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DESIGN CHARACTERISTICS OF VIRTUAL TALENT COMMUNITIES: A CROSS-NATIONAL, TALENT-FOCUSED, EXPLORATORY REQUIREMENTS ANALYSIS

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Abstract

Following the debate on ´war for talent´ and ´talent on demand´, the adequate design of applications which supports the development and deployment of talents is of major interest to individuals and organisations. The innovative concept of a comprehensive virtual talent community (VTC) offers an approach for multi-actor, talent-relevant interaction. As the development and acquisition of highly qualified talents is performed with a global perspective, this paper aims at eliciting and evaluating cross-national design characteristics (DC) to support successful development, implementation, and improvement of VTC. Based on DeLone and McLean´s IS success model (ISSM), the study employs a cross-national, talent-focused Delphi study to elicit and evaluate VTC-relevant DC, respectively VTC requirements for the first time. As the study is highly exploratory, the weighting of participants´ national contexts is out of scope. Even though the surveyed groups are drawn from different national contexts (Chinese, German, Russian) the study reveals favourable rather homogenous system-, information-, and service-related requirements of potential VTC. The participants ranked almost concordantly secure, structured, current, credible, low-cost, and responsible as the most important VTC-DC. Hence, the paper extends the already existing body of research on DC in the human resource management (HRM) context and especially here in the context of Virtual Learning Environments, and provides practical insights for cross-national/global VTC development, implementation, and improvement endeavours.

Keywords: Cross-National Requirements Analysis, Delphi Study, Design Characteristic, e-Human Resource Management, Human Resource Information System, IS Success Model, Virtual Talent Community.

1 Introduction

For more than a decade virtual communities (VC) are applied for social and economic interaction (Hagel III and Armstrong, 1997; Rheingold, 1993) and basic research has been conducted also in the application context of human resource management (HRM). In this regard, Virtual Talent Community (VTC) is a novel concept which reflects, on the one hand, the debate on the (global) ´War for Talent´ (Michaels et al. 2001) and the subsequent shift to holistic, talent-oriented HRM-strategies and systems (Schweyer, 2004, p. 20ff. + 38f.) and, on the other hand, the generation V(irtual)-phenomenon (GARTNER, 2008) and the corresponding increase in the usage of company's internal and external web-based applications for interactive human resource (HR)-related purposes (Diederichsen, 2010; Martin et al., 2009). Talent is commonly defined as (a person having) an ability of superior quality and is characterised by different dimensions such as time reference (existent – latent), measurability (measurable/ hard skills – hardly measurable/ soft skills), extent (adequate talent – high potential), and company reference (company-internal – company-external). Talent management (TM) is the organisational endeavour of the "[..] systematic attraction, identification, development, engagement/ retention and deployment of those individuals with high potential who are of particular value to the organisation" (Tansley et al., 2007, p. pxi; see also Lewis and Heckman, 2006). Underlining the strategic relevance, TM is often supported by respective talent management systems (Schweyer, 2004) and talent relationship approaches. Virtual community (VC) is a phenomenon which involves: "[a] establishing connections on electronic networks among people with common needs [b] so that they can engage in shared discussions [c] that persist and accumulate over time [d] leading to complex webs of personal relationships and an increasing sense of identification with the overall community." (Hagel III, 2007). The variance of VC concepts, designs, and context is abundant. Hence, a VTC is defined as an innovative web-based approach to integrate people – individuals (talents) and organisations (talent seekers, talent producers, and talent intermediaries) –, interactions, processes, and services in order to identify, develop, and deploy talents in a global environment. VTC constitute a sub-category of human resource information systems (HRIS) encompassing different facets of VC, e.g. social networks, and as such are discussed in electronic Human Resource Management (e-HRM) research (Strohmeier, 2007). However, the profit of applying VTC (e.g. facilitation of convenient, ubiquitous information and knowledge sharing processes, communication and relationship building, collaboration and transaction [e.g. Lin, 2008]), strongly depends on their appropriate development, implementation and (continuous) improvement since only properly developed, implemented and (continuously) improved VTC will yield success (Dennis et al., 2006; Kavanagh and Thite, 2009; Mueller et al. 2010; Schaffert and Wieden-Bischof, 2009; Sommerville, 2007). As former studies articulate the impact of the national context on information systems´ (IS) design (see e.g. Pawlowski and Richter, 2010; Siau et al., 2010), this also applies to globally accessible VTC. Thus, national specific requirements of potential VTC end users are of major interest in regard to the appropriate cross-national VTC design. This implies that VTC success is manageable, at least, to a certain degree (Strohmeier, 2009). In particular, the so-called design characteristics (DC) may support VTC-related stakeholders such as decision makers, system developers, system implementers, system evaluators as well as content providers, respectively training and development-related stakeholders in accomplishing successfully the development, implementation and/or (continuous) improvement of VTC based on talent-specific requirements (Dennis et al., 2006; Kavanagh & Thite, 2009; Mueller et al., 2010; Sommerville, 2007). Technically (e.g. ISO/IEC, 2005) as well as managerially oriented literature (e.g. DeLone and McLean, 2003; Venkatesh and Bala, 2008) understand DC, respectively requirements, as a set of those inherent IS properties which determine IS success in general, and VTC success in particular. A common categorisation distinguishes between system-, information-, and service-related (VTC) DC (DeLone and McLean, 2003; Lin and Lee, 2006; Lin, 2008). Whereas system-related DC measure the desired properties of a VTC itself (e.g. *secure*), information-related ones (e.g. *understandable*) may measure the desired properties which refer to the information provided by a VTC. Service-related DC are understood as a set of properties which refer to more human-related VTC success drivers (e.g. *consultatory*). Due to the community-oriented approach and the given

