Fit and Misfits in the Multi-Dimensional Contingency Model: An Organizational Change Perspective¹

by

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ABSTRACT

We present the concept of organizational misfit as a complement to multi-contingency theory fit concepts for organizational performance. Firms with misfits have opportunity losses that firms without misfits do not suffer. Using data from 232 small and medium sized Danish firms, we confirm the hypotheses that firms with either or both situational and contingency misfits have lower performance increases than firms without misfits. Further, a firm may not obtain increased performance from the elimination of misfits piecemeal, but will obtain significant nonlinear positive increases when misfits are fixed within a holistic or systems approach.
Today’s managerial challenge is to design and re-design the organization for continuing changes in markets, products, product and information technology. In this paper, we develop and test a theory of organizational misfit as a managerial approach to the demands of change for the organization. A misfit is a misalignment of the organization with its environment, strategy, climate, technology, management style or size. There can also be a misalignment among these situational factors. Further the organizational design can be out of kilter, eg, the formalization and decentralization may not fit together. A theory of misfit yields a means for management to assess its design and change it on an ongoing basis. Our approach includes multidimensional causalities, nonlinearity, and longitudinal perspectives - elements of organizational forms studies (Lewin and Volberda, 1999).

We first review the basic notions of fit and misfit within the contingency model of organizational theory. Then, we present our multidimensional contingency model and discuss fit and misfit from an organizational change point of view. Next, hypotheses are developed which relate misfits to performance. We test the hypotheses using data from 232 Danish SME’s. Finally, we discuss the results from a managerial point of view and show that a holistic management view of organizational change is necessary to enhance financial performance, (Gresov and Drazin, 1997).

FIT AND MISFITS IN CONTINGENCY MODELS

The concept of fit is central to organizational contingency theory. The development of the contingency model for organizational design rests upon the assumption that a fit among the “patterns of relevant contextual, structural, and strategic factors” will yield better performance than when misfits occur (Doty, et al, 1993, p.1196). Earlier Chandler (1962) developed a strategy – structure fit proposition as “structure follows strategy.” Lawrence and Lorsch (1967) developed the “environment – structure” fit proposition in their study of the plastics, food products and container industry firms. Woodward (1965) observed fit between the firm’s technology and the firm’s structure. These separate contingency imperatives were incomplete. Mintzberg (1979) introduced a more integrated view of contingency notions and proposed a multiple contingency model, which suggested that size, technology, environment, and management would affect the choice of an appropriate structure for the firm. However, even this integrated view seems to be incomplete (Doty et al,1993). Meyer, et al, (1993) developed a configurational model which incorporates multiple variables which they find very promising. Drazin and Van de Ven (1985) categorize contingency
theories into selection, interaction, and systems. Herein, we adopt a systems approach to contingency theory where “fit is the internal consistency of the multiple contingencies and the multiple structural characteristics; it affects performance characteristics” p. 515.

For fit, congruency, matching, balance, compatibility, and complementary are synonyms. For misfit, incongruency, misalignment, out of kilter, incompatibility, and a gap are synonyms; all suggest that the situation or condition requires attention and change to realize better performance for the organization. In other words, an organization that performs well will have fewer major misfits than an organization that has numerous misfits. The notion of fit again suggests that the organization is structured and positioned to do well, efficient and effective in its activities. Misfit is the deviation from the ideal fit.

The concept of fit and in particular misfit is fundamental in organizational design. The organizational imperatives of environment, technology, size, strategy, and leadership require a fit of these factors with the characteristics of the organization, such as its level of decentralization, formalization, etc. There are numerous fit statements that include the environment, size, technology, strategy as well as the climate and leadership style: The multi-contingency model is a fit model, which also incorporates notion of misfit.

THE MULTIDIMENSIONAL CONTINGENCY MODEL

Burton and Obel (1998), and Baligh, et al (1996) developed a multidimensional contingency approach that relates organizational size, climate, strategy, technology, environment, and leadership preferences to organizational structure and design to assure an efficient, effective and viable organization. It is a systems model, which incorporates a simultaneous multidimensional concept of fit as discussed by Drazin and Van de Ven (1985). The model is shown in Figure 1. The basis for the model is an information processing perspective (Galbraith, 1973, 1974, Arrow, 1974, Tushman, 1988) where the organization is designed so that the information processing demands are aligned with the information processing capacity of the organization.

