Organization Design and the Dynamics of Performance Over the Long Term

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Abstract

This paper addresses the issue of organizational design and its impact on long term business performance. There is evidence that organizations progress through a series of cycles, but the organization design literature typically does not consider these cycles. We examine the organization design recommendations of Forrester in terms of their impact on delays in a company. We then run a small simulation to explore the impact of these delays on long term company performance. We conclude that most organization structures act to impede long term performance.

The Problem

The average life of companies is unexpectedly short. Even substantial companies fail at an alarming rate (Davis and Davidson, 1991). Years ago Greiner (1972) suggested that organizations go through predictable phases of evolution, when there is no major upheaval, interspersed with bursts of revolution when there is intense change. He further argued that the sequence of evolution and revolution is predictable and most organizational failures occur during periods of "revolution". Organizations which successfully navigate through periods of revolution do so by instituting new practices during these periods. Managers should not act to avoid these phases because each phase results in certain strengths and learning experiences essential for success in subsequent phases. Revolutions provide the pressure, ideas, and awareness that afford a platform for change and the receptiveness for the introduction of new practices. But policies that had contributed to solutions in one phase also become the reason for problems in subsequent phases. In short, the practices and structures which lead to success at one time become the limits to an organization's growth at a later time.

This paper explores the implications of system based managerial and organizational design principles on these performance cycles. We argue that the core of the problem is managing the delays of information flowing through the organization. These delays in turn affect the long term performance of the organization.

We agree with Greiner and others who have suggested that cycles are not only unavoidable but may be beneficial to the long term survival of the organization. Besides killing companies, the periods of revolution, or strategic change, provide the impetus for the next period of evolution. They have the potential for re-inventing the organization.

The issue is managing these cycles of prolonged stability followed by major upheaval. Forrester (1965) and others have proposed alternative organizational design and management structures that they expect will lead to long term success. Forrester, in particular, makes some interesting suggestions. We examine these ideas in the context of their effect upon these cycles. Primarily, we will consider how Forrester's recommended policies affect delays in the organization, and it's response to the need for change.

Forrester's (1965) work recommends changes to six components of organizational design if an organization is going to achieve its potential. We suggest that a seventh component needs to be included—a common organizational purpose.

For each of the design elements to have the results intended by Forrester, they must be operating in the context of a clearly articulated and understood organizational purpose. Without this, each of the recommendations may hinder performance by increasing fragmentation of the organization and reducing the clarity of focus or objectives. These in turn add delays to the system. Briefly, we will now review each of Forrester's main points within the context of a purpose driven organization.

Eliminating the superior-subordinate relationship, particularly multiple layers of such a hierarchy, should decrease the lag between an action taken by an individual and its feedback effect from the market upon that individual. With a hierarchy, the feedback is from the superior or from the control mechanism (budget and planning system), and this feedback, even if it reflects the market, will have substantial delays. More likely the feedback will reflect many issues in addition to the market.

Forrester suggests replacing the superior subordinate relationship as it currently exists in most organizations with individual profit centers. His argument is that ultimately this is the fairest means for establishing individual worth. It is not clear that individual profit centers affect information delays in any predictable way. Unless people are being influenced by the overall purpose of the organization, and feedback from the end customer, the gains from reduced hierarchical delay may be negated by negotiations based on self interest rather than organizational purpose.

Forrester further argues that policy is most damaging when it completely defines action and states exactly what is to be done (is low in freedom), is undeterminable and subject to future definition and retroactive determination (low in accessibility), is internally inconsistent and provides no guide for resolving these conflicting pressures (low in consistency), and is imposed on a subordinate for the benefit of the superior. The first set of conditions suppress innovation and initiative, and increase antagonism and confusion. These should, in turn, delay the ability of the organization to respond to the need for change.

Forrester argues that information in organizations is late, incomplete and distorted. He suggests the introduction of a corporate EDP system in "hub and spoke" architecture. We believe that such a system will increase the speed at which information moves, though not necessarily its completeness or accuracy. The latter will be primarily determined by the clarity of the organizational purpose. To the extent that the design of the system reflects the purpose of the organization, it will reduce the delays in the organization.