human resource (HR)-context, it is assumed that service-oriented DC drive VTC success in particular. Given this theoretical-approach, it is of particular academic interest to support practitioners in the specification, elicitation and evaluation of relevant VTC-DC so that they may develop, implement and (continuously) improve successful VTC (Mueller et al., 2010). As there is currently little research and hence knowledge concerning a comprehensive and systematic set of well-defined, simultaneously detailed and operative DC contingent on VTC in particular, the purpose of this study is to systematically elicit and evaluate a holistic set of VTC-DC for the first time by use of a comprehensive cross-national, talent-focused Delphi study. Thus, the study aims at detecting hints towards potential cross-national differences especially with regard to the prioritisation of VTC-DC. As the study is highly exploratory, the weighting of participants´ national contexts is out of scope and a generalization of results is not intended. Subsequently, the theory-grounded analysis is explained in more detail (theory, method, results, and discussion). Based on the findings of the requirements analysis, implications for research and practice are presented. The paper ends with an overall conclusion.

2 Cross-National, Talent-Focused, Exploratory Requirements Analysis

2.1 Theoretical Foundation

As a clear explorative empirical method, Delphi studies are usually employed to gain insights in topical domains which are theoretically not, or at least, not well enough developed and hence, are not open to confirmative research (e.g. Haeder, 2002; Landeta, 2005; Grisham, 2009). In certain respects, this applies to research into VTC-DC too. At least, there is no completely developed theory of VTC design which would allow for a direct elicitation of the desired DC. However, alternative foundations may be found – given the subject of the study – in the area of general IS design or general IS success. In the recently flourishing area of IS design the necessity of a general theory of IS design is well recognised (e.g. Hevner et al., 2004). However, so far rather procedural models of design research have been offered (e.g. Hevner et al., 2004), while an explicit theory of IS design, which directly unfolds DC or at least allows to derivate DC, is missing at present. Conversely, in the area of general IS success there are some recognised theories (e.g. DeLone and McLean, 2003; Venkatesh and Bala, 2008). Since explaining success of IS such theories mandatorily present a set of success predictors. As long as such success predictors constitute or at least refer to IS characteristics, these theories can be also used to found design characteristic research. In view of this possibility, in particular the ISSM (DeLone and McLean, 2003) presents general success relevant IS characteristics and, additionally, is repeatedly validated. Basically, ISSM offers three groups of success predictors, namely, systems quality, information quality and service quality (DeLone and McLean, 2003). Transferred to VTC design characteristic, the ISSM hence clarifies that system- (system functionalities of a VTC as such), information- (content of a VTC) and service-related DC (management and sustainment of a VTC) constitute essential groups of DC. Being a general theory, ISSM however is not able to provide more detailed information about VTC-DC. It is hence the task of the talent-focused Delphi study to ascertain system-, information- as well as service-related DC of VTC empirically.

