

vicos: The Virtual Community of Students

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Abstract

Since its inception, the internet has served as a virtual meeting place for people sharing common interests. These interest groups are nowadays called Virtual Communities. In this paper we elaborate the concept of a Virtual Community of Students (vicos) who consist of different interest groups in and around Swiss Universities of Applied Sciences (UAS). Vicos is a hybrid form of a community: it combines aspects of a Learning Community as well as of a Business Community. We describe the findings of a comprehensive empirical study which addressed the main target group (the students) and which resulted into the basic concept of vicos. The key contribution of this paper is the linkage between the conceptual community design of vicos and the business model which is needed to successfully operate vicos as a sustainable internet platform. We conclude with a description of future steps for vicos.

1 Introduction

Based on the theory of Virtual Communities and Business Webs, a concept for a virtual community of students (vicos) in Switzerland was developed. The underlying idea consists in developing a self-financing University Community out of the combination of a Learning Community and a Business Web. Hypotheses derived from theory were put to the test in a comprehensive field-study based on a representative survey among students at Swiss Universities of Applied Sciences. Relying on the most important findings, the researchers elaborated a prototype of vicos which will soon move into a productive stage. The aim of vicos is

the creation of a virtual community of students throughout all the Swiss Universities of Applied Sciences, which will be run on economic principles and thus be self-financing (in the long term). The present paper will set out the premises, hypotheses and findings of this practically-oriented research project.

1.1 The University of Applied Sciences

In 1996 a new type of university, the Swiss Universities of Applied Sciences (hereafter UAS), was introduced by a governmental decree [1]. The UAS have already been in existence in neighboring Germany for several decades. Their graduates are distinguished by a very practical education and this makes them increasingly popular with employers. In Switzerland these Universities evolved from already-existing institutions, the former Schools of Engineering, the Schools of Economics and Business Administration and the Schools for Design and Art. In the current build-up phase the fields of Social Work and Health are being added. In this way a significant institution could be created in a relatively short time. Whereas in 1999 there were some 11'000 students [2], and in the following year 2000, 16'000, in 2001 almost 25'000 students will be enrolled in Swiss UAS. These are distributed in seven UAS throughout the three language regions of Switzerland. Each individual UAS (which could also be called 'colleges') is autonomous. At undergraduate level as a rule three-year study programs are offered, which are comparable to an American Bachelor course of study.

The UAS offer approximately 220 courses of study at undergraduate level and 140 at graduate level. The total budget of the UAS amounts to about CHF 600 m. per year

[3]. A prerequisite for entry to the UAS is a professional/vocational or high school Maturity (school leaving certificate) plus at least one year's practice on the job. An important contributory element is the introduction of the so-called 'European Credit Transfer System' (ECTS). Through standardization and modularization the courses are being brought into line with European norms so that mutual recognition of degrees will promote the mobility of students within Switzerland and Europe. Despite these considerable efforts it is certainly not surprising that no mental identification with the Swiss UAS has been created in this short time. Those responsible, the authorities and the faculty all still identify strongly with the original colleges. Although Switzerland is a small country, the diverging influence of the geographical situation with three different language regions, urban and rural culture as well as the political system of so-called federalism should not be underestimated (see Figure 1)



No.	Name and language of UAS	Students 1999/2000
1	Berner Fachhochschule (German)	2415
2	Fachhochschule Nordwestschweiz (German)	2266
3	Fachhochschule Ostschweiz (German)	1748
4	Fachhochschule Zentralschweiz (German)	1009
5	Haute école spécialisée de Suisse occidentale (French)	4236
6	Scuola universitaria professionale della Svizzera italiana (Italian)	658
7	Fachhochschule Zürich (German)	4416

Figure 1. Swiss UAS

1.2 Idea of vicos

Against this background there arose in 1999 the idea of developing for students of these UAS spread throughout Switzerland a service binding them together across the geographical, language and cultural borders. The internet

and concepts of the 'virtual community' provide instruments and models which should make it at least theoretically possible to make a contribution to the development of a UAS identity at relatively small cost. In addition to the aim of creating an identity, this platform is supposed to offer practical support to students in many aspects of day-to-day student life, above all in the search for information. Vicos as a virtual community is more than a pure information-search platform of the sort that abounds in the internet. It enables the management of contents 'for students by students' and thereby above all supports interaction between the participants.

