“Co-ordination Mechanisms and Intensity of Integration Matter for the Duration and Success of Mergers. Hypotheses and Empirical Evidence from 50 International Transactions”

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Co-ordination Mechanisms and Intensity of Integration Matter for the Duration and Success of Mergers

Hypotheses and Empirical Evidence from 50 International Transactions

Hagen Lindstädt[1]

Abstract

Failed mergers are often attributed to "corporate culture problems" – this statement is now almost regarded as commonplace. However, because these difficulties can rarely be differentiated between, this reference is unsatisfactory and in the worst case could even be used as an excuse. This contribution clarifies and summarises the discussion by dividing mergers into four ideal-types according to the intensity of integration and the primary co-ordination mechanisms of the organisations involved. On the basis of analyses of press reports statistically significant statements can be made regarding the duration and success rate of integration: (a) the medium integration duration in "loose" mergers is shorter than in a complete integration, (b) if the partners primarily co-ordinate on a personal level, the likelihood of success is higher than when at least one of the partners co-ordinates on a non-personal level, and (c) the integration duration is shorter. Complete integration when at least one of the partners primarily co-ordinates on a non-personal level has proved to be particularly problematic in terms of duration and success. This could mean a fundamental clarification of the "Culture Problem Thesis": What are considered to be culture problems in a close merger, could, on closer inspection and for the most part, be linked to the poor compatibility of the primary co-ordination mechanisms which the partner used before the merger.

Key words: Mergers and Acquisitions, Post Merger Integration, Co-ordination Mechanisms.

1. Introduction

For some time now, mergers have been a significant topic. The fifth wave of such mergers in the last century is currently nearing its end and the sixth wave is imminent (Müller-Stewens, 2002). The success of mergers and the duration of the integration process are dependent on the extent to which the partners succeed in relating to each other and to a company.

The influence of internal factors in mergers has also been recognised. The implications of "soft" internal factors, such as the corporate culture, are well known – in fact, they are now almost commonplace.

Having said that, the discussion suffers from the fact that the difficulties encountered in most cases cannot be more accurately perceived. If problems occur during the integration process, this, almost automatically, is attributed to cultural problems between the partners. It is even suspected that managers attempt to absolve themselves of blame in the case of failure by referring to cultural problems to receive general absolution, if the merger, in their opinion "would actually have been an economically sound idea". The corporate culture is often apparently often overestimated as being a more problematic element than it actually is (Jansen, 2001) and is mixed with "hard" aspects of the internal organisation. The predominant type of co-ordination between the parties involved in the organisation of their daily business which corresponds closely to its culture but is not identical with it, is of particular relevance. Furthermore, it does not appear as though the aim is a complete merger in all cases. A strong or weak intensity of integration could make sense, depending on the situation and motives for the merger.

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This contribution addresses the issue of to what extent the duration and success of integration are influenced by the conditions of the merger. Here, two conditions are the focal point of interest. First, the primary type of co-ordination mechanism in the organisations involved in the merger. Here, an ideal-type distinction is made between organisations with primarily personal and those with primarily non-personal co-ordination. Second, a classification of two integration types, "loose co-operation" and "complete integration" is introduced. Four ideal-types of mergers have been based on these two conditions.

An empirical study of 50 large, international mergers was carried out, on the basis of an evaluation of the international daily press, to address this issue. Each merger was assigned to one of the four types from the clearly defined criteria, based upon the evaluation of over 5,500 passages. Furthermore, based on the evaluation of the press, a high or low rate of integration success and a short or long integration duration were assigned to each merger by strong simplifying individual results.

Three hypotheses were formulated on the connection between types of mergers, integration duration and success of integration:

- The integration duration is shorter in a loose merger than in a complete integration.
- The integration duration is shorter in mergers where both partners co-ordinate primarily on a personal level than if at least one partner mainly co-ordinates on a non-personal level.
- If both partners primarily co-ordinate on a personal level, the likelihood of success of integration is higher than if at least one partner mainly co-ordinates on a non-personal level.