2.2 Method

To ascertain success relevant system-, information- as well as service-related VTC characteristics with a talent-focused study, the Delphi method is considered to be a promising approach (e.g. Haeder, 2002; Landeta, 2005; Grisham 2009). Besides, supporting practical forecasting and practical decisions, the Delphi method is also appropriate for systematic analyses of complex and multifaceted scientific topics that are not directly and easily accessible via quantitative research approaches (e.g. Grisham, 2009). To ascertain relevant DC systematically, a two-phased approach was performed. Phase I was aimed at a general inquiry and categorisation of generally imaginable DC. As the starting point of the phase I, national groups of appropriate talents were appointed. Participants were selected based on their knowledge in job portals (master, graduate student) and their different national backgrounds.

Talents from countries with high economic growth (Russia, China) were particularly targeted due to their impact on global HRM strategies. Compared to the German group, Chinese and Russian talents were assumed to state and rank different VTC-DC due to different national backgrounds (Hofstede, 1980). The resulting three groups consisted of 13 Chinese, 21 Russian and 16 German talents, 50 participants in total. Subsequently, an online-questionnaire was developed. Beside the provision of a general introduction to the questionnaire, relevant terms such as VTC and design characteristic were thoroughly defined and visually illustrated in order to assure a consistent understanding of the key constructs and questions applied. In so doing, the questions referred to the creation of a comprehensive list of VTC-DC in general, and subsequently to match this list to the design characteristic categories (system-, information-, and service-related) in particular. Balancing the trade-off between specificity and validity it was asked for characteristics which were specific but generally valid. To avoid mere adjective lists with undefined and hence unclear constructs, survey participants were explicitly encouraged to explain the stated VTC-DC in detail. The questionnaire was pre-tested and slightly modified based on in-depth interviews with two talents. The online survey was carried out in summer 2010 in which all 50 talents participated. A monitoring team of four independent researchers individually evaluated the results obtained in phase I. In particular, based on the construct explanations synonymous VTC-DC were identified and adjusted, the adjusted set of DC was summarized respectively aggregated according to the principles of "summarizing content analysis" (Mayring, 2000), and finally, general definitions for the summarised DC were derived from the talent explanations. In a subsequent group discussion, individual results of the monitoring team members were mutually adjusted, while there was an initial high degree of inter-coder reliability within the monitoring team anyway. During the preparation of phase II the result list of VTC-DC of phase I was enriched with the results of the review of previous work (see Table 2 below: Literature Review and Web Screening of VTC-relevant examples such as brightfuse.com, monster.com). The resulting list of adjusted, aggregated, enriched, categorised and defined VTC-DC constituted the base of the second online-questionnaire. The 50 talents were asked to rank unequivocally the presented VTC-DC per system, information, and service category deploying an open scale ranging from highest (rank 1) to lowest (rank n) priority for VTC success.

2.3   Results

Table 1 summarises the results of the prioritisation process in phase II by presenting the mean values (MV) and the standard deviations (SD) according to participants' national background:

VTC Design Characteristic -Chinese-		VTC Design Characteristic -German-		VTC Design Characteristic -Russian-	
A. System-Related		A. System-Related		A. System-Related	
Structured	A1. 1.85 (1.28)	Secure	A1. 1.50 (1.00)	Secure	A1. 2.67 (2.08)
Secure	A2. 2.08 (1.12)	Interactive	A2. 2.00 (0.82)	Structured	A2. 3.48 (2.04)
Fast	A3. 4.00 (2.31)	Structured	A3. 2.25 (1.26)	Fast	A3. 4.95 (1.86)
Interactive	A4. 4.08 (2.25)	Fast	A4. 2.50 (1.29)	Interactive	A4. 5.52 (3.14)
Appealing	A5. 4.92 (1.93)	Appealing	A5. 3.75 (1.50)	Appealing	A5. 8.24 (1.44)
B. Information-Related		B. Information-Related		B. Information-Related	
Credible	B1. 1.69 (1.25)	Relevant	B1. 1.75 (0.50)	Current	B1. 3.14 (1.75)
Current	B2. 2.08 (1.04)	Credible	B2. 2.25 (0.96)	Credible	B2. 3.19 (2.38)
-	-	Current	B2. 2.25 (0.96)	-	-
Relevant	B3. 2.23 (1.24)	-	-	Relevant	B3. 3.33 (1.78)
Understandable	B4. 3.46 (1.33)	Understandable	B4. 3.25 (1.71)	Complete	B4. 3.52 (1.73)
-	-	Complete	B4. 3.25 (1.71)	-	-
Complete	B5. 3.62 (1.50)	-	-	Understandable	B5. 4.24 (2.04)
C. Service-Related		C. Service-Related		C. Service-Related	
Low-Cost	C1. 1.77 (0.83)	Low-Cost	C1. 1.25 (0.50)	Low-Cost	C1. 2.05 (1.43)
Responsible	C2. 1.85 (0.90)	Responsive	C2. 1.75 (0.50)	Consultatory	C2. 3.24 (1.77)
Consultatory	C3. 2.00 (0.82)	Consultatory	C3. 2.75 (0.50)	Add-Free	C3. 4.09 (1.66)
-	-	Add-Free	C4. 3.00 (1.41)	Responsive	C4. 4.38 (1.65)