Burton and Obel (1998, p, 15 – 18) develop four types of fit: Situational Fit, Contingency Fit, Design Parameter Fit, and Total Fit. Situational fit requires that the design situation or factors are congruent.
Basically, this states that the firm’s environmental, technological, strategic, and management situations are aligned. Contingency fit is the traditional fit notion among the multiple variables in the organizational design and a set of contingency factors. Design parameter fit is the internal consistency among the structural dimensions. E.g., a non-formalized structure fits with a results-based incentive system. Total fit is simultaneous realization of these three fit criteria and obtains if no misfit exists, (Burton and Obel, 1998). Miller (1992) discussing external vs. internal fit argues that it may be difficult concurrently to obtain the different kinds of fit and a sequential approach may be needed to obtain total design fit. This may include “periodical disrupting the harmony” to adjust to changes in the situation while more generally “striving for harmonious alignment”.

The important issue in the model in figure 1 is to develop simultaneous fit among the various dimensions (Burton and Obel 1998). The model includes the traditional contingency factors of environment, strategy, technology and size, and additionally introduces management preferences and the organizational climate. These latter factors are important for the information processing capacity of the organization. Each of the dimensions has a number of sub-dimensions. E.g., environment is categorized with respect to uncertainty, equivocality, complexity, and hostility (Burton and Obel, 1998, Chapter 6).

An organizational misfit is a condition where the organization performs less well than it could, due to the misalignment. Misfit is a complement concept to fit; one implies the other, at least in part. Fit is a statement of what has been found to work well and an ideal of what should be; a misfit is a statement of what is not likely to work well, and should be fixed. Misfit relations are complement relations, i.e., fit notions contain implicit misfit notions. E.g., a fit statement that a routine technology fits with a defender strategy is a complement statement to a routine technology is not a good choice for a prospector strategy. Similarly, procedural-based incentives fit well with a bureaucracy, where results-based incentives are not a good choice for a highly formalized organization.
FIGURE 1

The multidimensional contingency model.

The Contingency Factors for Organizational Structure

Properties and Structural Configuration of the Organization

Structural Configuration

S I T U A T I O N

Management Style
Climate
Size/Ownership
Environment
Technology
Strategy

CONTINGENCY FIT

DESIGN

Simple, functional, divisional, machine-bureaucracy, matrix, professional bureaucracy, and adhoc

Properties

Complexity and differentiation
Span of control
Formalization
Rules
Procedures
Professionalization
Centralization
Communications
Meetings
Reports
Media richness
Incentives

Fit Criteria:

Effectiveness
Efficiency
Viability
Situational Misfits

Situational misfits arise out of fit statements, as discussed above. Figure 1 depicts the situational fit relations among the factors of management style, climate, size, environment, technology and strategy. Burton and Obel (1998, p. 314 – 316) developed a number of situational misfits:

- If the technology routineness is high and the environmental uncertainty is not low then there is a potential situational misfit. (Burton and Obel, 1998, proposition 9.2) This misfit proposition is a complement to the fit proposition that a routine technology that does not change easily fits well with an environment that has low uncertainty and does not call for change. The misfit argument is that a routine- or stable technology will not work well in an uncertain and changing environment. Change will be difficult and yield poor performance.

- If the environmental uncertainty is high and the strategy is defender then there is a potential misfit. (Burton and Obel, 1998, proposition 9.10) This misfit proposition is a complement
statement to the fit-notion that a defender strategy works well in a more certain and stable environment (Miles and Snow, 1978).

- If the climate is a developmental climate and the strategy is a defender then there is a potential misfit (Burton and Obel, 1998, proposition 9.44). This misfit proposition is a complement to the fit notion that a developmental climate fits well with a more exploratory strategy of e.g., a prospector.

Burton and Obel (1998, p. 309 – 312) present 48 such misfit propositions. They are included in Appendix 1. Each has its origin in a fit proposition of what is required for high performance. The complement is that a misfit will diminish performance. Further, we posit that additional misfits will further decrease the firm’s performance. More misfits will further diminish the firm’s performance. With the situational fit as a preferred state, we propose:

Hypothesis 1: Firms with situational misfits will have a significantly lower increase in performance than those firms with no situational misfits.

Hypothesis 1a: The more situational misfits the more the performance decreases.

Contingency Misfits
Similarly, contingency misfits arise from contingency fit propositions. In figure 1, contingency fit propositions relate the situational factors to the structural configuration and the properties. Again, to illustrate,

- If the leadership style is characterized by high microinvolvement and the decentralization is high, then there is a potential misfit. The fit proposition is that high decentralization should be matched with low microinvolvement by top management. A high microinvolvement by the top managers says that the leaders want to be involved in the management details, which is not compatible with high decentralization. This is likely to be a conflict situation, where lower management sees the top management as meddling and intrusion. This conflict is likely to be non-productive and yield lower performance.

