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Crisis events viewed as a summation of marginal circumstances

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Abstract

This paper hypothesises that crisis circumstances may arise in a particular pattern that could be demonstrated by following the marginal affect of a succession of events upon the behaviour or circumstance of an organisation. That is, a crisis is not the result of a single event but the outcome of a sequence of events which will lead inevitably to the failure of the system. The concept is illustrated using data from 110 very similar small enterprises. The research suggests that, with an awareness of the pattern generated by pre-crisis circumstances, it may be possible to modify the outcome and thus either avoid or minimise the crisis.

1 Introduction

The ideas expressed in this paper propose a model for the occurrence of a crisis – crisis being defined (for the purposes of this paper) as the culminating event that follows a succession of decisions or circumstances. The final event of this succession is defined as the crisis event or crisis circumstance. The actual crisis follows the crisis event.

These thoughts have developed from the unpublished thesis by the author '*The Nature of the Growth of the Firm*' (Herriot 2001). The initial ideas were developed from reported speeches by Justice Sir Daryl Dawson (1995) and Justice Michael Kirby (1996) on the 'mercantile nature' of the legal profession and were subsequently developed in conjunction ideas derived from Penrose (1959, 1995) and Coase (1937). In principle, the object of the research became to test whether businesses could, through some 'natural' circumstance be forced into a financial crisis, resulting in a 'mercantile behaviour' as management strives to minimise losses. In the event the research demonstrated that possibility.

Extending the hypothesis further, but staying within the original range of ideas contained in Herriot (2001), could any organisation through a succession of management decisions be forced into a state of crisis - be that crisis financial or otherwise - even a natural disaster? As an example of the hypothesis being developed, consider the Canberra fires of January 2003. This paper argues that the crisis was the damage to property and disruption to life and services as a consequence of the fire. The crisis event was the fire entering the suburbs of Canberra. The succession of events that preceded the crisis event were a chain of circumstances and decisions, originating with the planting of the pine forests many years earlier and compounding with a geometric acceleration upto and including the day when the crisis event became inevitable. The objective of this paper is to propose a theory of how this and similar crisis events occur. Conceptually the theory can be applied to crisis events whether of the Canberra nature, the failure of a business enterprise or the demise of a regional economy. Possibly, in every example of a crisis, excellence in management decisions could have averted the crisis or at least have minimised the consequences of the crisis event.

2 Diminishing returns

The proposition proposes plotting each event in a chain of decisions to a simple ordinal scale on the independent axis and the marginal consequences of those decisions to the dependent axis. The plot would describe the conventional Law of Diminishing Returns curve. For example, a business from start-up, could be plotted showing the marginal consequences of each management decision. These consequences would compound and describe the usual curve. If the average consequences of each decision were also plotted on the same axis, then the average consequences graph would intersect the marginal consequences graph at the apex of the average consequences curve. This is a direct application of basic introductory microeconomics and proposes the application of diminishing returns theory to management decisions.

3 Transaction costs

The concern of Penrose (1959, 1995) was directly with growth and change of the 'firm', that is the theoretical entity of microeconomics. Coase (1937) proposed the notion of transaction costs. The research for the Herriot (2001) thesis proposed plotting the marginal consequences of management controlled decisions within a known enterprise to determine if a pattern of consequences would result. Employment decisions were an easily quantifiable surrogate, plotted on the independent axis. By their nature, the consequences of these decisions included the transaction costs, but only those transaction costs reflected in the financial records of the enterprise – the 'hidden' transaction costs were not and could not have been recorded. Nor could they have been quantified and included in the research. The research proposed that the effect of the transaction costs, both quantifiable and non-quantifiable, would be to move the intersection of the marginal and average product curves significantly to the right of the position proposed in the microeconomic theory. In the research model only the quantifiable costs are included.

The displacement of the curve can be demonstrated to the extent that transaction costs are visible, that is, there is a dollar effect or a behaviour of an appropriate surrogate. However, the original Coase (1937) concept of transaction costs included the invisible costs of transactions. This research proposes that, if the invisible transaction costs are large, such as they would be in a committee driven or bureaucratic organisation and, if it was possible to quantify the costs of those economic inefficiencies, then the marginal curve and the associated intersection with the average curve would be displaced a very much greater amount to the right. Conceivably an enterprise, whether a very small relatively young enterprise, a medium size enterprise, a government department, a regional area or even a country could become so bound in its own transaction costs that the effective governance of the organisation becomes impossible. Within the concept of this proposition, the organisation, what ever it might be, would become extremely vulnerable to a crisis event.

