

## ■ Research Article

# The Use of Knowledge Transfer Mechanisms in Franchising

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In this paper, we try to explain the use of knowledge transfer mechanisms in franchising firms by applying the knowledge-based view of the firm that integrates results from the information richness theory. Starting from the information richness theory we argue that the degree of tacitness of system-specific knowledge determines the information richness of the knowledge transfer mechanisms of franchising firms. We examine the following hypotheses: (1) the franchisor uses more knowledge transfer mechanisms with a lower degree of information richness (such as email, intra- and internet), if the tacitness of system-specific knowledge is low, and (2) the franchisor uses more knowledge transfer mechanisms with a higher degree of information richness (such as training, seminar, meetings, visits), if the tacitness of system-specific knowledge is high. We test these hypotheses by using data from 83 franchising firms in the Austrian franchise sector. The data provide partial support for the hypotheses. Copyright © 2010 John Wiley & Sons, Ltd.

## INTRODUCTION

The success of networks, such as franchising networks, strategic alliances, joint ventures and clusters, is highly dependent on the capability to create and transfer knowledge within the network (e.g., Albino *et al.*, 1999; Hult *et al.*, 2004; Maskell and Malmberg, 1999; Mohr *et al.*, 1994, 1999; Mu *et al.*, 2008). Franchising networks require the transfer of system-specific knowledge to franchisees to create a network of successful franchised outlets. Higher efficiency of the network partners results in a higher residual surplus for the whole system. Thus, a successful replication of the business concept by the franchisees and managers of the local outlets is a key to realize competitive advantage (Argote and Ingram, 2000; Winter, 1987). This requires an efficient governance of the knowledge transfer from the franchisor to the franchisees. The franchisor can use a variety of transfer mechanisms: Training, conference meetings, outlet visits, telephone, fax, intra- and internet and other electronic transfer mechanisms.

The paper addresses the issue of the choice of knowledge transfer mechanisms in franchising networks. We develop a knowledge-based approach that integrates results from information richness theory. We argue that the information richness

theory offers a criterion (“information richness”) to differentiate knowledge transfer mechanisms according to their information processing (knowledge transfer) capacity (Daft and Lengel, 1986; Dennis and Kinney, 1998; Russ *et al.*, 1990; Sheer and Chen, 2004). In franchising, knowledge transfer mechanisms with a relatively high degree of information richness are training, conferences, meetings the telephone, visits of the outlets; and knowledge transfer mechanisms with a relatively low degree of information richness are fax, intra- and internet and other electronic transfer mechanisms. According to the knowledge-based view (e.g., Connor and Prahalad, 1996; Håkanson, 2005; Kogut and Zander, 1993; Nonaka *et al.*, 1996) tacitness of knowledge determines the information richness of the knowledge transfer mechanisms. The thesis of our paper is: The higher tacitness of the franchisor’s system-specific knowledge, the more knowledge transfer mechanisms with a higher degree of IR should be used to facilitate an efficient knowledge transfer from franchisor to franchisees.

The paper is organized as follows: “Literature Review” section reviews the relevant literature related to knowledge transfer in networks. In “Theory Development” section we present a knowledge-based view on the use knowledge transfer mechanisms in franchising and derive testable hypotheses. Finally, we test the hypotheses that the choice of knowledge transfer mechanisms in franchising depends on the degree of tacitness of knowledge using data from the Austrian franchise sector.

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## LITERATURE REVIEW

Research on information and knowledge transfer in organization started with the information richness theory in the 1980s (Daft and Lengel, 1984, 1986; Daft and Macintosh, 1981; Daft *et al.*, 1987; Russ *et al.*, 1990; Sheer and Chen, 2004; Trevino *et al.*, 1987). According to this view, effective communication requires a fit between task ambiguity/equivocality and “richness” of the communication media. Recent studies extend this view to new electronic communication media (Buchel and Raub, 2001; Lim and Benbasat, 2000; Sexton *et al.*, 2003; Vickery *et al.*, 2004). However, information richness theory cannot explain the knowledge transfer, because it does not relate the concept of information richness to the characteristics of knowledge.