8
If the organizational climate is a group climate and the centralization is high, then there is a potential misfit. Here again, the fit proposition is that the group climate calls for the group to make the decisions and a higher decentralization. The high centralization is likely to cause a conflict over decision-making authority and lead to inefficiencies and yield lower performance.

If the size of the firm is large and the centralization is high then there is a potential misfit.

If the environment has high uncertainty and the centralization is high, then there is a potential misfit. The classic fit proposition is that a large organization should be decentralized so that the top of the organization does not suffer for information and decision overload. Further, top management may not have the relevant information to make good decisions. There are also correlate arguments that decentralization yields greater motivation and “buy-in.” Thus, centralization for a large organization is a misfit.

If the technology is highly routine technology and the configuration matrix, then there is a potential misfit. A fit proposition is that a routine technology calls for a functional configuration, one that is more oriented to efficiency and handles the routine well. A matrix deals better with the non-routine technology where continuing adjustment is needed. Further, a matrix introduces more costs. Thus, the routine technology and matrix configuration are a misfit.

If the strategy is prospector and the formalization is high, then there is a potential misfit. A prospector strategy calls for flexibility, where a high formalization is likely to restrict and impede the requisite variation in action for a prospector, thus a misfit.

In Appendix 2, we present an extended list of contingency misfits. All have their complement in fit propositions of the multi-contingency theory of design as presented in Burton and Obel (1998). Further, we argue that additional contingency misfits will adversely affect the performance of the firm. With the fit propositions as statements of a preferred design, we propose:

**Hypothesis 2:** Firms with contingency misfits will have a significantly lower increase in performance than those with firms with no contingency misfits.
Hypothesis 2a: The more contingency misfits the more the performance decreases.

Total Fit
Above the situation fit and contingency fit were discussed. Each may be important individually, but they may depend on each other, so the effect of obtaining a fit in one dimension may be hampered by the other. Thus firms with total fit will perform better than do firms with misfits present. Further, we extend the usual contingency proposition to a change proposition that total design fit will increase the performance over firms with misfits. We then propose an overall proposition:

Hypothesis 3: Firms with misfits will have a significantly lower increase in performance than those firms with no misfits at all.

DATA, ANALYSIS, AND RESULTS

Data
The data come from a study of about 1000 Danish small and medium sized companies in the western part of Zealand, Funen, and the southern part of Jutland. The data include financial performance, sales and marketing data, leadership style, organizational psychological climate, organization, and strategy. The data were collected in March and April 1997. The financial data for 1996 and 1997 were collected from public sources, as they became available in 1998 and 1999. The data collection procedure, validation and the data are described in Eriksen and Døjbak (1998a, 1998b). The overall response rate was 48% in the study. A test for sample bias showed no significant bias. The questionnaire was tested in a pilot test to enhance validity and reliability.

The data used in this study are data from the 245 production companies with 10-499 employees which answered all the questions related to this study. Companies with a calculated PERFORMANCE lower than -3000% were excluded (a total of 13 companies) This was done in order to avoid a severe left-skewness in the distribution of PERFORMANCE, which would have inflated the reliability of the significance levels in the ANOVA calculations. Thus, 232 firms were studied. For each of the dimensions in the model one or more questions were asked. For strategy and climate a cluster analysis was carried out to categorize the answers into the five dimensions of strategy and the four dimensions of climate (Burton and Obel, 1998, Burton et al., 1999). The questions were based on the 60 questions in the OrgCon system, Burton and Obel (1998).
Performance measure
The performance is:

\[ \text{PERFORMANCE} = \left( \frac{\text{PROFIT}_97 - \text{PROFIT}_96}{\text{ASSETS}_96} \right) \times 100\% \]

where \( \text{PROFIT}_96 \) and \( \text{PROFIT}_97 \) refer to the profit in the particular year. Thus the PERFORMANCE measure is the change in the return on assets (ROA) from one year to the next. One of the problems in the contingency model has been to find the lag between changing the organization and strategy and the effect on the financial results. Our performance measure looks at the immediate change in the direction and not the absolute value. It is the conjecture that misfits do not deteriorate performance instantly, but influence performance over time. However, the performance direction changes rather quickly. The chosen performance measure also removes some of the differences due to specific circumstances related to the individual firm. However, our measure does not remove effects due to industry differences (fast growing versus slow growing industries). In this study, where we analyze small and medium sized production companies in a selected geographical area with a rather homogenous technology basis (e.g., no high tech companies), this is not a major problem.

The profit measure reflects the changes in ROA in 1997 and the misfit data was collected early 1997, so it reflects the effect of misfits in the particular year.