Table 1.   Means and Standard Deviations of VTC-DC Ranks.

The derived definitions of these characteristics are presented in Table 2, while each definition is illustrated with selected statements of the literature, the Web Screening and/or the talents surveyed in order to make their origin more transparent:

Design Characteristic	Definition	Source		Exemplary Statement
A. System-Related				
Secure	VTC are *secure* if the system itself as well as unauthorised users cannot read, modify or delete the users' personal profile data, respectively further personal information. [see also Mueller and Strohmeier 2010]	Literature Review		"[…] technical security is one of the most important success factors for a VC." (Leimeister, Sidiras and Krcmar, 2006, p. 296). "Handling member data/profiles sensitively is a vital success factor." (Leimeister, Sidiras and Krcmar, 2006, p. 297)
		Web Screening		Reliable (no technical problems, constant capacity).
		Talent Study	Chinese	"Privacy (setting options), data security."
			German	"Data security in regard to personal data; personal data transfer (name, contact data) only after first communication between talent and talent seeker.2
			Russian	„Strict data security."
Interactive	VTC are *interactive* if they attract a sufficient group of actors and then support actor-actor (e.g. asynchronous and synchronous communication between applicants and further VTC actors) and/or actor-system interaction (e.g. application/intermediary wizard, intelligent search options in order to support the talent´s effort in searching and applying for a job). [see also Mueller and Strohmeier 2010]	Literature Review		„[…] community providers should offer a high level of interactivity among community members." (Lin, 2008, p. 526)
		Web Screening		The TC has functions which enable actor´s information (e.g. newsletter, RSS, status report, people directory), support (e.g. application wizard, search options), dialogue-oriented communication (e.g. (micro-)blog with comment function, chat, forum), and collaboration (e.g. file sharing, tagging, rating of competencies, calendar). Interactive: Optimise interactive recruiting strategy.
		Talent Study	Chinese	"Online-interaction among all users; (additional) communication forum/BBS for graduates/job applicants; chat; Communication and information, experience sharing by applicants; online application option/wizard; profile/timeline of education and job experience; supporting; intelligent/multi-dimensional search options on welcome page; data storing alerts e.g. on news, job offers, status changes, via e-mail or sms; direct communication between companies, training institutes, job intermediaries, and talents; feedback with applicants; lots of users."
			German	"Easy interaction with all actors, rating functionality (talents-companies); alerts on job offers; lots of companies; big pool of companies; wide network."
			Russian	"Profile design options (AD-note supportive: e.g. profile generator/wizard); job and training recommendations to enhance the chance to be hired; customised alerts on job offers, events and application tips."
Appealing	VTC are *appealing* if their graphical user interface has a pleasant appearance. [see also Mueller and Strohmeier 2010]	Literature Review		"Screen design is the way information is presented on the screen." (Lindgaard, 1994)
		Web Screening		The design (e.g. components, arrangement/ flow, shape, colour) is appealing. Ease of use of the website makes the user feel more comfortable which means