Since the 1990s many researchers in the field of the knowledge-based view of the firm have examined the problem of internal and inter-organizational knowledge transfer (Albino *et al.*, 1999; Argote, 1999; Argote *et al.*, 2003; Ancori *et al.*, 2000; Baum and Ingram, 1998; Bresman *et al.*, 1999; Gertler, 2003; Haas and Hansen, 2007; Jensen and Szulanski, 2007; Moffat and Archer, 2004; Mowery *et al.*, 1996; Nonaka, 1994; Nonaka *et al.*, 2003; Simonin, 1999a,b; Szulanski, 1995, 2000; Szulanski and Jensen, 2006; Zander and Kogut, 1995). Starting from Polanyi’s knowledge concept (Polanyi, 1962), they investigated knowledge transfer in organizations and networks. According to the knowledge-based view of the firm, tacitness positively varies with the difficulty of knowledge transfer. On the other hand, most of this literature does not investigate the relationship between knowledge characteristics and knowledge transfer mechanisms. Inkpen and Dinur (Inkpen, 1996; Inkpen and Dinur, 1998) are an exemption. They go further by analyzing the relationship between knowledge characteristics and knowledge transfer mechanisms in international joint ventures. However, they do not develop a more general approach that explains the relationship between knowledge types and knowledge transfer mechanisms in networks.

In marketing, Mohr and Nevin (Mohr and Nevin, 1990; Mohr and Sohi, 1995; Mohr *et al.*, 1994, 1996, 1999) develop and test a contingency approach of communication strategy in marketing channels based on organization and communication theory. According to this view, communication strategy—consisting of frequency of contact, modality or medium of communication, directionality of communication flow and content of influence strategies—has to match the channel conditions (channel structure, climate and power). Peters and Fletcher (2004) and Cai *et al.* (2006) extend this approach to intra-organizational communication and internet communication. Compared to the information richness theory and to our approach,

Mohr and Nevin’s concept of communication strategy refers not only to the medium of communication but also to other facets of communication, such as frequency, direction and content. Furthermore, Mohr and Nevin do not include the knowledge characteristics as contingency factor in the channel conditions that influence the choice of communication strategy.

Although franchising has been treated extensively in organization economics, management and marketing in the last decade, the problem of knowledge transfer between the franchisor and franchisees remains largely unexplored (Darr *et al.*, 1995; Paswan and Wittmann, 2003; Paswan *et al.*, 2004). Darr *et al.* (1995) examine the transfer of knowledge between franchisee-owned outlets by using reports, phone calls, personal acquaintances and meetings as transfer mechanisms. The study shows that knowledge is primarily transferred across stores owned by the same franchisee but not across stores owned by different franchisees because the frequencies of phone calls, personal acquaintances and meetings are significantly higher in the case of stores owned by the same franchisee compared to stores owned by different franchisees. Furthermore, Paswan and Wittmann (2003) argue that franchising firms as network organizations characterized by dense social contacts have the potential to benefit greatly from knowledge created by its distributed network members. This is compatible with Kogut and Zander’s view (Zander and Kogut, 1995) who point out that social relations among the network partners may support the transfer of tacit knowledge. However, Paswan *et al.* do not investigate the problem of the choice of knowledge transfer mechanisms in the network.

In sum, the existing studies have the following theoretical and empirical deficits: Firstly, they do not offer a theoretical framework for the explanation of the knowledge transfer mechanisms in networks. Secondly, they do not develop and test hypotheses about knowledge transfer mechanisms in franchising networks. Starting from this gap, the objective of our paper is to develop a knowledge-based approach on the choice of knowledge transfer mechanisms that integrates results from the information richness theory. Our main contribution to the literature is to combine the knowledge-based view with the information richness theory to explain knowledge transfer mechanisms in franchising networks. Furthermore, our study utilizes primary data from Austrian franchise systems that enables us to estimate the factors which the theory considers important to affect the choice of knowledge transfer mechanisms. We present the first empirical evidence that the information richness of knowledge transfer mechanisms in franchising is positively related with the tacitness of system-specific knowledge.