Analysis of Situational misfits
To test hypotheses 1 and 1a the situational misfits were coded into ten variables:

- \text{TECHNOLOGY\_CLIMATE},
- \text{STRATEGY\_CLIMATE},
- \text{MANAGEMENT\_CLIMATE},
- \text{ENVIRONMENT\_CLIMATE},
- \text{STRATEGY\_ENVIRONMENT},
- \text{STRATEGY\_TECHNOLOGY},
- \text{MANAGEMENT\_ENVIRONMENT},
- \text{MANAGEMENT\_SIZE},
- \text{MANAGEMENT\_TECHNOLOGY AND TECHNOLOGY\_ENVIRONMENT}.

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\(^2\) We did a regular cross-sectional analysis and got directional consistent results, but the results were not significant.
Each of these variables can take the value –1, 0, or 1. These 10 variables measures the misfits between the variables in figure 1. If a variable has the value 1, then the firm does not have any situational misfit at all. If the value is 0 the firm does not have a misfit related to the particular variable, but does have at least one misfit in one of the other variables. If the value is –1 then there is a misfit related to the particular variable and there may be a misfit in other variables as well. We use the companies with the value 1 as our benchmark. The difference between the firms with the value 1 and those with a value 0 is due to misfits different from the variable considered. The difference between firms with the value 0 and those with the value –1 is a misfit in the specific variable. The specific list of misfits and the coding is given in APPENDIX 1.

We used these ten variables in an ANOVA analysis, with the dependent variable PERFORMANCE as defined above. The results are given in Table 1.

Table 1 shows that each of the 10 variables is significant at the .10 level. However, misfits related to management-environment, environment-technology, and management-technology are significant at the .05 level. The model F value indicates a good model fit, as well as the R-square of .17, which implies that 17% of the variation in the PERFORMANCE variable is explained by variation in situational (mis)fits. Table 1 generally shows that if the firm has a situational misfit then the performance is lower than if the does not have situational misfit. Thus hypothesis 1 is supported although not at a very strong level of significance.
### TABLE 1
Investigation of impact of situational misfit. ANOVA for PERFORMANCE

Model F Value: 2.14 Prob(F): 0.0043 R-square: 0.17

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Table 2 shows the relationship between PERFORMANCE and the number of situational misfits. There does not seem to be a simple linear relationship. The explanation could be that some misfits are more damaging than others are. It could also be explained by the fact that if one variable changes e.g. the environment, then this could be counted as many misfits as it will create a misfit with all the remaining variables assuming they were properly aligned. The misfits can be grouped into three groups: 0 misfits are better than 1-4 misfits, which again are better than 5-7 misfits. This shows that the data partially support hypothesis 1a.

### TABLE 2

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**Analysis of contingency misfits**

To test hypothesis 2 and 2a the contingency misfits were coded into four variables CONFFIT, FORMFIT, CENTFIT, and COMPFIT each representing if there are contingency misfits related to configuration, formalization, centralization, and complexity. Each variable can take the value –1, 0, and 1 as before. If a variable has the value 1, then the firm does not have any contingency misfit at all. If the value is 0 the firm does not have a misfit related to the particular variable, but does have at least one misfit in one of the other variables. If the value is –1 then there is a misfit related to the particular variable and there may be a misfit in other variables as well. We use the companies with the value 1 as our benchmark. The contingency misfits and the coding of the variables are shown in APPENDIX 2. The list of contingency misfits was developed from the fit propositions given in Burton and Obel (1998).
We used these four variables in an ANOVA analysis, with the dependent variable PERFORMANCE as defined above. The results are given in Table 3.

From Table 3, it is clear that each of the 4 dimensions categorizing the contingency fit is strongly significant. The model F value indicates a good model fit, as well as the R-Square of 0.108, which indicates that 11 per cent of the variation in PERFORMANCE is explained by variation in contingency (mis)fit. For each dimension, the F test size and the corresponding probability is strongly significant. Further, for each dimension, the average PERFORMANCE is much higher for those without any contingency misfits (coded as 1) than those with misfits. As an interesting observation notice that those firms that have misfits (coded as 0 or -1) do not perform very different. This implies that the effect of removing a misfit in one of the four dimensions may not pay off, unless all misfits are removed. This strongly supports hypothesis 2.