The relation formulated in these hypotheses can be statistically proven and detailed further in the study.

2. A Typification of Corporate Mergers

2.1. Intensity of Integration

Post merger integration can occur in varying intensity. This can be expressed to such a degree that after the integration process, both partners become homogenous and indistinguishable from each other. This is dependent on three criteria: first, to what extent the departmental and hierarchical structures are integrated, second, the standardisation of the method of co-ordination and generally applied regulations and third, the degree to which the corporate cultures blend with each other. For the empirical study in this contribution, only mergers with a high or low degree of integration (loose co-operation/complete integration) are differentiated between (Lindstädt, 2003).

In a loose co-operation, most of the departments remain autonomous ("joining of departments") and cost cutting, by reducing personnel, is primarily implemented at the head office. A standardisation of hierarchical structures (single vs. multi-line system), general regulations and methods of co-ordination are only carried out to a certain extent; especially in mergers of large corporations, an internal market/price system is often used. In the integration of a loose co-operation, the original cultures of the partners involved remain long-term and can still be distinguished from each other[1].

Conversely, in a complete integration, the existing departments are largely integrated and joined to form a new organisational structure ("re-organisation of the departments"). Hierarchical structures, general regulations and methods of co-ordination are, to a great extent, standardised. In an ideal case, a common culture based upon both corporations is achieved, in that one culture is absorbed by the other, or in that a new culture evolves as a symbiosis of both original cultures (Figure 1)[2].

[1] See Hase (1996, p. 105f), for re-organisation and joining of departments.
[2] For intensity of integration see Jansen (2002), and Werner (1999) for an alternative operationalisation.

Criteria	TYPE OF INTEGRATION	
	A: loose co-operation	B: complete integration
Departmental and Hierarchical Structures	-mainly joining departments -central departments are mainly merged -minimal unification of hierarchical structures	-mainly re-organisation of departments -extensive unification of hierarchical structures
Co-ordination and Regulations	-no standardisation of regulations or methods of co-ordination -internal market/price system plays an important role	-strong standardisation of regulations and methods of co-ordination
Corporate Culture	-the original cultures are largely maintained	-symbiosis or absorption of original cultures

Fig.1. Characterisation of Types of Integration

2.2. Primary Co-ordination Mechanisms of the Partners

Corporations must continuously agree upon the interdependencies of all types of procedures, requirements and resources, i.e. they must co-ordinate with each other. In this fundamental organisational activity they rely on two types of mechanism: they co-ordinate in person, with direct supervision (hierarchy) and mutual adjustment, and by means of non-personal co-ordination via more or less universally applicable regulations, plans and programmes.

In fact, corporations always apply a combination of personal and non-personal mechanisms – but in most cases the focus is on one of them (Mintzberg, 1979). We generally differentiate corporations which co-ordinate mainly on a personal level from those which co-ordinate mainly on a non-personal level. From the three possible combinations of primary co-ordination mechanisms in corporate mergers, only two types are distinguished between:

- *Type I (personal/personal):* Corporate mergers in which both parties primarily co-ordinate on a personal level.
- *Type II (personal/non-personal; non-personal/non-personal):* Corporate mergers in which at least one party co-ordinates primarily on a non-personal level.

Through the combination of the intensity of integration and primary co-ordination mechanisms, there are four ideal-types of corporate mergers which should be studied in terms of integration duration and success of integration. They are as follows:

- *Type AI:* A merger between two partners, in which they primarily co-ordinate on a personal level to form a loose co-operation.
- *Type AII:* A merger forming a loose co-operation, in which at least one partner primarily co-ordinates on a non-personal level.
- *Type BI:* A complete integration of two corporations, in which both parties primarily co-ordinate on a personal level.
- *Type BII:* A complete integration, in which at least one of the corporations involved primarily co-ordinate on a non-personal level.