## THEORY DEVELOPMENT

### Information richness theory

Since our knowledge-based approach uses the concept of information richness to operationalize the knowledge transfer capacity, first we discuss the main proposition of the information richness theory. The information richness (IR) concept was developed by Lengel and Daft (Daft and Lengel, 1984, 1986; Lengel and Daft, 1988). IR-theory examines the question, which communication (knowledge transfer) mechanisms are effective under different degrees of ambiguity (or equivocality) of the communication task (Daft *et al.*, 1987). An effective knowledge transfer requires a fit between IR of the communication mechanism and the information processing requirements of the task (Sheer and Chen, 2004). The information processing requirements directly vary with task ambiguity. "Richness" consists of four attributes of the communication mechanism: feedback capability, availability of multiple cues (voice, body, gestures, words), language variety, and personal focus (emotions, feelings). The more of these attributes a mechanism possesses, the higher is the degree of IR of the mechanism, and the greater is its capacity to handle ambiguity and hence the greater is its knowledge transfer capacity. Knowledge transfer mechanisms with a relatively high degree of IR refer to face-to-face interactions and team-based mechanisms (meetings, trainings, seminars, workshops, outlet visits and telephone) and knowledge transfer mechanism with a lower degree of IR refer to written media, manuals, reports, databases, written instructions and electronic media. Face-to-face is the richest communication mechanism because it has the capacity for direct experience, multiple information cues, immediate feedback and personal focus. Written impersonalized documents, like standardized computer reports, databases, computer prints, are the media with the lowest information richness level. There is no opportunity for feedback and these documents have quantitative nature. The information richness theory can be summarized by the following proposition: The higher the task ambiguity, the more rich knowledge transfer mechanisms are needed for an effective knowledge transfer.

### Tacitness of system-specific knowledge as determinant of knowledge transfer mechanisms

According to the knowledge-based view, the relevant characteristic for the determination of the efficient knowledge governance mechanisms is the degree of tacitness of knowledge. If the knowledge is explicit and hence codifiable, knowledge can be efficiently transferred by using lower-IR-knowledge transfer mechanisms (LIR). If the

knowledge is tacit and hence difficult to codify, higher-IR-transfer mechanisms (HIR) are needed to process and transfer the tacit component of knowledge. This is compatible with Teece' view (Teece, 1985, 229): "Tacit knowledge is extremely difficult to transfer without...teaching, demonstration and participation". Therefore, as tacitness of knowledge increases by degree, a larger knowledge transfer capacity and hence higher-IR-knowledge transfer mechanisms are required for an efficient knowledge transfer. In addition, Berry and Broadbent (1987), Argote (1999), Almeida and Kogut (1999) argue that high-information rich mechanisms facilitate both the transfer of tacit and explicit knowledge because of the complementarity between tacit and explicit knowledge. In sum, the knowledge-based view on the choice of knowledge transfer mechanisms can be stated by the following proposition: The more tacit (explicit) the knowledge is, the more knowledge transfer mechanisms with a higher (lower) degree of IR are needed to facilitate an efficient knowledge transfer.

Now we apply this approach to the explanation of knowledge transfer mechanisms in franchising networks. The choice of knowledge transfer mechanisms in franchising networks depends on the tacitness-component of system-specific knowledge. (a) With a low tacitness-component, the system-specific knowledge can be easily transferred by using lower-IR-mechanisms (for instance, postal mailings, fax, intra- and internet and other electronic transfer mechanisms). (b) With a high tacitness-component, the system-specific knowledge can be only transferred by using higher-IR-mechanisms (for instance training, meetings, visits, committees, telephone). (c) With a combination of tacit and explicit system-specific knowledge, the franchisor needs both low- and high-IR-mechanisms to efficiently transfer the system-specific knowledge to the local partners. In addition, high-IR-mechanisms, such as training, visits and meetings, also improve the understanding of the more explicit component of the system-specific knowledge (Argote, 1999).

As a result, the knowledge-based proposition on the choice of knowledge transfer mechanisms in franchising can be stated as follows: The less tacit the system-specific knowledge of the franchisor is, the more lower-IR-transfer mechanisms (LIR) are used for the knowledge transfer; and the more tacit the system-specific knowledge, the more higher-IR-transfer mechanisms (HIR) are used for the transfer of system-specific knowledge. The following testable hypotheses can be derived:

*H1:* The use of LIR is negatively related with tacitness of system-specific knowledge.

*H2:* The use of HIR is positively related with tacitness of system-specific knowledge.