The present paper describes how this idea first evolved as a concept and then how it was implemented step by step with students of the UAS Basel.

1.3 Structure of the Paper

The paper is structured as follows. We elaborate the underlying concept of vicos – the Virtual Community of Students – explaining its theory and origins. We then expand on the methodology used to design the specific framework for vicos. We present the findings of our requirement analysis in the form of an empirical study among students in different Swiss Universities of Applied Sciences who represent our main target group. The findings of the study led to the service areas (thesis exchange, career forum, discussion forums, etc.) of the platform and the business model which we envision today to turn the platform into a fully operational and independent player in the Swiss university landscape. The paper concludes with the description of future steps for vicos.

2 Virtual Communities

2.1 Types of Communities

Internet Communities are as old as the Internet itself. The first forms of Virtual Communities were based on the enthusiasm of users who were able to meet and discuss over long distances [9]. At its inception, the Internet was a large community of like-minded people. Popular examples for socially-motivated communities are The WELL, Tripod, GeoCities, or Colony City. The main value of these communities lies in the creation and maintenance of loyalty between the participants.

The term "Virtual Community" can be looked at in several ways. Rheingold [15] deals with the emergence of socially-motivated communities of interest on the Internet. He describes Virtual Communities as "social aggregations that emerge from the Net when enough people carry on those

public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace." Hagel and Armstrong take a business perspective and cast virtual communities as "Virtual Enterprises" [8]. Many social communities on the Internet are opposed to the idea of commercialization but the authors argue that once these communities realize their full market potential they will be willing to engage in purchasing transactions.

In our paper we adopt both perspectives for vicos: socially motivated communities as well as communities with a business focus [16]. Vicos is a hybrid form because it combines aspects from private as well as from business life. We will use the following definition of Virtual Communities in this paper: "Virtual Communities describe the union between individuals or organizations who share common values and interests using electronic media to communicate within a shared semantical space on a regular basis. Their communication is thus independent from restrictions of time and place." [12; 15]

The proposed community hybrid extends the approach by Armstrong and Hagel [5] who, on the basis of the motivation of the members, distinguish only between four different types of Virtual Communities: Communities of Transaction, Interest, Fantasy and Relationship.

Vicos is a combination of two types of communities, Learning Community and Business Community. The main goal is to exchange information which supports the students in their effort to successfully finish their studies (the learning community). The vicos members also show, as confirmed by our empirical study, a great interest in business aspects like selling their theses, finding a good job, career planning, etc. (the business community). Besides the students, vicos also links business partners (companies offering jobs, sponsors, company researchers, etc.) to the platform.

In a virtual world where customers and sellers are anonymous, leading to a sense of alienation from each other (absence of face-to-face communication), some traditional business rules are no longer applicable. These circumstances cast new light on the concept of "identity" [20]. Since the partners have no physical contact in the "real world", some of the essential characteristics of face-to-face communication do not take effect [15; 21]. The proof of identity of the vicos operator is essential for the trust in the information contained in the platform.

Spar and Bussang [18] discuss the absence of established (conventional) rules on the Internet which according to their opinion leads to an uncertainty about the possible behavior of the business partner. They point out that Virtual Communities can help to develop a system of rules which have favorable effects on trust in the electronic business medium. The prevalence of communities is likely to supply a certain degree of security and trust [10; 6]. As

Figallo states, "Trust is the social lubricant that makes community possible" [7]. We argue that vicos can fulfill this role very well because it is a service "from students for students" which stems from the same environment as its members. For a further analysis of organization of communities in electronic media cf. [11].