			more appealing.
		Chinese	"Friendly and attractive design."
	Talent Study	German	"Appealing user interface."
		Russian	„Pleasant design."
Fast	VTC are *fast* if they react quickly to the users´ request (e.g. fast page reproduction, fast uploading of documents, fast display of information).	Literature Review	"[…] the most important factor [handling member data sensitively] was followed by more technical success factors such as stability and reaction time of the Web site." (Leimeister, Sidiras and Krcmar, 2006, p. 288)
		Web Screening	Flexible: in regards to actors and changing requirements.
		Chinese	"Prompt display of relevant information (e.g. through search option on welcome page); short response time after click."
	Talent Study	German	"Short response time; fast page reproduction."
		Russian	"Short response time; fast upload of documents."
Structured	VTC are *structured* if actors can effortless detect the available information (e.g. job offers) and can easily navigate the graphical user interface. [see also Mueller and Strohmeier 2010]	Literature Review	"[…] the ease with which users can move around the system." (Lee et al., 2005)
		Web Screening	Easy to find information, clear, visible.
		Chinese	"Well-arranged (to find information quickly); clearly/systematically arranged; easy to use; intuitive/easy navigation; easy but effective; sidebar on welcome page."
	Talent Study	German	"Well-arranged design; no stimulus satiation."
		Russian	"Intuitive/self-explanatory navigation."
B. Information-Related			
Current	The information provided by VTC is *current*, if it is constantly updated.	Literature Review	"[…] in addition to user-generated content, […] up-to-date information should be provided." (Leimeister, Sidiras and Krcmar, 2006, p. 297) "Members find that virtual communities meet their needs […] providing accurate, complete, constantly updated, and customized information." (Lin, 2008, p. 526)
		Web Screening	Innovative, updatable, reliable.
		Chinese	"Current/topical/up-to-date information, e.g. contact data, talent and company profiles, job offers/descriptions."
	Talent Study	German	"Current job offers; offers for job at short notice."
		Russian	"Information, e.g. job offers, need to be constantly updated."
Understandable	The information provided by VTC is *understandable* if the words, sentences, and abbreviations applied within the information provided (e.g. job offers) are clear in meaning, easy to comprehend and easy to read with reference to an international labor market. [see also Mueller and Strohmeier 2010]	Literature Review	"Members find that virtual communities meet their needs […] providing accurate […] information." (Lin, 2008, p. 526) Terminology refers to the words, sentences, and abbreviations used by a system. (Lee et al., 2005; Lindgaard, 1994)
		Web Screening	Multilingual, standard guidelines, standard procedure, uniform rules.

		Talent Study	Chinese	"International."
			German	"Information is presented in a way to prevent misinterpretation."
			Russian	"Information must be understandable; option to choose language."
Relevant	The information provided by VTC is *relevant* if it fits the actor´s search request, e.g. supports the actor to find and apply for a job or training opportunity (e.g. based on the talent's competences) or to find and acquire a talent.	Literature Review		"Members find that virtual communities meet their needs […] providing […] customised information." (Lin, 2008, p. 526)
		Web Screening		The information should be effective.
		Talent Study	Chinese	"Purposeful/useful information, e.g. job offers, requirements and career perspectives, list of educational institutes, fits to personal interests."
			German	"Information fits to actor´s competences/profile."
			Russian	„Provision of relevant information."
Credible	The information provided by VTC is *credible*, if it originates from a trustworthy source (e.g. job seeking talent, talent seeking company, recognised intermediary, accredited training institute) and is presented in a professional manner. [see also Mueller and Strohmeier 2010]	Literature Review		"Trust has the strongest influence o a sense of belonging to a virtual community." (Lin, 2008, p. 526)
		Web Screening		The website and the source of data and papers should be serious (Newspaper article, business paper…).
		Talent Study	Chinese	„Professional."
			German	"Serious information, e.g. job offers; no fun profiles; inhibit fun character of profiles by imposing a charge for membership."
			Russian	„Serious/trustworthy/reliable."
Complete	The information provided by VTC is *complete*, if it comprises a wide array of information (i.e. on actors and jobs) in a detailed manner so that there is no need to apply other sources of information.	Literature Review		"Members find that virtual communities meet their needs […] providing [..] complete, […] information." (Lin, 2008, p. 526)
		Web Screening		You can find all information about a company, or a job description in the database of the website.
		Talent Study	Chinese	"Comprehensive information, Detailed profiles, e.g. of talent (e.g. training and job experiences) and company; as much information as possible; lots of job offers; large data base; international information."
			German	"Detailed profile to emphasize training and job experience; archiving, e.g. of job offers."
			Russian	"Detailed description of job offers."

C. Service-Related

Responsive	The service provided by VTC is *responsive*, if the community management is committed to high response rates and attention to VTC dynamics – and if it transfers this approach to all community actors.	Literature Review		"Manage community discretely and expediently […]" (Leimeister, Sidiras and Krcmar, 2006, p. 297)
		Web Screening		"Communication and moderation in the form of contributions, chat, blogs or social communities."
		Talent Study	Chinese	"React/five feedback quickly; appreciate participation; inquire members´ requirements; effective management and operating team; friendly."
			German	"Easy and fast access to contact person."