3. Formulation of the Hypotheses

Three generic hypotheses have been formed into groups to distinguish between integration duration and success. The first two are concerned with the duration and the third with the likelihood of success.

Hypothesis 1 – Relation between Integration Duration and Intensity:

Firstly, one should expect that a complete integration of two partners will be more time consuming than a merger forming a loose co-operation: the demands on structural standardisation are fewer in a loose co-operation and, in particular, quicker to join departments than it is to re-organise them.

Hypothesis 2 – Relation between Integration Duration and Type of Co-ordination:

General adaption and unification of plans, regulations and programmes are much more time consuming than an integration in which personal co-ordination is used on a case to case basis. If at least one of the partners primarily co-ordinate on a non-personal level, it can be assumed that the integration duration will be longer than if both corporations co-ordinate mainly on a personal level.

Hypothesis 3 – Relation between Integration Success and Type of Co-ordination:

A relation between integration success and co-ordination is apparent: the adaptation of the non-personal mechanism is not only time consuming, it is often also difficult to carry out. Apart from this, a relationship between the primary co-ordination mechanism and the corporate identity seems to be expected. The risk of incompatibility between the two corporate cultures can be regarded as higher when at least one of the partners co-ordinates on a non-personal level.

Outside hypothesis 3, a relationship between the (not yet accurately defined) integration success and the type of integration, does not a priori seem to be clear. All three hypotheses should firstly be tested in the complete sample and then within the two complementary groups. This results in a total of 9 detailed hypotheses.

4. Realisation of the Study

The empirical study was carried out on the basis of the 50 largest mergers (in terms of assets) to take place in North America and Asia between 1995 and 2001. The assets of these corporations amounted to between USD 5 and USD 165 bn. and incorporated 11 industry sectors. Telecommunications and financial services accounted for most of the mergers, with 30% each. The study was based on the systematic evaluation of articles from the daily press and newspapers.

As the result of a search on two on-line databases (EBSCO, ~1,100 titles; PROQUEST, ~350 titles) and 23 individual newspaper databases, between 200 and 800 articles were chosen for each merger. A distinction based on four different categories, “primary co-ordination type of the partner”, “type of integration”, “success of integration” and “integration duration” was formed on the basis of 5,564 passages (each 69 to 337 per merger) (Table 1).

The primary co-ordination mechanisms of the partners were defined with the help of the three indicators shown in Figure 2, each one taking two or three forms respectively (Figure 2). The numbers of text references (passages) in favour of each of the respective specifications was registered and counted. The classification of a partner into either “personal” or “non-personal” was based on the following method:

- In order for an indicator to be included in the evaluation, at least three relevant passages must be found for the corporation concerned.
- An indication is only assumed if the number of passages for this indicator exceeds the opposing indication by at least one factor out of 2 or more.
- The simple majority of the indicators determine the classification. An analogue approach with the same method was chosen for the type of integration.

The three criteria in Figure 2 served as indicators, which took on two forms corresponding to the ideal-types.

The success of the merger in the market is not a deciding factor in the operational implementation of the success of integration. Moreover, the criterion is the comparison between the resource transfer aimed for and the actual resource transfer between the partners, which are indicated, for example, by synergies from merging production plants and the corporate head office. As the planned resource transfer in complete integration is fundamentally larger than in a loose co-operation, the extent of the transfer cannot be regarded. Instead, the fulfilment degree compared to the partner’s intentions is used. When the planned resource transfer should not be realised, the integration is not considered to be successful. A deciding factor for the classification into the high or low success category is the majority of passages relevant to each category.