**TABLE 3**

*Investigation of impact of contingency misfit. ANOVA for PERFORMANCE.*

Model F Value: 3.39 Prob(F): 0.0011 R-Square: 0.11

<table>
<thead>
<tr>
<th>Level of</th>
<th>N</th>
<th>Mean of PERFORMANCE</th>
<th>SD of PERFORMANCE</th>
<th>F</th>
<th>Prob(F) (1 – sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONFFIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>34</td>
<td>4.72598608</td>
<td>14.3379941</td>
<td>3.30</td>
<td>0.019</td>
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<tr>
<td>0</td>
<td>32</td>
<td>0.39487595</td>
<td>11.4575606</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td>166</td>
<td>0.45318706</td>
<td>7.2984911</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FORMFIT</td>
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<td></td>
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<td>75</td>
<td>-0.02014354</td>
<td>9.3524649</td>
<td></td>
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<td></td>
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<td>34</td>
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<td>14.3379941</td>
<td>3.40</td>
<td>0.018</td>
</tr>
<tr>
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</tr>
<tr>
<td>-1</td>
<td>12</td>
<td>-0.71100553</td>
<td>7.1187202</td>
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</tr>
<tr>
<td>COMPFIT</td>
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<td></td>
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</tr>
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<td>1</td>
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<td>14.3379941</td>
<td>3.39</td>
<td>0.018</td>
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<tr>
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<tr>
<td>-1</td>
<td>64</td>
<td>0.84661951</td>
<td>8.5065328</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From a total of 232 firms, we found that 34 did not have any contingency misfits. The highest number of misfitting firms (166) were found for configuration. Formalization and complexity misfits are found in 75 and 66 firms, respectively, whereas only 12 firms have centralization misfits.

The following table 4 shows the average PERFORMANCE for those firms misfitting 0, 1, .., 4 of the above dimensions. As before, 34 firms do not have any contingency misfit. For the 107 firms with misfits in only 1 of the four dimensions, it is interesting to see that their average PERFORMANCE drops drastically. Thus hypothesis 2a is not supported.

<table>
<thead>
<tr>
<th>Number of contingency misfits</th>
<th>N</th>
<th>Mean of PERFORMANCE</th>
<th>S.D. of PERFORMANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>34</td>
<td>4.72598608</td>
<td>14.3379941</td>
</tr>
<tr>
<td>1</td>
<td>107</td>
<td>0.52775110</td>
<td>8.0841097</td>
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<td>2</td>
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<td>8.2622717</td>
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<td>3</td>
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</tr>
<tr>
<td>4</td>
<td>1</td>
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<td></td>
</tr>
</tbody>
</table>

Analysis of contingency misfit, conditioned on situational fit/misfit.

To test hypothesis 3 and analyze the partial effects of situational fit/misfit and contingency fit/misfit, and in order to account for the interaction between those two dimensions, we constructed the following two variables:

CONTFIT: -1 if the firm has any contingency misfit, and 1 otherwise, and
SITFIT: -1 if the firm has any situational misfit, and 1 otherwise.

Next, we performed an ANOVA analysis of the effect on PERFORMANCE from the two partial affects CONTFIT and SITFIT and the interaction effect CONTFIT*SITFIT, where the latter variable is understood as a variable with four levels for the four possible cross combination of levels from the two former variables. The results are provided in Table 5.

| Investigation of combined impact of contingency and situational misfit. |
ANOVA for PERFORMANCE.

Model F Value: 5.85 Prob(F): 0.0007 R-Square: 0.07

<table>
<thead>
<tr>
<th>Level of:</th>
<th>N</th>
<th>Mean of PERFORMANCE</th>
<th>S.D. of PERFORMANCE</th>
<th>F</th>
<th>Prob(F) (1-sided)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1</td>
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<td>14.3379941</td>
<td>6.48</td>
<td>0.0060</td>
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<tr>
<td>-1</td>
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<td>8.0791935</td>
<td>3.18</td>
<td>0.039</td>
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<td>SITFIT</td>
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<td></td>
</tr>
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<td>1</td>
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<td>7.90</td>
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</tr>
<tr>
<td>-1</td>
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<tr>
<td>CONTFIT * SITFIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 1</td>
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<td>17.4908119</td>
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<tr>
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<td></td>
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<tr>
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<td>8.6539084</td>
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<tr>
<td>-1 -1</td>
<td>172</td>
<td>0.6348324</td>
<td>7.9980922</td>
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<td></td>
</tr>
</tbody>
</table>

The highly significant Model F value indicates a good model fit. The R-Square indicates that 7 percent of the variation in PERFORMANCE is explained by variation in contingency (mis)fit and situational (mis)fit and the covariation between these. Each of the three effects is significant, and it is especially noted that the interaction effect is strongly significant. The isolated effect of removing contingency misfit is clear, as the 34 firms without contingency misfit has a higher mean PERFORMANCE than those firms with contingency misfits. Likewise, the 42 firms without situational misfits perform better than those firms with situational misfit, though the difference is slightly lower than for the contingency fit effect. The interaction effect is most interesting: The group (16 firms) without any misfits has a remarkably higher mean performance than the mean performance of any of the other groups. Especially, it is important to see that the 26 firms who removed situational misfit without removing contingency misfit - as well as the 18 firms who removed contingency misfit without removing situational misfit - do not perform better (but rather worse) than the 172 firms who have misfits in both dimensions. This proves that removal of misfits do not lead to seriously improved PERFORMANCE unless all misfits are removed. In fact, one may even get the impression that partly adjustments may be directly damaging for the firm if these are not a part of a holistic effort. Thus hypotheses 3 is strongly supported. Additionally, the results on the main effects also support hypotheses 1 and 2.

