexibility to encourage dialogue and debate about existing and new processes and systems at the local level.

The way that the different interventions are sequenced and combined appeared to be dependent on situational factors and, importantly, the dispositions of individuals, both of which evolve through time. One example of this is the different scheduling of the engineering intervention in each organization. In the U.S. case, per-

sonal dispositions towards the ABCM initiative were positive. Consequently, the combined teaching-socializing intervention was effective at the local level. An engineering intervention became important to promote compatibility among the various decentralized ABCM models. In the Australian case, negative dispositions towards the ABCM initiative were apparent. So while the intent at the rollout stage was to employ an engineering-teaching intervention for organization-wide change, negative dispositions lead to a lack of systems acceptance. It was not until a socializing mode was employed with its focus on changing values to overcome negative dispositions that the benefits of a teaching-engineering intervention were effected.

From a financial and managerial point of view, the new models in the two organizations generated potential conflict for managers as they eroded (or at least altered) the ability of the managers to place current and future decisions in the same context. Consequently, it was necessary to accept that change would come at a pace acceptable to the individual, not by some prearranged schedule.

Conclusions

The experiences of the organizations reported in this study have been interpreted in terms of a model that combines both rational formal approaches to change with behaviorally oriented modes. This approach shows that understanding the application of MCS to effect changes in managerial orientation requires consideration of how managers sequence different types of interventions and how they time and pace the interventions. There is no best way to combine or sequence the intervention modes; managers must understand how these interventions can blend and support one another in different change environments. Combining, sequencing, and the relevant pacing appear to depend on whether the change initiative is comprehensive, organization-wide, or partial within segments or levels of managerial autonomy and on the complexity of work processes and individuals' dispositions to altering the MCS.

Temporal capacity is a key factor in managing change. Temporal capacity helps balance the tensions that derive from the use of multiple modes of intervention. Without balance, change may generate high levels of confusion and stress, resulting in resistance to change and atrophy of the change initiative. The world of change is one of paradoxes where seemingly incompatible intervention modes must often be combined to successfully effect planned change.

Finally, the role of serendipity must be respected. The arrival of managers with the appropriate dispositions to implement the new MCS to help change the organization at the appropriate time is difficult to attribute to rational decision making processes in either of the two organizations studied. This research demonstrates that an analysis based on a holistic model enhances understanding of the role of management control systems in planned organizational change. Moreover, it demonstrates the ways Huy's holistic model is a useful tool for predicting problems that arose in the change process. More generally, the model provides clues for understanding management control system practices and associated processes that can ensure effective change. ∎

NOTES

[1] Huy, Q.N. "Time, temporal capacity, and planned change," *Academy of Management Review*, 26, 4, 2001, 601–623.

[2] Simons, R. *Performance Measurement & Control Systems for Implementing Strategy*. (Upper Saddle River, NJ: Prentice Hall, 2000).

[3] Davila, T. "The Failure and Promise of Management Control Systems for Strategy Innovation," in Chapman, C (ed.) *Controlling Strategy: Management, Accounting, and Performance Measurement*, (Oxford, Oxford University Press, 2005).

[4] Walsh, J.P. "Managerial and organizational cognition: notes from down memory lane," *Organizational Science*, 6, 1995, 280–321.

[5] Chenhall, R.H. and Euske, K.J. (In Press). The role of management control systems in planned organizational change: an analysis of two organizations, *Accounting, Organizations and Society*.

[6] Huy, Q.N. "Time, temporal capacity, and planned change," *Academy of Management Review*, 26, 4, 2001, 601–623.

[7] See note 5, page 605.

[8] See note 6 above.