Peppers and Rogers speak about "agent objectivity" [13] when they refer to the trust and confidence that arise from mutual member recommendation. According to them objectivity is a real selling proposition that can easily be achieved in the electronic medium.

With the conception of vicos it was clear from the outset that, despite the unequivocally non-commercial bias of the Learning Community, it should generate some economic income which would at least be sufficient for vicos to finance itself and develop. This is obviously why we should now turn to the narrower business aspects of a virtual community.

2.2 Business Webs

„In b-webs, internetworked, fluid – sometimes highly structured, sometimes amorphous – sets of contributors come together to create value for customers and wealth for their shareholders. In the most elegant of b-webs, each participant focuses on a limited set of core competencies, the things that it does best“ [19].

Tapscott et al. [19] indicate nine criteria which designate a b-web. Table 1 lists these features and applies them to the concept of vicos.

There are different aggregate levels of subgroups in the Swiss UAS. The highest level is represented by the seven UAS as defined by the Swiss government. Beneath that there is a further number of individual types of schools (business schools, engineering schools, art schools, etc), which can be very differently organized and structured from the geographical and administrative point of view. On another plane there are national competence networks and action programs (e.g. virtual campus) which place emphasis on a particular theme. With vicos, a national b-web is to be created which concentrates on a specific group, i.e. the students. Vicos respects existing structures without fundamentally touching or altering them. The structures will only be taken into consideration in the organization of vicos as far as it is necessary or efficient to reach the goal.

Figure 2 Outlines the vicos b-web with its various interest groups.

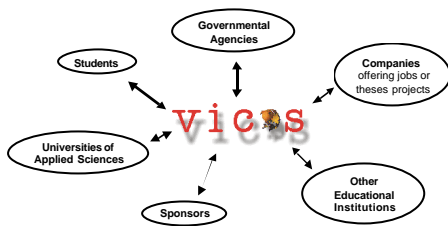


Figure 2: The vicos interest groups

Feature	B-webs according to Tapscott	B-web aspects of vicos
Internet infrastructure	B-Webs use the internet as their primary infrastructure for business communications and transactions.	The internet is the basic infrastructure of the vicos platform
Value proposition innovation	A b-web delivers a unique, new value proposition that renders the old way of doing things obsolete.	Vicos delivers a new value proposition that did not exist before and cannot be substituted without the internet.
Multi enterprise capability machine	A b-web marshals the contributions of many participating enterprises. B-web leaders rely on partners to maximize return on invested capital.	Vicos is a network of independent but highly connected local subgroups. Every subgroup contributes essential value to the network.
Five classes of participants	Customers , who not only receive but also contribute value to the b-web.	Students who actively interact and share information on the vicos platform. One example would be to upload and sell their thesis and search for relevant literature to help write their thesis and other student reports
	Context providers , the interface between the customer and the b-web. A context leads the choreography, value realization and rule-making activities of the system.	The vicos core team which operates the platform is the context provider for the community. This group of students defines the rules and monitors the processes thus establishing the basic degree of trust among the members.
	Content providers design, make, and deliver the „intrinsic“ forms of value-goods, services or information that satisfy customer needs.	The core team supplies the basic contents of the platform. Content providers (= members) are from different universities or other third parties (e.g. the Swiss university administration, HR departments, etc.).
	Commerce services providers enable the flow of business, including transactions and financial management, security and privacy, information and knowledge management, logistics and delivery, and regulatory services.	Commercial partners of Ecademy (the Swiss Competence Network for E-Business and E-Government) and other interested companies represent the commerce services providers of vicos (e.g. Swisscom, yellowworld, UBS).
	Infrastructure providers deliver communications and computing, electronic and physical records, roads, buildings, offices, and the like.	The vicos platform focuses on the context and services. The infrastructure is provided by the hosting University.
Coopetition	B-web participants cooperate and compete with one another.	Every University of Applied Sciences is a partner and a competitor at the same time. In some way even students compete with each other (grades, job market, etc.). Vicos provides a unique place to cooperate for all parties involved.
Customer-Centricity	Rather than making, then selling, b-webs focus on customer value. They build mutual relationships and respond to individual customers at the point of need.	Member centricity is <i>the USP</i> of vicos. The platform creates a new value for customers (students) by the creation of a joint identity and the possibility for the exchange of goods and services.
Context reigns	The context provider manages customer relationships and choreographs the value-creating activities of the entire system.	This is the role of the core team of vicos.
Rules and standards	Key participants know and adhere to the b-web's rules of engagement.	At every university there is a vicos team who is responsible for the local community.
Bathed in knowledge	B-web participants exchange a variety of data, information and knowledge.	Knowledge exchange is the core business of vicos.