Table 1

List and Classification of Transactions

	Partner 1	Partner 2	Coord.	Int.-Type	Success	Duration
1	AOL	Time Warner	only pers.	loose	low	long
2	Pfizer	Warner Lambert	only pers.	compl.	high	short
3	Exxon	Mobil	incl. non-p.	compl.	high	long
4	Travelers	Citicorp	incl. non-p.	loose	high	short
5	SBC Communications	Ameritech	incl. non-p.	compl.	low	long
6	NationsBank	BankAmerica	incl. non-p.	compl.	low	long
7	AT&T	MediaOne	incl. non-p.	loose	low	long
8	AT&T	TCI	incl. non-p.	loose	low	Long
9	Bell Atlantic	GTE	only pers.	compl.	high	short
1	Quest	US West	incl. non-p.	loose	low	long
1	JDS Uniphase	SDL	only pers.	compl.	high	short
12	Viacom	CBS	only pers.	loose	high	short
13	MCI	WorldCom	only pers.	compl.	high	short
14	Chevron	Texaco	incl. non-p.	compl.	low	long
15	Norwest	Wells Fargo	only pers.	compl.	high	long
16	Mitsubishi Bank	Bank of Tokyo	incl. non-p.	compl.	low	long
17	Chase Manhattan	J.P.Morgan	only pers.	loose	low	short
18	Bell Atlantic	Nynex	only pers.	compl.	high	short
19	Banc One	First Chicago	only pers.	compl.	low	long
20	SBC Communications	Pacific Telesis Group	incl. non-p.	compl.	high	short
21	Berkshire Hathaway	General Re	incl. non-p.	loose	high	short
22	Clear Channel	AMFM	only pers.	compl.	low	long
23	Lucent	Ascend	only pers.	compl.	low	long
24	USA Waste Services	Waste Management	incl. non-p.	compl.	low	long
25	Walt Disney	Capital Cities/ABC	incl. non-p.	loose	low	short
26	American Int. Group	SunAmerica	only pers.	loose	high	short
27	First Union Corpora-	CoreStatesFinancial	only pers.	compl.	low	long
28	Fleet Financial Group	BankBoston	only pers.	compl.	high	short
29	Boeing	McDonnell Douglas	incl. non-p.	compl.	low	long
30	Honeywell	AlliedSignal	only pers.	compl.	high	short
31	WorldCom	MFS Communications	only pers.	compl.	high	short
32	NationsBank	Barnett Banks	only pers.	compl.	high	short
33	Washington Mutual	HF Ahmanson	only pers.	compl.	high	long
34	McKesson Corp.	HBO & Co	only pers.	loose	low	short
35	Starwood Lodging	ITT	incl. non-p.	compl.	low	long
36	Kroger	Fred Meyer	only pers.	loose	high	short
37	CUC International	HFS	only pers.	loose	low	long
38	American Electric	Centr. & South West	only pers.	compl.	high	long
39	Wells Fargo	1st Interstate Bank-	only pers.	compl.	low	long
40	Morgan Stanley	Dean Witter	only pers.	loose	high	long
41	Chemical Banking	Chase Manhattan	only pers.	compl.	high	short
42	Global Crossing	Frontier Corp	only pers.	loose	high	short
43	US West Media	Continental Cablevi-	only pers.	compl.	low	short
44	Compaq	Digital Equipment	incl. non-p.	compl.	low	long
45	Nortel	Bay Networks Inc.	incl. non-p.	loose	high	short
46	Lockheed Martin	Loral	incl. non-p.	compl.	high	long
47	Gillette	Duracell	only pers.	loose	high	short
48	Teleglobe Inc.	Excel Communica-	only pers.	loose	high	short
49	Seagram Co. Ltd.	MCA/Universal	incl. non-p.	loose	low	long
50	Tyco International Ltd.	ADT Ltd.	incl. non-p.	loose	high	short