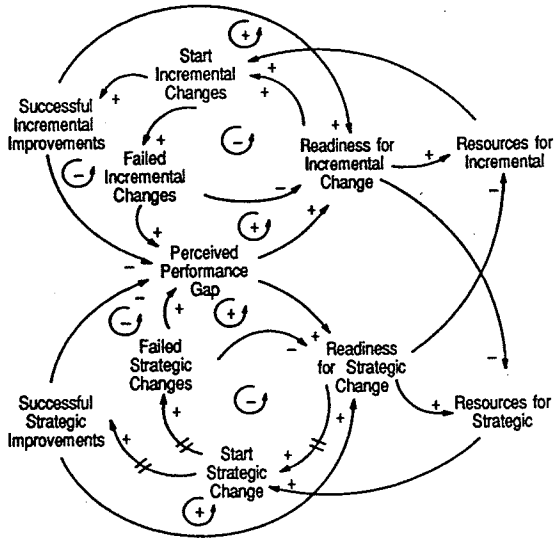
Another of Forrester's recommendations is freedom of internal movement. We believe this will help provide an integrated and faster response to changing environmental conditions.

We believe the same argument can be made for education; and particularly for just-in-time education. This can reduce delays in the system by clarifying the participants understanding of the conditions that they are in, and of the likely solutions to those conditions. This is based on the assumption that the training and education is supporting the requirements of the whole system, not simply part of it.

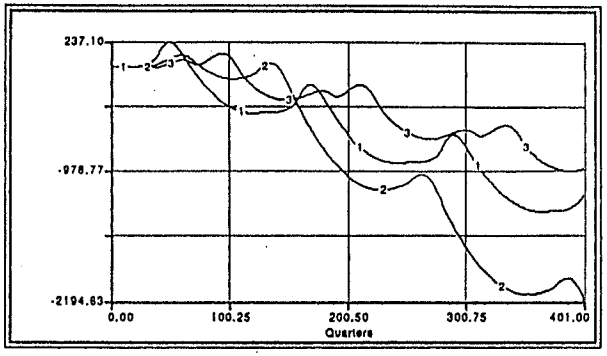
Simulation of Delay Effects

We have identified the impacts that the above design characteristics will have on speed of response of a company. For the most part, we believe that the design characteristics recommended by Forrester, when combined with a shared purpose, will reduce the delays in information flow within an organization. We now turn our attention to the effects of these delays on organizational performance. To explore these issues we have run a small simulation. The causal loop diagram of the model is below. (For more detail on this model see Frechette and Spital, 1991).

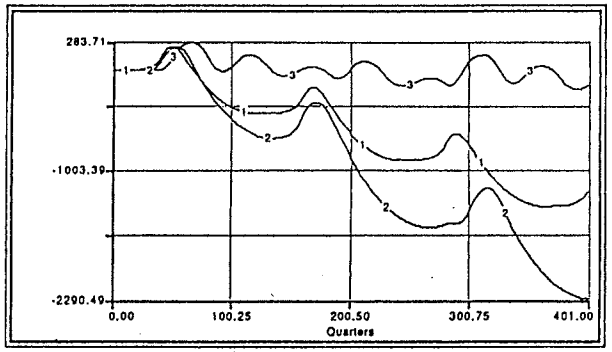
The results of putting delays into this model are shown in graphs 1-4. The first two graphs illustrate the effects on long term performance of increasing delays within the incremental change loop. These delays are between perceived performance gap and readiness for incremental change (graph 1), and between readiness for incremental change and start incremental changes (graph 2). The second two graphs illustrate the effects of delays within the strategic change loop. Graph 3 is the model output with delay between perceived performance gap and readiness for strategic change. Graph 4 is the model output with delay between readiness for strategic change and start strategic change. Our performance measure is cumulative performance gap, where the gap is the difference between expected business performance and actual business performance. Therefore a smaller, or even negative performance gap indicates improved organizational performance. We report the cumulation of this gap in order to make the longer term outcomes clearer.