3 Methodology

3.1 Marketing-oriented Approach

Field research was carried out based on a conceptual model for vicos. The aim of this research was the development of a concept for vicos in line with market conditions. The investigation concentrated on two specific areas.

- First a survey of needs established the size of the sales market, or the primary target group of vicos, i.e. students at Swiss UAS.
- The second area of market research was devoted to an analysis of the competition. In addition to obtaining information about other market participants and potential rivals, the purpose was to ensure that, if vicos were introduced, it would not stand in direct competition to an already-existing community.

3.2 Target Group

The clear focusing on the target group of students at the UAS made it possible to carry out a representative, quantitative survey with a view to cutting down the work and the fact that vicos is only going to be implemented in German in the early phase, the target group was limited to students at the German-speaking UAS. This population included about 7'800 students in 1999, (70% of all students at UAS) [2]. Three thousand letters and 220 emails were sent to students. Over 1'100 questionnaires were filled in, representing an astoundingly high response rate. This surprisingly high number compelled the research team to limit the evaluation to approx. 60% of all responses received. We achieved a high response rate of 60% with more than 1'100 questionnaires completed.

3.2.1 Structure of the Sample

The average age of those asked was around 24.2 years, 0.5% were under 20, 60.8% between 20 and 25, 29.1% between 26 and 30 and 7.1% over 30. 74% of the sample were men. According to official statistics the proportion of men in 2001 was 74.3%, which indicates that our sample corresponded to the average UAS student profile with regard to gender [4].

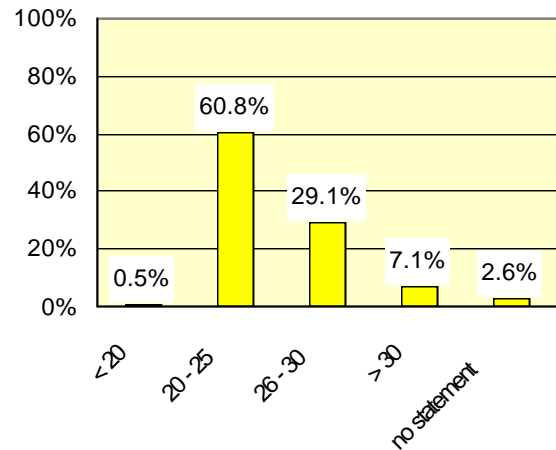
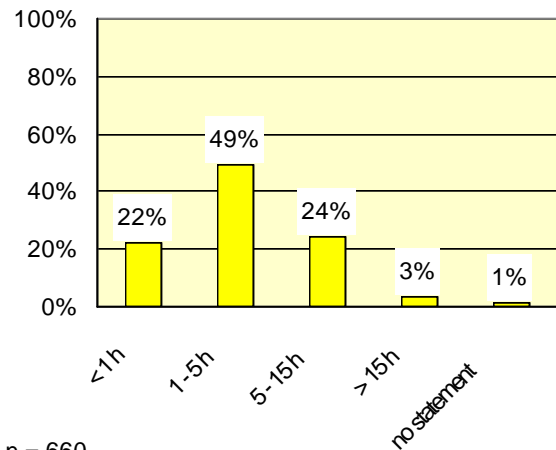


Figure 3: Age of participants

3.2.2 Knowledge and Behavior on the Internet

70% of those asked gave their own email address, which will remain at vicos's disposal for further direct communication. Regarding their surfing habits 50% of the sample claimed to surf between 1 and 5 hours a week. Average weekly surfing time is approx. 2.5 hours.



n = 660

Figure 4: How much time do you spend surfing the Internet per week?