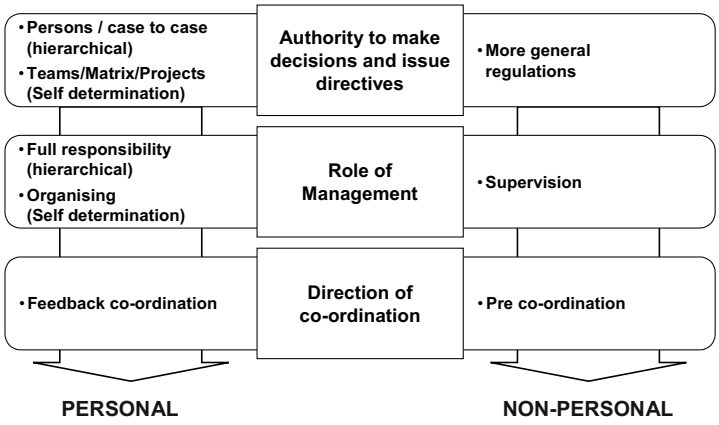

Fig. 2. Definition of primary co-ordination mechanisms. Indicators

Logically, the integration duration corresponds to the duration of resource transfers from the beginning of the merger – not from its announcement. The direct measurement of the duration, on the basis of press articles, presents certain difficulties as an explicit announcement is not made. This is why an approximate value is measured for the duration of the report on the integration process from the time of the merger. On the basis of the plausible hypothesis that the actual integration duration and the length of the report are linked in a positive way, at least the relative duration within the random sample can be determined. It shows that half of the reports of the random samples takes up to a year, while the other half takes more than a year. The relative distinction necessary for the evaluation of these hypotheses in short or long integration duration is carried out according to whether or not the report on the integration mostly takes less or more than a year to appear in the press.

5. Results of the Empirical Study

5.1. Results Concerning the Integration Duration

As a result of the data evaluation, the 50 mergers studied can be allocated to the four ideal-types and the estimation of whether or not the integration duration mentioned in the previous paragraph can be classified as long or short. Figure 3 illustrates the corresponding shares within the groups. The number of mergers is shown in the bottom left hand corner of each square.

The hypotheses are examined by testing whether the shares of long and short integration duration significantly deviate between the groups as suspected in the hypotheses.

The optimal test for this problem is the exact test from Fisher to compare likelihood of success p between two binomial distributions (see Witting, 1985, p. 379). As levels of significance, 10% (limited significance), 5% (significance) and 1% (high significance) were chosen. $p^D{}_G$ indicates the probability of a long duration in group G; according to the type of merger, the groups involved can be A, B, I, II, AI, AII, BI and BII. Because all hypotheses contain an assumption regarding the direction of the interrelation, testing is always one-sided. Table 2 contains the data and p values for hypotheses 1 and 2.