What can be gained from removing misfits? - A macro perspective.
It may be interesting both from the individual firm’s point of view as well from a regional economic point of view to pose the question: What could be gained by the sample group of companies if all the misfits were identified and removed. From Table 5, the expected total losted earnings per year due to misfits may be easily calculated as: $18 \times 85274.33 \times (10.07 - 0.02)/100 + 26 \times 112733.77 \times (10.07 - 0.82)/100 + 172 \times 72806.12 \times (10.07 - 0.63)/100 = 1674673.70$, where $85.274,33$, $112733.77$, and $72806.12$ is the average assets in thousands of DKR for the groups with misfits, respectively. In other words, this illustrates that the expected amount of earnings to be realized if all misfits in the 216 firms were removed is 1.6 billion DKR.

**DISCUSSION AND IMPLICATIONS FOR THE DYNAMIC DESIGN PROCESS**

We have extended and tested the contingency theory of organization in two important ways: first, we have developed a multi-contingency theory of organizational misfits that complements the traditional contingency theory of organization, and second, a longitudinal/change-oriented test of these misfits provides significance evidence to support a comprehensive fit-misfit model. This total or systems model provides an operational approach to the organizational design change process, or re-design.

Beginning with our third hypothesis, we confirmed that misfit deviations from a total design fit diminish performance, where performance is the increase in annual return on assets for the small and medium size Danish manufacturing companies. That is, misfits are costly, or yield significant opportunity losses. The first hypothesis is confirmed. Situational misfits alone will also yield lower increases in return on assets. Additionally, hypothesis 1a is weakly confirmed such that the more misfits the worse the performance. Similarly, the second hypothesis is confirmed, thus contingency misfits also yield diminished performance. However, hypothesis 2a is not confirmed. That is, additional contingency misfits do not diminish performance in a linear fashion. This is an important result. The traditional contingency theory of organization is too limited; a systems view (Drazin and Van de Ven, 1985) is needed. A single misfit may not decrease performance; however, the fixing of a combination of misfits can have significant returns, and further, we found that the simultaneous fixing of situational and contingency misfits together yields positive nonlinear returns. The whole of the organization should be fixed.

In addition to investigating the hypotheses, we observe that a corollary to hypothesis 3 is that
contingency fit will have its best effect when the situational fit is also obtained. That is, contingency fit alone is important, but does not realize maximum gains unless the situational misfits have also been fixed. However, contingency fit seems to be marginally more important than situational fit. The interaction of situational and contingency misfits is significant and most interesting from a managerial point of view. The multi-contingent or systems view is required to realize the maximize returns; piecemeal approaches may or may not help.

We also observe that the absolute increase in performance from fixing misfits may not be realized immediately. We measured the situational factors and the design in 1996 and then the change in return on assets over the next year. In general, the total fit yields a performance of an increase of 10% points in return on assets compared to 4.7% points for contingency fit and 3.3% points for situation fit. That is, if the firm wants to improve dramatically, it should fix its misfits – all of them.

There are two important aspects of the performance measure vis-a-vis a cross sectional measure. First, it is an increase in returns and second, it is a longitudinal measure…improvement over time. Thus we were able to capture changes in direction before they materialized in absolute superior performance. The firm may experience misfits, e.g. when the external environment changes or may for strategic reasons create misfits itself (Tushman and Romanelli, 1985 and Miller, 1992). The creation and timing of misfits may be as important as the subsequent alignment. A change in one variable may create a whole series of misfits. The decision to merge usually creates many misfits and the proper alignment is crucial for the success. A change in the competitive situation, e.g., for Oticon (Burton and Obel, 1998), may require a dramatic turnaround including the creation of numerous misfits, but first with the subsequent proper alignment the significant financial results appear (Børsens Nyhedsmagasin, November 1999).

CONCLUSION

We have shown that a revised multidimensional contingency theory for organizational design and adaptation is an important theoretical framework to explain the results of organizational change efforts and a tool for managers to improve the firm’s performance. Additionally, the notion of misfits is found to be an important managerial concept.