With reference to the analysis of the competition, students were also asked if they already knew communities on the Internet. A mere 7% (exactly) of the sample answered this question positively, but only twelve communities were named. These were investigated more comprehensively along with others in the analysis of the competition (compare section 3.3).

3.2.3 Interest and Need for a Community of Students

The crucial questions for the project team were those relating to the fundamental interest in a community of students and the concrete demands or requirements which the students wish to see fulfilled there. 73% answered the question about the need for such a community positively, 22% were neutral and only 3% found it superfluous (compare Figure 5).

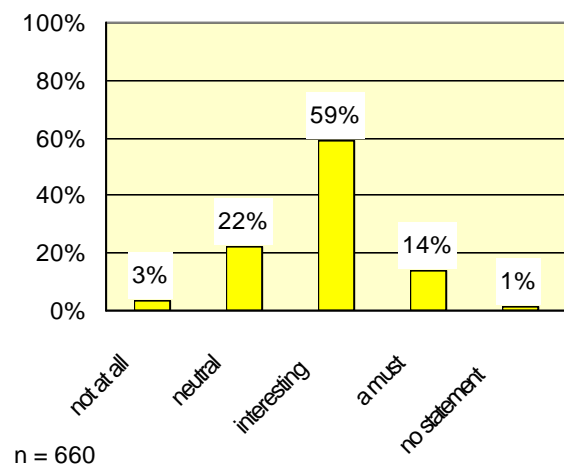


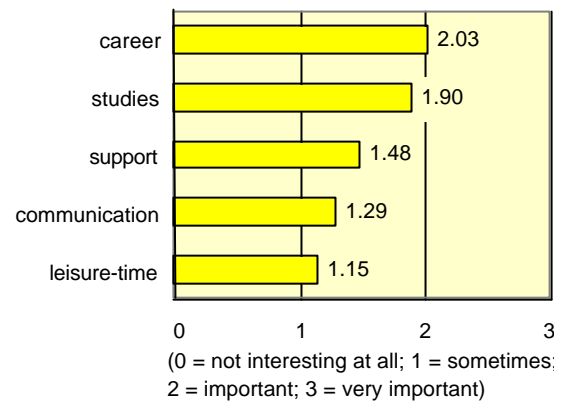
Figure 5: Do you think that a virtual community for students of applied sciences in Switzerland is necessary?

The question about the requirements was carried out in two steps. First, possible offerings were elicited through interviews, from which a list of offerings was drawn up. These lists were presented to the students in the questionnaire and they were able to evaluate the offerings. The relevant question was: What kind of information would you like to find on a website for students? The individual areas were evaluated on a scale from: 0 = not interesting at all; 1 = sometimes; 2 = important; 3 = very important. Two offerings were evaluated at over 2: 'archive of theses and papers' (2.45) and 'jobs for graduates' (2.16). The least interest was awoken with 'offers for leisure-time activities' (0.92) and 'chat room' (0.91) (compare fig. 7).

The analysis of the statements arranged in groups is interesting. Five thematic clusters were drawn up.

- Studies
- Support
- Communication
- Career
- Leisure-time

The order of the evaluation was surprising. Career and studies were unequivocally the most important themes for the sample. Support and communication followed at a clear distance and leisure-time was considered the most unimportant. The students thereby showed clearly their aims, which were fundamental for the implementation of the idea of a self-financing community, as stated at the outset (compare fig. 6).