		Russian		"Effective management, e.g. moderated discussions, editing, administering, deleting comments if necessary/inappropriate; guidelines must be clearly communicated; 24/7 support for general and technical problems."
Low-Cost	The service provided by VTC is available at *low-cost*, if the applied business model is economic and respects the resources and requirements of the different actor groups.	Literature Review		-
		Web Screening		Cost only for recruiters.
		Talent Study	Chinese	"Low cost; progressive charge in reference to kind of membership and/or other criteria."
			German	"Low-cost VTC."
			Russian	„Almost free of charge."
Consultatory	The service provided by VTC is *consultatory*, if it exceeds the infrastructure supply and offers additional talent relevant services.	Literature Review		-
		Web Screening		Supportive
		Talent Study	Chinese	"Guidance on personal career development; Service to design application; Example résumés; services and consulting; Provides guidance if possible; developmentally supportive; offer tips of Job application, interview skills to the graduates/Job applicants; give feedback to applicants; organise meetings between the talents and companies; foster relationships with companies (talent seekers)."
			German	"Providing assistance while creating a CV as well as during the application procedure."
			Russian	-
Add-Free	The service provided by VTC is *add-free*, if the business model does not include third party advertisements but may include advertisements by community members.	Literature Review		-
		Web Screening		-
		Talent Study	Chinese	-
			German	„Add-free VTC."
			Russian	"Add-free."

Table 2.   Definitions, Sources and Exemplary Statements of VTC-DC.

2.4 Discussion

In sum, the general objective of this Delphi study could be satisfactorily achieved. The present talent-focused requirements analysis provides a systematic set of well-defined, specific but generally valid system-, information-, and service-related VTC-DC based on the ISSM. The expected cross-national differences in VTC-DC could not be confirmed. Although the statements (phase I) were comprehensive and diverse in wording, the content analysis (preparation of phase II) led to a homogenous set of VTC-DC (see Table 2). Although it was not necessarily expected, phase II also revealed a rather homogenous ranking of the single characteristics. Cross-national findings concerning *system-related* VTC-DC show that *structured*, *secure*, *fast* and *interactive* are unambiguously rated as the most important system-related DC. Hence, the aforementioned system-related VTC-DC may be considered as the so-called must-haves when developing, implementing and/or (continuously) improving VTC. However, whereas German participants show high levels of agreement (SD ranging from 0.82 [*interactive*] to 1.26 [*structured*]), Chinese, and especially Russian participants show high levels of disagreement regarding the importance of specific system-related VTC-DC (SD ranging from 1.86 [*fast*] to 2.08 [*secure*]). Thus, the particular importance of the aforementioned system-related VTC-DC should be balanced against the specific nationality which is targeted. Regarding *information-related* VTC-DC, cross-national findings show that *credible*, *current* and *relevant* are considered to be the most important DC. Hence, when developing, implementing, and (continuously) improving VTC, relevant stakeholders should consider these information-related DC in particular. Chinese and German participants showed highest levels of agreement concerning these information-related VTC-DC (German SD ranging from 0.50 [*relevant*] to 0.96 [*credible*, *current*]), whereas Russian talents showed a more heterogeneous picture. Finally, regarding cross-national findings with a view to *service-related* VTC-DC, findings show that *low-cost*, *responsive* and *consultatory* were almost consistently ranked as most important characteristics, showing high levels of agreement amongst the participating groups. However, even though *add-free* was considered not to contribute a core service-related VTC success driver, Chinese participants did not mention this characteristic at all. Hence, Chinese talents may not be averse to VTC-specific business models drawing on (personalised) advertisements. To conclude, the results of the Delphi study present a comprehensive set of VTC-specific information, system- and service-related DC which should be considered when developing, implementing and/or continuously improving (e.g. by evaluating) VTC.