Table 1 Estimate of non-response bias

	Non-response bias <sup>a</sup>		Test statistic	p-value
	Means, (SD) & counts <sup>b</sup>			
	Respondents	Non-respondents		
Initial franchise fees (€)	12 131 (9071.61) N = 37	15 512 (16 767.51) N = 38	t = 1.082	0.283
Royalty rate (%)	6.24 (6.086) N = 34	6.12 (5.115) N = 34	t = 0.086	0.931
Age (Years)	11.98 (11.147) N = 79	8.28 (8.942) N = 122	t = 1.418	0.158
Number of franchisees	21.25 (28.515) N = 79	19.836 (38.475) N = 122	t = 0.138	0.890

<sup>a</sup>The measures of royalty rate and initial franchise fees were first tested by a MANOVA to ensure independence of these variables. MANOVA was non-significant (Wilks'  $\lambda = 0.974, p = 0.465$ ).

<sup>b</sup>Counts differ across different measures because of item non-responses.

METHODOLOGY

Sample and data collection

The empirical setting for testing these hypotheses is franchising sector in Austria. We started our empirical work by first obtaining the complete list of all franchise systems in Austria from the Austrian Franchise Association (AFA). AFA identified a total of 299 franchised systems in Austria. Hence the AFA directory provided the most comprehensive listing of franchise systems operating in Austria. After several preliminary steps in questionnaire development, including interviews with franchisors and franchise consultants and the representatives of the AFA in Salzburg, the final version of the questionnaire was sent out by mail to the general managers of the franchise systems. The questionnaire took approximately 10 minutes to complete on average. We received 83 completed responses; hence the response rate is 27.7%. The general managers as respondents to the survey were the key informants of the franchise systems. Key informants should occupy roles that make them knowledgeable about the issues being researched (John and Reve, 1982). Since the general managers as top decision makers in the franchise systems are involved in all organizational decisions (including the design of the knowledge transfer mechanisms), they were judged to be the most suitable respondents.

In implementing the survey we took several steps to ensure a good response rate, ranging from including a support letter from the president of the Austrian Franchise Association to conducting multiple follow ups with non-respondents (Fowler, 1993). We examined the non-response bias by investigating whether the results obtained from analysis were driven by differences between the group of respondents and the group of non-respondents. An estimation of non-response bias was conducted by using two approaches. First, non-response bias was estimated by comparing early versus late responders (Armstrong and Overton, 1977), where late responders serve as proxies for

non-respondents. No significant differences emerged between the two groups of respondents. The second approach was based on a direct comparison of the respondents with the non-respondents along variables for which population statistics were available from the Austrian Franchise Association, i.e., system age, number of franchisees, royalty-rates and initial franchise fees. As shown in Table 1, no significant differences between the respondents and non-respondents were observed. In sum, respondents and non-respondents seem to have come from the same population.

Measurement

Information richness

Adapted from Daft and Lengel (1984) and Vickery et al. (2004), we differentiate the following knowledge transfer mechanisms in franchising (see Figure 1): Face-to-face (training, meetings, visits), telephone, electronic media (emails, intra- and internet), written personal letters, written formal documents and manuals, numeric formal media (computer output). Face-to-face is the knowledge transfer mechanism with the highest information richness and numeric formal media with the lowest information richness. This hierarchy of information richness is also confirmed by empirical research (D'Ambra et al., 1998). Our research focuses on face-to-face (training,

Communication Medium	Increasing Information Richness
Face-to-face (training, meetings, visits)	↑
Telephone	
Electronic (email, intra- and internet)	
Written personal (letters, fax)	
Written formal (documents, manuals)	
Numeric formal (accounting data)	

Note: Adapted from Daft and Lengel (1984) and Vickery et al. (2004).

Figure 1 Information richness of knowledge transfer mechanisms

meeting, outlet visits), telephone, intra- and internet, and fax. Consistent with IR-hierarchy, we differentiate knowledge transfer mechanisms with a relatively high degree of information richness (training, conference meetings, visits of the outlets, and phone) and knowledge transfer mechanisms with a relatively low degree of information richness (fax, phone, intra- and internet and other electronic transfer mechanisms). Therefore, our study operationalizes information richness in accordance with Daft and Lengel's approach.