More specifically, we have shown:
- Performance improvement from eliminating misfits is only revealed through longitudinal and change data.
- When a firm removes all situational and contingency misfits together, the performance is improved significantly.
- A firm may benefit from an isolated removal of situational misfit or a contingency misfit, but if this is not part of a holistic effort, then the effect is likely to be greatly diminished.
- The elimination of misfits is a desirable managerial activity. One view of a manager’s job is to eliminate, or at least, to manage misfits for the organization. A misfit is a normative statement about what should be, or more precisely what should not be.

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Press.
APPENDIX 1: SITUATION MISFITS

This appendix contains a statement of situation misfits. It does NOT contain statements on contingency misfits. The misfits here follow from table 9.11 in Burton and Obel, 1998. See also figure 1. The construction of the variables used in our analysis is described as well.

Climate-Technology
Internal process climate is a misfit with a non-routine technology
Developmental climate is a misfit with a routine technology

Climate-Strategy
Internal process climate is a misfit with an analyzer with innovation strategy
Internal process climate is a misfit with a prospector strategy
Group climate is a misfit with a prospector strategy
Developmental climate is a misfit with a defender strategy

Climate-Management Style
Group climate is a misfit with a management style with high microinvolvement.
Internal process climate is a misfit with a management style with low microinvolvement.
Rational goal climate is a misfit with a management style with low microinvolvement.
Developmental climate is a misfit with a management style with high microinvolvement

Climate-Environment
Group climate is a misfit with a high equivocality environment
Internal process climate is a misfit with a high equivocality environment
Developmental climate is a misfit with a low equivocality environment.
Developmental climate is a misfit with a low uncertainty environment.

Technology-Strategy
Routine technology is a misfit with a prospector strategy
Non-routine Technology is a misfit with a defender strategy.
Technology-Management style
Non-routine technology is a misfit with a management style with high microinvolvement.

Technology-Environment
Routine technology is a misfit with a high equivocality environment.
Non-routine technology is a misfit with a low equivocality environment.

Environment-Strategy
High equivocality environment is a misfit with an analyzer strategy.
Low equivocality environment is a misfit with an analyzer with innovation strategy.
Low equivocality environment is a misfit with a prospector strategy.
Low uncertainty environment is a misfit with a prospector strategy.
High equivocality environment is a misfit with a defender strategy.

To analyze the impact of situational misfit on the performance, we constructed 10 indicator variables in two steps:

Step 1.
TECHNOLOGY_ CLIMATE: -1 if the firm has any technology-climate misfit; 0 otherwise.
STRATEGY_ CLIMATE: -1 if the firm has any strategy-climate misfit; 0 otherwise.
MANAGEMENT_ CLIMATE: -1 if the firm has any management-climate misfit; 0 otherwise.
ENVIRONMENT_ CLIMATE: -1 if the firm has any environment-climate misfit; 0 otherwise.
STRATEGY _ ENVIRONMENT: -1 if the firm has any strategy - environment misfit; 0 otherwise.
STRATEGY _ TECHNOLOGY: -1 if the firm has any strategy -technology misfit; 0 otherwise.
MANAGEMENT _ ENVIRONMENT: -1 if the firm has any management - environment misfit; 0 otherwise.
MANAGEMENT _ SIZE: -1 if the firm has any management -size misfit; 0 otherwise.
MANAGEMENT _ TECHNOLOGY: -1 if the firm has any management - technology misfit; 0 otherwise.
TECHNOLOGY _ENVIRONMENT: -1 if the firm has any technology- environment misfit; 0 otherwise.
The list of situational misfits used in this study is given in Burton and Obel(1998) Table 9.11 pp. 309-312.

Step 2.
If the firm does not have any situational misfits - i.e., TECHNOLOGY_CLIMATE = STRATEGY_CLIMATE = MANAGEMENT_CLIMATE = ENVIRONMENT_CLIMATE = STRATEGY_ENVIRONMENT = STRATEGY_TECHNOLOGY = MANAGEMENT_ENVIRONMENT = MANAGEMENT_SIZE = MANAGEMENT_TECHNOLOGY = TECHNOLOGY_ENVIRONMENT = 0, then TECHNOLOGY_CLIMATE, STRATEGY_CLIMATE, MANAGEMENT_CLIMATE, ENVIRONMENT_CLIMATE, STRATEGY_ENVIRONMENT = STRATEGY_TECHNOLOGY, MANAGEMENT_ENVIRONMENT, MANAGEMENT_SIZE, MANAGEMENT_TECHNOLOGY AND TECHNOLOGY_ENVIRONMENT are all recorded as 1.