- | | |
|-------------------------------------|------------------------------------|
| career | communication |
| jobs for graduates | link collection |
| training opportunities | bulletin board |
| studies | personal web-based |
| archive of theses and papers | e-mail account |
| invitation to thesis | personal folder |
| private lessons | leisure-time |
| support | holiday jobs |
| addresses of contacts | second hand shop |
| information about exchange programs | offers for leisure-time activities |
| places at the university | chat room |
| housing market | |

Figure 6: grouped requirements

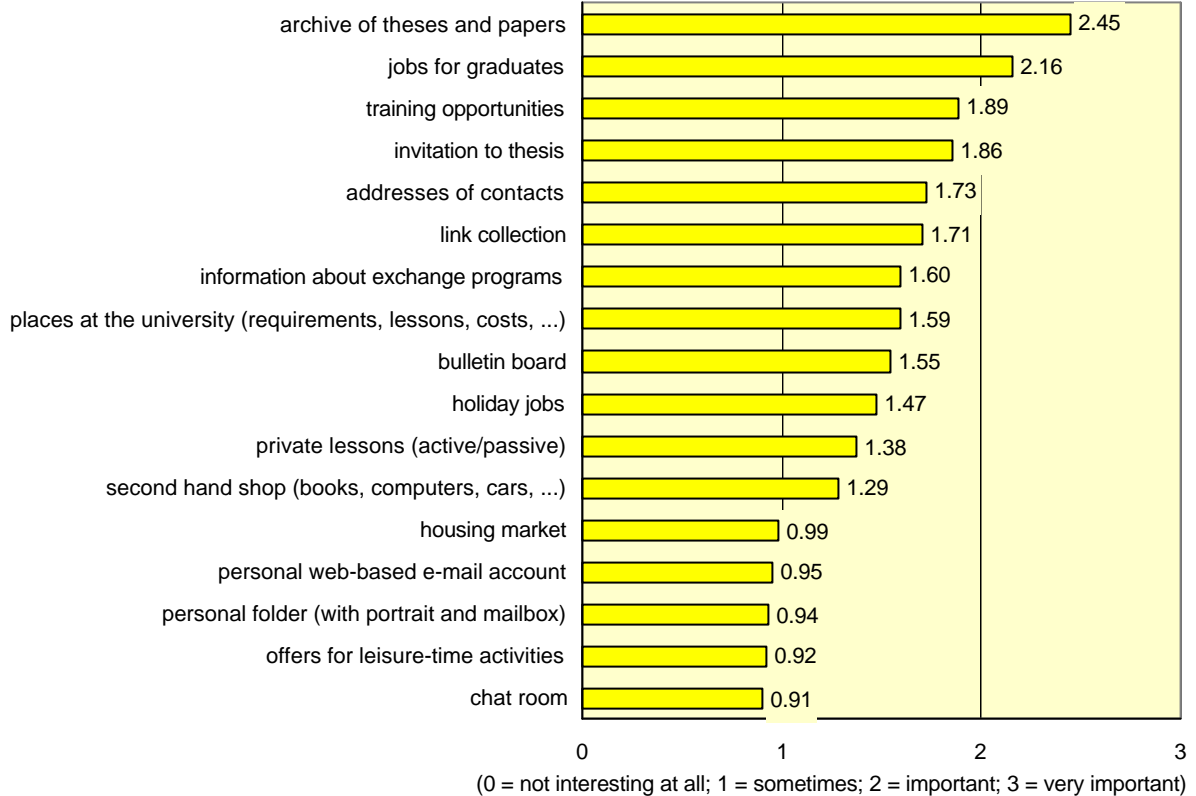


Figure 7: What kind of information or services would you like to find on a website for students?

3.3 Analysis of the Competition

An important step in the analysis of the competition was to collect information about other market players and potential rivals from the students themselves. In addition websites with the following (German and English) search names: “community”, “virtual community”, “ Studentengemeinschaft” as well as “Gemeinschaftsplattform”.