4 The model

The data plot for a known business (Figure 1) shows the behaviour of marginal product and average product curves against enterprise size. Enterprise size is represented as the number of 'factors of production'. Figure 1 shows marginal product line passed below the average product plot on several occasions. That is, the enterprise was able to drop below the average product line and recover, albeit from a position that had become unviable. Fortunately the enterprise illustrated in Figure 1 was able to alter both its visible and invisible costs quickly, recovering from each event (that is, the crisis within the context of this paper). The recovery in this actual example was achieved by raising funds from the bank and using the personal resources of the owners. Nevertheless, each time the marginal curve passed below the average curve the business was out of control, and incurring significant losses in real dollar terms.

The research model developed from Figure 1 is shown as Figure 2. The example is modified to appear as a succession of parabolic curves, referred to for the purpose of discussion as 'stages'. Each stage is separated by a space which represents the crisis and described as the 'interstitial space'. Within the reasoning proposed in Section 3, the greater the transaction costs, (being the sum of the quantifiable and non-quantifiable transaction costs) the wider would be the interstitial space. Interpreting this, an efficient enterprise with modest transaction costs might have a chance of handling a crisis or, with a knowledge and understanding of its circumstances, avoid a crisis event. On the other hand, an organisation with high transaction costs will find the recovery of its social or business purpose may become impossible. The research model suggests that, after the crisis event triggers the crisis, any organisation is out of control. For most organisations recovery of the business purpose is impossible. However, organisations with access to large resources, for example, share-holders funds or the public purse may recover notwithstanding large losses and reorganisation

5 Life stage models

The model proposed in this research appears to be consistent with the models of life stage theorists who have examined the growth of businesses. Figure 3 overlays the strategic model of Churchill and Lewis (1983) on Figure 2. Their model uses the word 'crisis' to describe the situation that a business in as it moves into the interstitial space of the research model (Figure 2). The model as proposed in their original 1983 paper (not illustrated in this paper) suggests strategic moves that an organisation might consider at the point of crisis.

6 Methodology and discussion

The model was tested for similarity to the behaviour of the real life enterprise illustrated as Figure 1. As explained in Section 4, no provision for invisible transaction costs was made. However visible transaction costs are represented as being included when the marginal product is calculated from the actual trading figures. Figure 2 is a diagrammatic representation of Figure 1.

The research data was secondary and had previously been collected for benchmarking purposes from 110 architectural practices of varying sizes. The real life enterprise (Figure 1) from which the model data was sourced and from which the

research model has been proposed was also an architectural practice. All 110 enterprises were mainstream practices in Australia, for the most part based in Melbourne, Sydney or Brisbane. The data was consolidated such that the mean marginal product and average product of all the practices of each given size and taken to represent those figures as if they had been produced by an individual business of that size. For some sizes very little or no data was available. This methodology was selected because a lineal study of this nature is impossible for practical reasons. A conventional linear study would have required selecting businesses on the day of their start-up, without knowing which would grow to a reasonable size while waiting several years recording their data as they grew. Architectural practices are like most other small businesses in that, although the practitioner and the legal entity may exist for the lifetime of the practitioner, many do not produce viable income, existing only as technical subcontractors to larger viable businesses. All the data used had been provided for research purposes by the accountants to the various practices. All the enterprises would be regarded as successful and viable. Anonymity was guaranteed.

The consolidated data collected produced a Pearson coefficient of 0.3 against the data of the enterprise which was used to create the original graph, Figure 1. Notwithstanding the coefficient of 0.3 a direct plot of the data appeared to give little or no support to the proposition in this research. However when the data was reworked to a three point moving average the plot shown in Figure 4 was produced. The positions of the interstitial spaces have been added to the plot.

7 Conclusion

The original research proposal developed from the observations of the author from direct involvement in the growth and change in his own business. By chance the complete financial records over a 25 year period had been kept and were analysed to create the model (Figure 1) that forms the anchor for this research. The author proposes that the research model (Figure 2) is a reasonable representation of the change in an organisation as it approaches and arrives at crisis. Further, the research demonstrates the improbability of recovery from a crisis event once the crisis has occurred. When the model of this research is linked with the Churchill and Lewis (1983) model as demonstrated in Figure 3, the significance of excellence in management and strategic thinking is highlighted. Figure 4 illustrates the existence of the interstitial spaces occurring in the real life business environment and implies the locations where the business is likely to enter crisis.