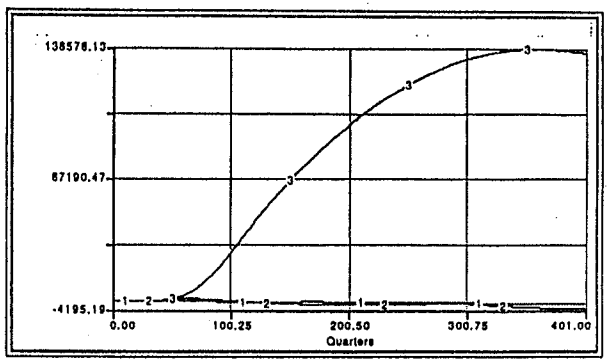
Graph 1. Delay before "readiness for incremental change"



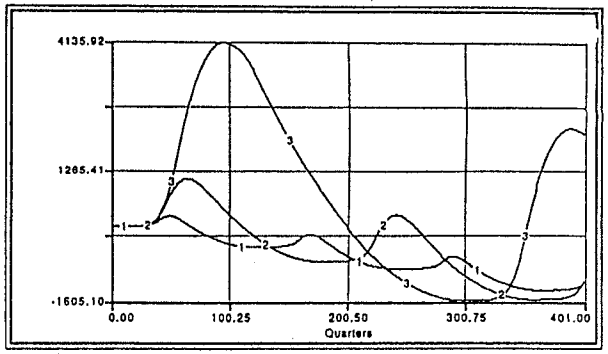
Graph 2. Delay before "start incremental changes"



Graph 3. Delay before "readiness for strategic change"



Graph 4. Delay before "start strategic change"



Graphs 1-4

Run #	Delay
1	0.00
2	8.00
3	16.00

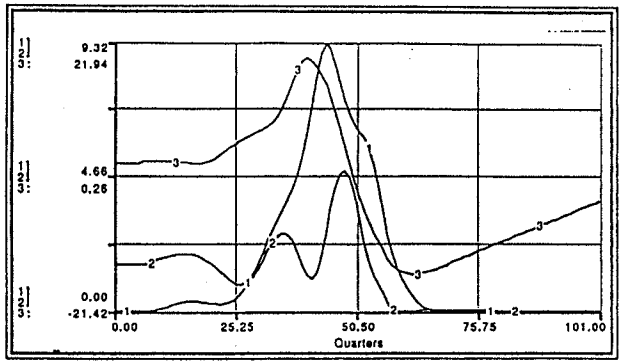
Output variable:

Cumulative performance gap

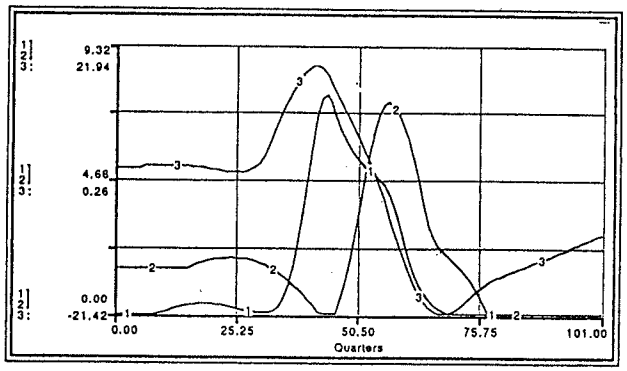
The results shown in graphs 1-2 indicate that an eight period delay in the incremental change loop increases cumulative system performance, relative to zero delay, but that increasing this delay to 16 periods makes cumulative performance substantially worse. The results shown in graphs 3-4 indicate that, contrary to the outcome in the incremental change loop, no delays in the strategic change loop are beneficial. In particular, recalling Greiner's assertion that companies fail during the periods of revolution, it is apparent that delays in implementing strategic changes lead to very large performance gaps during these periods. Delay in the strategic change loop increases the risk of failure, and longer delays make failure a virtual certainty. The reason is that companies that delay strategic changes attempt to correct their performance problems with incremental changes to their current system which is fundamentally flawed. Incremental changes to a flawed system do not lead to success.