Information richness is measured by the extent to which the franchisors use intra- and internet, fax, phone, initial and annual training, annual meetings between franchisors and franchisees and franchisors' visits to franchisees outlets. The franchisors were asked to rate the use of these mechanisms on a 7-point scale. The higher the score, the higher is the franchisor's use of a certain mechanism. We construct indicators for LIR-mechanisms (LIR) like intranet, internet and fax and for higher-IR-mechanisms (HIR) like initial training for the opening of franchisees outlets, annual training, annual meetings between franchisors and franchisees, phone, and franchisors' visits to franchisees outlets (see Appendix). Based on the information richness theory, we use formative indicators representing the domain of the content of HIR and LIR (Diamantopoulos and Winkelhofer, 2001). Since formative indicators influence the construct, "internal consistency reliability is not an appropriate standard for evaluating the adequacy of the measures" (Jarvis *et al.*, 2003: 202; Howell, 1987).

#### *Knowledge characteristics*

According to the knowledge-based view of the firm, the knowledge characteristic relevant for the choice of knowledge transfer mechanism is tacitness of system-specific knowledge which is measured by codifiability and teachability. Codifiability refers to the ease by which knowledge can be expressed in language, formal procedures and explicit techniques, and teachability refers to the ease by which knowledge can be expressed in personal interactions and experience (Zhang and Faerman, 2004). As Winter (1987) and Teece (1985) point out, transfer of tacit knowledge, if possible at all, requires teaching, demonstration and participation. For instance, if the system-specific knowledge of the franchisor cannot be taught, the franchisees cannot acquire and apply the requisite knowledge to efficiently manage the local outlets. Hence codifiability (COD) and teachability (TEACH) measure the latent construct of tacitness. Adapted from Zander and Kogut (1995), we use two-item scales to measure codifiability and teachability (see Appendix).

#### *Control variables*

*Sector (SEC)*. We include a sectoral variable to control for sectoral effects, because the know-how

intensity of franchising firms varies between product/distribution and service firms (Zeithaml *et al.*, 1985). 0 refers to product and distribution franchising and 1 to the service sector. Since the firms in the service sector are characterized by a higher fraction of non-codifiable system-specific knowledge compared to the product franchising firms, franchisors in the service sector should use relatively more high-IR mechanisms compared to product and distribution franchising firms.

*Multi-unit franchising (MULTI)*. MULTI measures the impact of multi-unit franchising on the use of knowledge transfer mechanisms between the franchisor and the franchisees. Multi-unit franchising enables the franchisor to delegate to the multi-unit franchisees some tasks concerning the transfer of system-specific knowledge between the local units of the franchisees' multi-unit networks. This requires a lower knowledge transfer capacity at the franchisor's headquarters. Consequently, the more multi-unit franchisees exist in a system, the lower is the knowledge transfer requirement between the headquarters and franchisees, and hence the less knowledge transfer mechanisms are used between the franchisor and the franchisees.

*Age of the franchise system (AGE)*. AGE (measured by the number of years since the opening of the first franchise outlet in Austria) is a proxy for inter-organizational learning and trust building in the network. (a) The older is the franchise company, the more the franchisor can learn about the application of system-specific know-how at the local markets, the higher is the tendency toward standardization of the system-specific know-how, due to the knowledge conversion effect from more tacit to more explicit knowledge (Inkpen, 2000; Nonaka, 1994), and the less HIR- and the more LIR-knowledge transfer mechanisms are used. (b) In addition, AGE is an indicator for the existence of knowledge-based trust in the system (Dyer and Chu, 2000; Gulati, 1995). Under the relational view of governance (Dyer and Singh, 1998; Gulati and Nickerson, 2007; Macneil, 1981; Zaheer and Venkatraman, 1995), trust is a substitute for the use of formal knowledge transfer mechanisms. In other words, the franchisors are likely to use less formal knowledge transfer mechanisms when trust exists between the partners in the network.