The objective of this paper is to encourage discussion of what a crisis is and how such an event occurs. Conceivably, if there were a broad understanding of mechanism that creates a crisis then avoiding or minimising the risk of crisis should be within the reasonable skills of management. The possibility that the model proposed in this paper offers an understanding of the creation of a crisis as the outcome of a chain of the marginal consequences of events warrants further research. The author's immediate proposal is to emulate the original research and methodology with a very much larger and specifically designed research sample. The original example was deficient in the size of some segments. Further research is also warranted to determine if the model is applicable to much larger organisations, governance and regional communities.

References

Churchill, N. C. and V. L. Lewis (1983). "Growing Concerns." Harvard Business Review (May-June 1983): 30-50.

Coase, Ronald. (1937). "The Nature of the Firm." Economica n.s.(4)386-405

Dawson, Daryl (1995). "New view of law puts money first: judge does not like what he sees" Australian Lawyer 30 (10) November 1995: 10-12

Herriot, Robert Gordon (2001). The Nature of the Growth of the Firm. Unpublished thesis, Graduate College of Management, Southern Cross University, Lismore, Australia

Kirby, Michael. (1996) Reported speech to the St James Ethics Centre: Alternative Law Journal 21 (6) December 1996: 257-262.

Penrose, E. T. (1959). The Theory of the Growth of the Firm. Great Britain, Basil Blackwell & Mott Ltd.

Penrose, E. (1995). The Theory of the Growth of the Firm, Edition 3 Oxford University Press Inc.

Biography Robert Herriot

Robert Herriot practised architecture for 25 years before undertaking a research DBA with the Graduate College of Management at Southern Cross University. His thesis subject *'The nature of the growth of the firm'* demonstrated the possibility the enterprises grow through a series of crises and that the survival of the enterprise depended entirely upon how the events prior to a crisis were managed. He currently lectures economics and other business subjects with LaTrobe/Oxford Brooks University programs in Sydney.