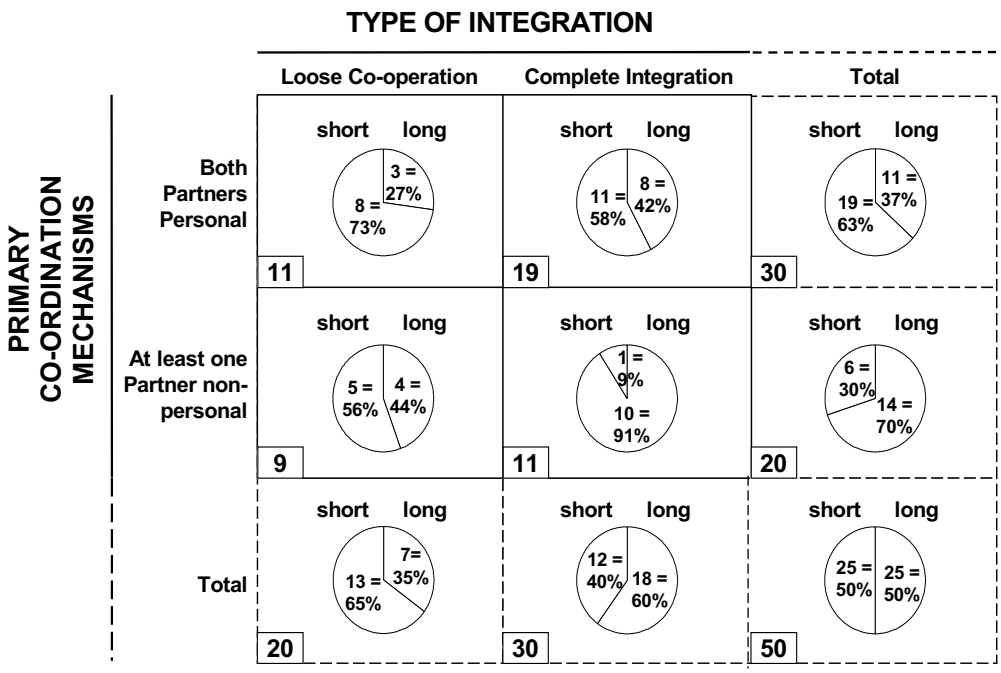

Fig. 3. Shares of Long and Short Integration Duration

Table 2

Test Results for Hypotheses 1 and 2 for Integration Duration

Hyp.	Test groups		Null hyp.	Alternative	p-Value	Result
1a	A	B	$p^D_B \le p^D_A$	$p^D_B > p^D_A$	0,074	limited significance
1b	AI	BI	$p^D_{BI} \le p^D_{AI}$	$p^D_{BI} > p^D_{AI}$	0,341	not significant
1c	AII	BII	$p^D_{BII} \le p^D_{AII}$	$p^D_{BII} > p^D_{AII}$	0,038	significant
2a	I	II	$p^D_{II} \le p^D_I$	$p^D_{II} > p^D_I$	0,021	significant
2b	AI	AII	$p^D_{AII} \le p^D_{AI}$	$p^D_{AII} > p^D_{AI}$	0,370	not significant
2c	BI	BII	$p^D_{BII} \le p^D_{BI}$	$p^D_{BII} > p^D_{BI}$	0,010	significant
*	BII	Rest	$p^D_{BII} \le p^D_{Rest}$	$p^D_{BII} > p^D_{Rest}$	0,002	high significance

Regarding hypothesis 1: In the complete sample, the null hypothesis could be dismissed with a level of significance of 10%: the data observed has a probability of (at the most) 0.074 according to the null hypothesis. The hypothesis that complete integration as a whole requires more time than the integration to form a loose co-operation can thus be seen as being (limitedly) proven by the data. The closer analysis within the groups of primary co-ordination mechanisms illustrates a more detailed picture: in mergers of two corporations, when both primarily co-ordinate on a personal level, there is not even a slight indication of a significant relation. However, if at least one of the corporations primarily co-ordinates on a non-personal level there is a significantly longer integration duration (p value 0.038) for the complete integration than for loose co-operation. This reflects an obvious practical relation: this concurrence of non-personal co-ordination and complete integration appears to be critical for the integration duration – it demands the particularly lengthy standardisation of general regulations.

Regarding hypothesis 2: For hypothesis 2 there is an almost analogue but clearer picture. In the complete sample, the null hypothesis that the integration duration was not shorter, can be

dismissed if both partners co-ordinate on a personal level (*p* value 0.021). Within the integration types, there is no significant difference in the integration to form a loose co-operation, while the relation in a complete integration is significant (*p* value 0.010). If the integration duration of type BII is tested against the rest, there is a highly significant relation (*p* value 0.002): Since a complete integration and a non-personal co-ordination of at least one partner concur, the duration of the integration process is longer with a high statistical significance.

5.2. Results Concerning the Success of Integratin

Figure 4 illustrates the data evaluation for the success of integration. Hypothesis 3 and its details are tested by using the same test procedure as for hypothesis 1 and 2. pEG illustrates the likelihood of success in the groups in an analogue manner.

Regarding hypothesis 3: Hypothesis 3 is also significantly proven by the data in the complete sample. The null hypothesis, that the likelihood of success in mergers of two partners who primarily co-ordinate on a personal level is not larger than if at least one primarily co-ordinates on a non-personal level, can be dismissed (*p* value 0.046). When analysing sub-groups, there is again a significant relation in favour of the hypothesis (i.e., dismissal of the null hypothesis) in a complete integration (*p* value 0.035) but not in the case of a loose co-operation (Table 3).