## RESULTS

### **Descriptive data**

Tables 2 and 3 and Figures 2 and 3 present descriptive data for the sample in Austria. First, we ask the question, which knowledge transfer mechanisms are used by the 83 franchising firms in

Table 2 Characteristics of the franchise systems

	N	Minimum	Maximum	Mean	SD
Sector—0: product and distribution; 1: services	83	0	1	0.59	0.50
Number of outlets	82	2.00	172.00	28.06	34.35
Age of the franchise system in Austria	79	1.00	78.00	11.99	11.15
Number of franchisees	79	1	159	21.25	28.52
Percentage of franchised outlets	79	14.53	99.38	71.97	24.80

Austria. Figure 2 shows the percentage of franchising firms that use the following mechanisms: Personal contacts (89%), partner meetings (84%), postal mailings (77%), telephone (69%), fax (62%), seminars (56%), internet (56%), conferences, which provide a forum for exchange of experience between franchisors and franchisees (50%) and intranet (36%). Figure 3 shows that the system-specific knowledge of the franchisor is primarily transferred by using higher-IR-mechanisms, such as training, meetings between franchisor and franchisee and visits. Lower-IR-mechanisms are less important for the transfer of system-specific knowledge to the franchisees.

**Test of hypotheses**

To test the hypotheses 1 and 2 we carry out a regression analysis. We conduct an OLS regression analysis with HIR and LIR as dependent variables measuring the extent of the use of higher-IR-mechanisms and lower-IR-mechanisms. HIR refers to the use of meetings between the franchisor and the franchisees, initial and annual trainings, phone and franchisor visits, and lower-IR-mechanisms (LIR) refer to the use of intranet, internet and fax. The franchisors were asked to rate the use of higher-IR- and lower-IR-mechanisms (HIR, LIR) on a 7-point scale. By averaging the scale values we constructed HIR- and LIR-indicators. The explana-

tory variables refer to codifiability of knowledge (COD), teachability of knowledge (TEACH), age of the franchise system in Austria (AGE), multi-unit franchising (MULTI) and the sectoral variable (SEC). Table 4 presents the correlations of the variables used in the regression analysis. In addition, the variance inflation factors are well below the rule-of-thumb cut-off of 10 (Neter *et al.*, 1985). In sum, we do not find any collinearity indication.

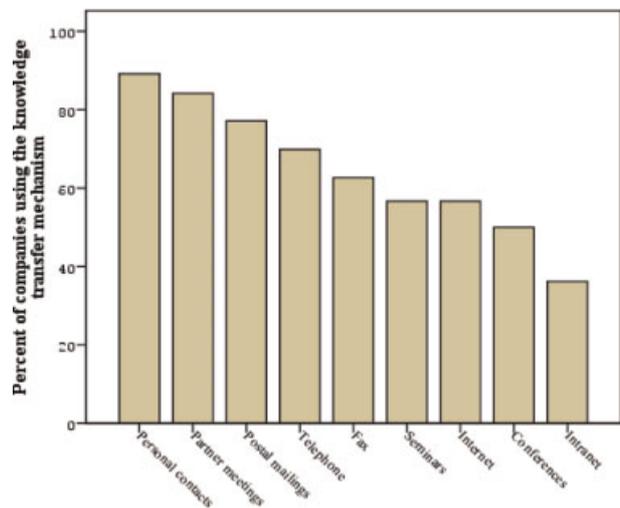


Figure 2 Knowledge transfer between franchisors and franchisees in Austria

Table 3 Knowledge transfer modes and knowledge characteristics

	Minimum	Maximum	Mean	SD
Intra- and internet	1	7	4.00	2.295
Fax	1	7	4.22	1.976
Phone	1	7	5.20	1.591
Initial training	1	7	6.42	1.298
Annual training	1	7	5.22	1.506
Conference meetings	1	7	5.66	1.618
Franchisors' outlet visits	1	7	5.84	1.384
COD1	1	5	3.80	1.187
COD2	1	5	3.39	1.386
TEACH1	2	5	4.58	0.683
TEACH2	1	5	2.88	1.141
COD	1	5	3.58	1.089
TEACH	1.67	5	3.75	0.718