3 Implications

The above-mentioned results should generally provide a basic starting point for future research as well as design endeavors, while there are some implications for research as well as practice. Concerning **research implications**, firstly, some further theoretical deliberations may improve future research. The used ISSM is able to categorise roughly relevant DC, but however does not allow for deducing directly specific DC. This likely applies to further imaginable theoretical foundations, in particular, to the prominent TAM-approach. Again, the basic TAM does rarely propose concrete DC directly. In order to overcome this theoretical gap, more recent theoretical developments that are orientated towards design and intervention (e.g. TAM3 by Venkatesh and Bala, 2008) may offer deeper foundations. Additionally, amalgamations of such approaches with the ISSM may be worth a trial (see the example in Mueller and Zimmermann, 2009). Furthermore, given that expressiveness and usability of DC increase with growing specificity, future research should aim at increasing specificity of DC, however without losing general validity. One imaginable way is to work out different facets of the DC by constituting sub-characteristics. For instance, based on the elaborated definitions certain sub-characteristics of *appealing*, *relevant,* and *consultatory* could be established. Beyond, potential interdependencies of DC should be taken into account. Basically, DC may not be arbitrarily combinable for logical and/or technical reasons (Galletta and Lederer, 1989), hence, future research should also strive for (in-)compabilities of DC that have been found, respectively to be found. This also entails a question that has not been tackled till now, whether different system- and information-

related DC contribute rather individually and independently to VTC success, or whether whole bundles or entire configurations of design characteristic are triggering success. Finally, as for the costs and duration of developing prototypes, and, all the more, full versions of a VTC it would be highly beneficial if relevant DC could be ascertained as early as possible in order to avoid misconceptions and failure (Davis and Venkatesh, 2004). Hence, the usage of simple prototypical models (paper prototypes, video mockups, etc.) of the system planned may allow for ascertaining relevant characteristics in very early phases of the corresponding software development process (Mueller and Zimmermann, 2009).

Additionally, the results of the study yield some **implications for practice**. VTC-related stakeholders such as decision makers, system developers, system implementers as well as system evaluators are offered a general overview of system-related criteria relevant to VTC success. Beyond, with a particular view to information-related DC, content providers as well as training and development-related stakeholders may profit from their application while preparing VTC-relevant information packages. Finally, service-related VTC-DC may support intermediaries in managing and sustaining a VTC. Hereby, system-, information as well as service-related DC could also be understood as a checklist how far the particular VTC as well as its inherent information and services fulfil the proposed talent-focused VTC requirements (e.g. *system appeal, information relevance, talent consultatory*). Refining and customising such a (check-)list towards individual VTC settings and subsequently considering the list may lead to practical VTC development, implementation and (continuous) improvement processes which may minimise end user resistance, increase end user satisfaction and support overall VTC success. However, in addition to a mere elicitation and presentation of VTC-DC, matching these VTC-DC to concrete VTC functionalities may foster VTC stakeholders' willingness to adopt and apply the talent-focused VTC requirements presented in current practice. For example, VTC decision makers, developers, and implementers may be more persuaded that particular system functionalities such as a blog, chat, forum and/or video conference may enable VTC *system interactivity*. The same may count for an especially implemented role concept which may improve VTC *system security*. On the other hand, VTC evaluators may profit from such a DC-functionality-matching as such a matching may support them in revealing the most appropriate VTC functionality in order to address particular VTC-DC, respectively talent-focused VTC requirements.

It is important to mention that at this stage of research the study is limited to the elicitation and prioritisation of VTC-DC from a talent point of view. Hence, researchers and practitioners now have an initial set of VTC-DC, i.e. (check-)list, at their disposal which may drive and ensure VTC success. However, more explicit implications have to be based on subsequent empirical studies which illustrate the influence of particular VTC-DC on VTC success based on specific VTC applications.

4   Conclusions

Within this paper an initial cross-national, talent-focused requirements analysis by use of the Delphi approach was carried out, yielding a systematic list of cross-national, well-defined system-, information-, and service-related VTC-DC, respectively requirements. In particular, the study shows a trend towards cross-national comparability of results. While the cross-national understanding of a basic set of VTC-DC is quite homogenous, the prioritisation of the VTC-DC shows slight differences. Based on these initial findings, further studies may now extend these results by more in-depth, large-scale surveys, taking a weighting and analysis of participants´ national contexts into account. A generalization of results would further require a normal distribution of survey participants, however, out of scope in this early stage of research. This hopefully will stimulate future cross-national research, especially quantitative studies, which may evaluate and deepen the insights offered but may also instruct future practical development, implementation and (continuous) improvement projects, while both streams may finally contribute to improve ([cross-/]national/global) VTC software applications in order to facilitate talent-"transfer" and development endeavours.

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