An interesting question is why delays in the incremental change cycle initially improve cumulative performance but then, as the delay increases, lead to decreased cumulative performance. Graphs 5-7 shed some light on this question. These graphs show the effects of lengthening delays on perceived performance gap (not cumulated), the number of strategic change experiments implemented, and the number of incremental changes implemented. The time span of these graphs is shorter than the previous set in order to show more detail. These graphs also show the effects of lengthening delays in only one part of the incremental change loop; between readiness for incremental change and start incremental changes. The pattern of delays, and essential dynamics, are the same as for the delay between perceived performance gap and readiness for incremental change. The delay between readiness for incremental change and start incremental changes is set at zero in graph 5, eight periods in graph 6, and 16 periods in graph 7. The graphs show that, with zero delay, incremental changes are implemented earlier. But one of our model assumptions is that incremental changes cannot improve an existing system for more than a few years (see Frechette and Spital, 1991), so these incremental changes begin to fail and drive the perceived performance gap larger in periods 20-35. This larger perceived performance gap invokes strategic changes, with some simultaneous incremental changes to the emerging new system, that drive performance up and therefore perceived performance gap down. As the delay is increased to eight periods, incremental changes are implemented and also begin to fail, but while perceived performance gap is driven to essentially the same peak at the same time it is lower during periods 20-35. The performance gap invokes strategic changes, and incremental changes follow these in order to improve the new strategic system. Perceived performance is then driven to a higher level (lower perceived performance gap), as the strategic and following incremental changes work together. Graph 7 shows that as the delays are increased to 16 periods, the perceived performance gap is initially kept lower but then are driven to a higher peak. The significant difference, though, is in the behavior during the changes. The long delay makes the incremental changes occur far behind the strategic changes and, although they initially improve the new system, they soon can improve it no more and begin to fail. This drives the perceived performance gap higher again, so the cycle of strategic changes starts again much sooner. Thus the wavelength of the oscillations is dramatically reduced by this long delay, and cumulative performance is much worse.

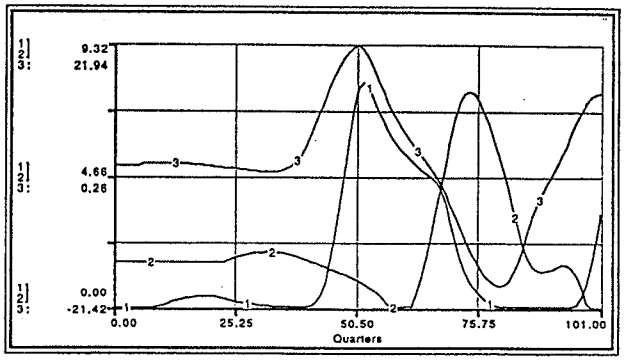
Graph 5. Zero delay before "start incremental changes"



Graph 6. 8 period delay before "start incremental changes"



Graph 7. 16 period delay before "start incremental changes"



Graphs 5-7 output variables:

1 Number of strategic changes
2 Number of incremental changes
3 Perceived performance gap

Conclusions

Organizations appear to progress through a series of cycles over time. Our simulation shows such cycles, as would be expected in a negative feedback model with delays. In our model, changes are invoked by a deviation of actual organizational performance from desired performance. Incremental changes improve the current strategic system. Strategic changes create a new strategic system. Periods with high levels of strategic change are what Greiner has called periods of revolution. Our model outputs illustrate high risk of organizational failure during these times.

Most discussions of organization design do not address behavior in the context of these cycles. In this paper, we have attempted to understand the impacts of organization design on long term performance of a business through these cycles. Forrester's design recommendations, combined with shared organizational purpose, seem to affect delays in organizations. Delays in either information flow or resultant action clearly affect behavior of the system during cycles.

The simulations suggest to us that most organization designs focus too much attention on information flow within functions, and not enough on information flow between functions. The fundamental building block of most organization structures is a functional group, which fragments attention and objectives and moves information more rapidly within functions but delays information flow across functions. This fragmented purpose and information flow may encourage incremental change, which may initially have a functional base, but will clearly discourage strategic changes which are inherently integrated and depend upon cross-functional objectives and information. Since delays in our incremental change loop help long term system performance, provided that they are not too long, but any delays in strategic changes are far more damaging no matter how long they are, then these structures may be pushing in exactly the wrong direction with respect to where delays are experienced. We should encourage cross-functional information flow, and work to reduce those delays, at the expense of intra-functional information flows.

References

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