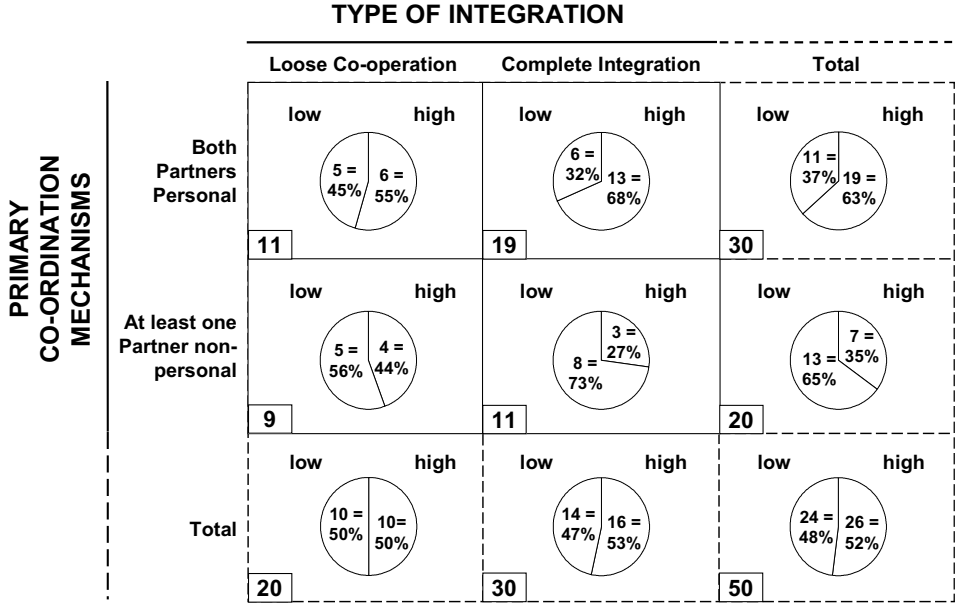

Fig. 4. Share of Integration with High and Low Success Rate

Table 3

Test Results for Hypothesis 3 regarding Success of Integration

Hyp.	Test groups		Null hyp.	Alternative	p-Value	Result
3a	I	II	$p^E_{I} \leq p^E_{II}$	$p^E_{I} > p^E_{II}$	0,046	significant
3b	AI	AII	$p^E_{AI} \leq p^E_{AII}$	$p^E_{AI} > p^E_{AII}$	0,500	not significant
3c	BI	BII	$p^E_{BI} \leq p^E_{BII}$	$p^E_{BI} > p^E_{BII}$	0,035	significant

6. Conclusion and Final Remarks

This study illustrates that internal difficulties in corporate mergers (seemingly also those which the managers involved attribute to incompatible corporate cultures) frequently occur in particular if at least one of the partners co-ordinates on a non-personal level, i.e. through regulations, plans and programmes. Such differences were reflected and statistically significant in the sample both in terms of the success of the merger and the integration duration. In the sample, the difficulties increased when a complete integration occurred along with at least one partner primarily co-ordinating on a non-personal level. Although the data does not indicate increased difficulties in a complete integration per se, its combination with non-personal co-ordination through regulations, plans and programmes is obviously problematic – at least in the sample.

Whether these conclusions are confirmed by further studies remains to be seen. Should this be the case, there will be far-reaching consequences not only for the selection of potential candidates for take-over but also for the management of the "post merger integration". Apart from the so-called "cultural due diligence", which nowadays is often demanded in addition to "financial due diligence", an "organisational due diligence" should also be considered. This should, in particular, deal with "hard internal factors" such as the partners' co-ordination mechanisms. Given the fact that the realisation of numerous synergies in mergers and thus their potential is dependent on the co-operation of the newly formed corporation, this is not surprising and should be seen as a matter of course in contrast to common practice.

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