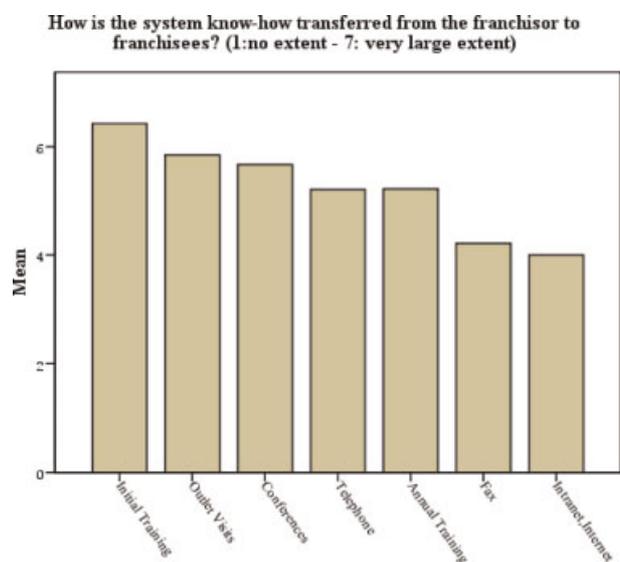


Figure 3 Transfer of system-specific know-how

Table 4 Correlation

	TEACH	COD	MULTI	AGE	SEC
TEACH	1.000				
COD	0.131	1.000			
MULTI	0.058	-0.263	1.000		
AGE	0.105	-0.045	0.158	1.000	
SEC	0.120	0.163	-0.043	-0.050	1.000

## (1) Hypothesis 1: Higher-IR-Mechanisms

We estimate the following regression equation:

$$\text{HIR} = \alpha + \beta_1 \text{TEACH} + \beta_2 \text{COD} + \beta_3 \text{AGE} + \beta_4 \text{MULTI}$$

HIR varies positively with teachability (TEACH) and negatively with codifiability (COD). Further, we include AGE, MULTI and SEC as control variables. AGE results in more standardization due to the knowledge conversion effect and hence in less HIR-knowledge transfer mechanisms. In addition, knowledge-based trust varies with AGE and hence leads to less use of formal knowledge transfer mechanisms. Multi-unit franchising (MULTI) results in less HIR, due to the delegation of system knowledge transfer to the multi-unit franchisees. Since service franchising firms have a higher tacitness-component of system-specific knowledge, the use of higher-IR mechanisms should be greater in the service sector than in the product franchising sector. Table 5 reports the results of regression analysis for HIR. The coefficient of teachability (TEACH) is significant and consistent with our hypothesis. An increase in teachability of knowledge implies the use of more higher-IR-mechanisms. In addition, the coefficient of COD is also significant and positive. This may be explained by the complementarity between tacit and explicit knowledge (Argote, 1999; Berry and Broadbent, 1987). They argue that HIR-knowledge transfer mechanisms facilitate both the transfer of tacit and explicit knowledge. The coefficient of AGE is significant indicating that, due to

Table 5 Regression results for HIR

HIR	
Intercept	6.082*** (0.161)
TEACH	0.234*** (0.083)
COD	0.23*** (0.084)
AGE	-0.016** (0.007)
MULTI	-0.304* (0.161)
SEC	-0.115 (0.161)
	F = 5.913
	R <sup>2</sup> = 0.297
	N = 75

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ ; values in parentheses are standard errors.

Table 6 Regression results for LIR

LIR	
Intercept	4.417*** (0.396)
COD	0.709*** (0.196)
TEACH	-0.037 (0.193)
MULTI	-0.589 (0.376)
SEC	-0.352 (0.375)
AGE	0.012 (0.016)
	F = 3.87
	R <sup>2</sup> = 0.217
	N = 75

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ ; values in parentheses are standard errors.

the knowledge conversion and trust building effect, less HIR are used. In addition, the coefficient of MULTI is negative and slightly significant indicating that less HIR are required under multi-unit franchising. The coefficient of the sectoral variable is not significant.

## (2) Hypotheses 2: Lower-IR-Mechanisms

$$\text{LIR} = \alpha + \beta_1 \text{COD} + \beta_2 \text{TEACH} + \beta_3 \text{AGE} + \beta_4 \text{MULTI} + \beta_5 \text{SEC}$$

LIR varies positively with codifiability (COD) and negatively with teachability (TEACH). AGE results in more standardization due to the knowledge conversion effect and hence in more use of LIR-knowledge transfer mechanisms. Due to the delegation of the system-specific knowledge transfer to multi-unit franchisees, multi-unit franchising (MULTI) requires less LIR. Since service franchising firms have a higher tacitness-component of system-specific knowledge, the use of lower-IR mechanisms should be lower in the service sector than in product franchising sector. Table 6 reports the results of the regression analysis for LIR. The coefficient of codifiability (COD) is significant and consistent with our hypothesis. An increase in codifiability of knowledge implies the use of more lower-IR-mechanisms. The coefficient of TEACH is negative but not significant. The negative but non-significant coefficient of MULTI indicates that multi-unit franchising may lead to less use of LIR. The coefficients of AGE and SEC are not significant.