Figure 1 Data plot from a known business

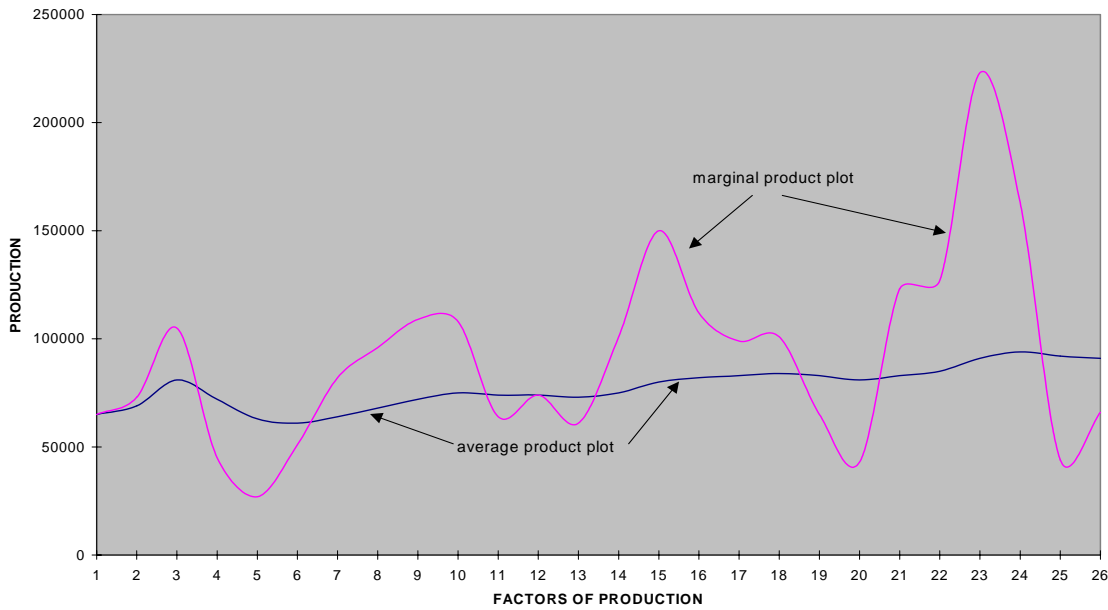


Figure 2 Model proposed for this research

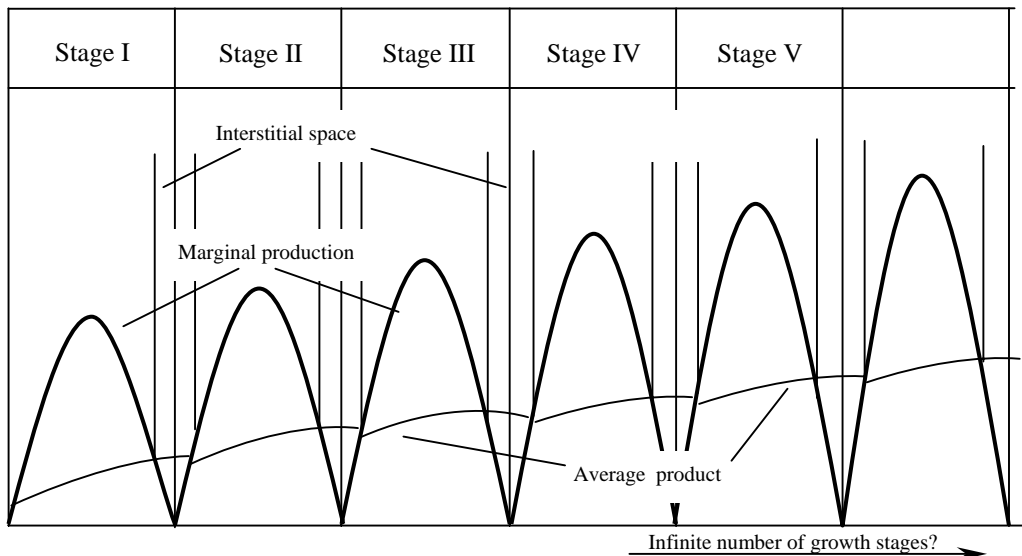


Figure 3 Research model with Churchill and Lewis overlay

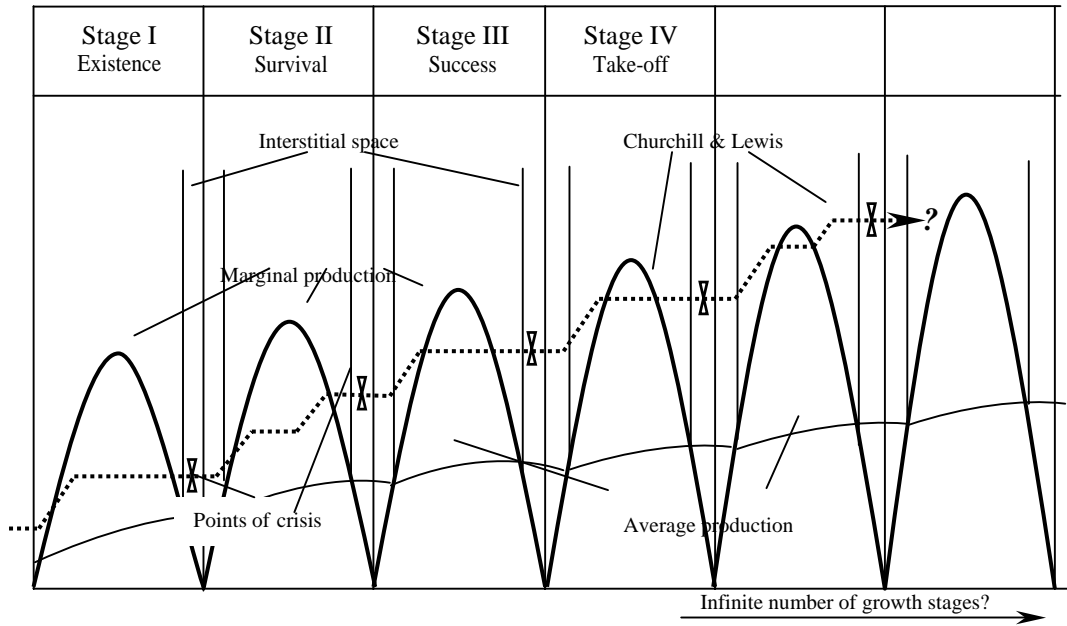


Figure 4 Plot of research data showing actual interstitial spaces