This recoding results in three categories –1, 0, and 1 for each of the variables. If a variable has the value 1, then the firm does not have any situational misfit at all. If the value is 0 the firm does not have a misfit related to the particular variable, but does have at least one misfit in one of the other variables. If the value is –1 then there is a misfit related to the particular variable and there may be a misfit in other variables as well. We use the companies with the value 1 as our benchmark.
APPENDIX 2: CONTINGENCY MISFITS

This appendix contains a statement of contingency misfits. It does NOT contain statements on situational misfits. The organization of the misfits here follows from the corresponding chapter in Burton and Obel, 1998. See also figure 1. The construction of the variables used in our analysis is described as well.

LEADERSHIP MISFITS
High level of microinvolvement is a misfit with:
Low formalization,
High decentralization,
Divisional configuration,
Matrix configuration.
Low level of microinvolvement is a misfit with:
High formalization,
Low decentralization,
Simple configuration,
Functional configuration.

CLIMATE MISFIT
Group climate is a misfit with:
Functional configuration,
High complexity,
High centralization,
High formalization,
Developmental climate is a misfit with:
Machine bureau,
Functional configuration,
High complexity,
High centralization,
High formalization,
Internal process climate is a misfit with:
Simple configuration,
Matrix configuration,
Low complexity,  
Low formalization,  
Rational goal climate is a misfit with:  
High formalization,  

SIZE MISFITS  
A large sized organization is a misfit with:  
Simple configuration,  
Low complexity,  
Low decentralization,  
Low formalization.  
A small sized organization is a misfit with:  
High complexity,  
High formalization.  

ENVIRONMENT MISFITS  
Complement to Tables 6.1 and 6.3 in Burton and Obel (1998)  

<table>
<thead>
<tr>
<th>Equivocality</th>
<th>Complexity</th>
<th>Uncertainty</th>
</tr>
</thead>
<tbody>
<tr>
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<td>low</td>
<td>low</td>
</tr>
</tbody>
</table>

Is a misfit with:  
Matrix configuration,  
Low formalization,  

| Low | high | low  |

Is a misfit with:  
Matrix configuration,  
Low formalization,  
Low complexity,
<table>
<thead>
<tr>
<th>Low</th>
<th>high</th>
<th>high</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is a misfit with:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simple configuration,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low complexity,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High centralization.</td>
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</tr>
<tr>
<td>High</td>
<td>low</td>
<td>low</td>
</tr>
<tr>
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<tr>
<td>Functional configuration,</td>
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<tr>
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<tr>
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<td>high</td>
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<tr>
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<tr>
<td>High formalization,</td>
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<tr>
<td>High centralization,</td>
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<td></td>
</tr>
<tr>
<td>High</td>
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<td>high</td>
</tr>
<tr>
<td>Is a misfit with:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machine bureaucracy,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functional configuration,</td>
<td></td>
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</tr>
<tr>
<td>High formalization,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High centralization,</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TECHNOLOGY MISFITS
A high routineness is a misfit with:
Matrix configuration,
Low formalization,
Low complexity.
A low routineness is a misfit with:
Functional configuration,
High formalization,
High complexity,
High centralization.
A high divisibility is a misfit with:
Matrix configuration,
A low divisibility
is a misfit with:
Divisional configuration.
STRATEGY MISFITS
A prospector strategy is a misfit with:
Functional configuration,
High formalization,
High complexity,
High centralization.
An analyzer without innovation is a misfit with:
Low formalization,
Low complexity,
Low centralization.
An analyzer with innovation is a misfit with:
Low complexity.
A defender strategy is a misfit with:
Matrix configuration,
Low formalization,
Low complexity,
Low centralization.
To analyze the impact of contingency misfit on the PERFORMANCE, we constructed 4 indicator variables in two steps:

Step 1.
CONFFIT: -1 if the firm has any configuration misfit; 0 otherwise.
FORMFIT: -1 if the firm has any formalization misfit; 0 otherwise.
CENTFIT: -1 if the firm has any centralization misfit; 0 otherwise.
COMPFIT: -1 if the firm has any complexity misfit; 0 otherwise.
The list of contingency misfits used in this study is given in Appendix 1.

Step 2.
If the firm does not have any configuration misfits - i.e.,
CONFFIT=FORMFIT=CENTFIT=COMPFIT=0,
then CONFFIT, FORMFIT, CENTFIT, and COMPFIT are recoded as 1.
This re-coding results in three categories –1,0, and 1 for each of the variables. If a variable has
the value 1, then the firm does not have any contingency misfit at all. If the value is 0 the firm
does not have a misfit related to the particular variable, but does have at least one misfit in one of
the other variables. If the value is –1 then there is a misfit related to the particular variable and
there may be a misfit in other variables as well. We use the companies with the value 1 as our
benchmark.