## DISCUSSION

The goal of the paper is to provide a knowledge-based view on the choice of knowledge transfer mechanisms in franchising networks. According to the knowledge-based view, the knowledge transfer from franchisor to franchisees is governed by higher-IR-mechanisms if the system-specific knowledge is more tacit, and it is governed by lower-IR-mechanisms if the system-specific knowledge is

more explicit. Using data from the Austrian franchising sector, the results provide support for these hypotheses. In addition, our data support the view that high IR mechanisms facilitate both the transfer of tacit and explicit knowledge (Almeida and Kogut, 1999; Argote, 1999).

How does our approach extend the results in the literature? *First*, our knowledge-based theory integrates results from the information richness theory. Information richness theory offers "richness" as a criterion to determine the knowledge transfer capacity of knowledge governance mechanisms. *Second*, the major contribution of our study is to apply this approach for the explanation of knowledge transfer mechanisms in franchising networks. Our study utilizes primary data from the Austrian franchise sector that enables the estimation of factors the theory considers important to affect the choice of knowledge transfer mechanisms. We use knowledge attributes, such as teachability and codifiability, to measure tacitness of system-specific knowledge. However, the measurement is not without limitations; it is a first step to operationalize knowledge with different degrees of tacitness. Future empirical research in franchising should include additional electronic knowledge transfer mechanisms (such as video technologies, electronic bulletin boards, discussion groups, corporate directories) that support all forms of knowledge transfer between franchisors and franchisees (Alavi and Leidner, 2001; Andreu and Ciborra, 1996).

Our findings also have practical relevance for the franchisors. Based on the knowledge-based view, franchisors have to select knowledge transfer mechanisms according to the degree of codifiability of the knowledge source. In order to gain competitive advantage by setting up a franchising network, low-IR-knowledge transfer mechanisms are needed to facilitate the transfer of codifiable system-specific knowledge and high-IR-knowledge transfer mechanisms are needed to facilitate the transfer of non-codifiable system-specific knowledge. Hence a successful franchisor has to match the knowledge transfer strategy to the information processing requirements of the different attributes of system-specific knowledge.

## ACKNOWLEDGEMENTS

We would like to thank Mrs. Waltraud Martius, the President of the Austrian Franchise Association, for supporting this research. Nina Gorovaia acknowledges Ernst Mach scholarship for post doctoral scholars from Austrian Exchange Service.

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APPENDIX: MEASURES OF VARIABLES

Lower-IR-knowledge transfer mechanisms (LIR)	To which extent does the franchisor use knowledge transfer mechanisms with a lower degree of IR: (Intra- and internet, fax) (1, no extent;7, to a very large extent)
Higher-IR-knowledge transfer mechanisms (HIR)	To which extent does the franchisor use knowledge transfer mechanisms with a higher degree of IR: (Telephone, initial and annual training, conference meetings between franchisor and franchisees, outlet visits) (1, no extent;7, to a very large extent)
Codifiability (COD)	The franchisor has to evaluate codifiability on a 5-point scale (1, strongly disagree; 5, strongly agree): COD1: Large parts of the business processes between the headquarters and the outlets can be carried out by using information technology COD2: We have an extensive written documentation describing critical parts of the business processes in the franchise system.
Teachability (TEACH)	The franchisor has to evaluate teachability on a 5-point scale: TEACH1: Franchisees can easily learn the main procedures and activities through personal support and personal discussion with the employees of the franchisor. TEACH2: Training of franchisees is a fast and easy task.
Multi-unit franchising (MULTI)	Dummy variable: 0 refers to single-unit and 1 to multi-unit franchising systems
Age of the franchise system (AGE)	Number of years since opening the first franchise outlet in Austria
Sector (SEC)	0: product and distribution franchising; 1: service franchising