For the platform to be considered relevant and taken into account in the assessment, the following three points had to be fulfilled:

1. The user is able to file documents on the platform (interactivity)
2. The platform addresses a clear target group
3. The purpose of the platform is to serve the user

After this, the websites were evaluated according to quantitative and qualitative criteria. The list of the quantitative features was drawn up in agreement with the questionnaire. In the assessment the ranking of the survey was

noted as a weighting. The qualitative features were evaluated subjectively by the assessor of the website and noted with regards sufficient quality or availability. The resulting ranking was like a snapshot and hinted at possible design variations for vicos. Furthermore it could be ascertained that there is no website that offers the contents aspired to by vicos or which is specifically directed to the sought-after target group.

Website address	Qualitative features	Quantitative features	Ranking
http://www-usercgi.tu-chemnitz.de/muku	1; 4; 5; 6; 8; 9;	1; 2; 3; 5; 6; 7; 8; 11; 12; 13; 14;	1
http://www.wateronline.com	1; 4; 5; 6; 8; 9;	1; 2; 3; 5; 6; 7; 8; 11; 12; 13; 14;	2
http://www.virtual-community.com	3; 5; 6; 8; 9;	1; 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 13; 14;	3
http://webhelp.com/home.html	2; 3; 8; 9;	1; 2; 3; 4; 5; 6; 7; 8; 10; 11; 12; 13; 14;	4
http://www.musenalp.ch	3; 6; 9;	1; 2; 5; 12; 13; 14;	5

Legend:
Qualitative Features
1.Topicality, 2. Easy to survey, 3. Good design/layout, 4. User friendliness, 5. Good and important information, 6. Clear and simple structure, 7. Good links, 8. Links to UAS and Univs
Quantitative Features
1.Archives(Theses and project work), 2. Appointments, 3. Further education/training, 4. Thesis advertisements, 5. UAS contact addresses , 6. Link collection, 7. Info. about Erasmus program, 8. Study places (courses etc.), 9. Notice board, 10. Top Graphics, 11. Usefulness for studies, 12. Search engines, 13. News, 14. (no banners)

Table 3: Analysis of community websites. Ranking 1-5

3.4 Findings

The most important finding which resulted from the assessment of the survey was that the students at Swiss UAS show a keen interest in a tailor-made community website. Such a community must satisfy specific requirements in the ‘career and studies’ category. These needs are not being met in the desired form and make-up by existing websites. What is interesting is that the keenest interest lies in an offering which can only be satisfied by a community; the archive of thesis and papers (Up- and Download of PDF Files) can only be set up by the voluntary cooperation of as many students as possible.

The most important ‘career’ category opens up possibilities for the financing of vicos, since in the field of ‘job offers for graduates’ and ‘training opportunities’ there are sufficient commercial providers available interested in such a specific target group. Also well received were the offerings in the ‘studies and support’ category. In this respect, with the upcoming introduction of modular study courses and of the ECTS (European Credit Transfer System) vicos could play an important role in the dissemination of information about courses of study offered. In particular the community could offer a service of reviews and ratings (recommender system) extending beyond the official information channels, such as e.g. Amazon.com has successfully practiced for years. In a typical recommender system people provide recommendations as inputs, which the system then aggregates and directs to appropriate recipients [14]. In some cases the primary transformation is in the aggregation; in others the system’s value lies in its ability to make good matches between the recommenders and those seeking recommendations.

Additional offers in the leisure category clearly attract less interest and are thus not so important. The situation as regards ‘communications’ remains somewhat unclear. Here, basically there are still ways of offering community members further services, but these are less target-oriented and cannot be classified as having a lasting competitive advantage.

4 Vicos Business Model

4.1 Prototype

As mentioned above, vicos is directed towards various target groups. Foremost are students at the UAS, to which can be added parties interested in channels of communication to these students, for example, companies looking for staff, providers of training courses, sponsors for target-oriented marketing and others.

The first prototype included those service areas which the empirical study showed to be the most interesting. This consists primarily of five areas:

1. *A thesis market*
in which authors of works of all types (theses, projects, seminar papers, etc) can load their findings onto the vicos platform in the form of PDF files. Assisted by comprehensive search aids, seekers of information can comb the database and download the PDF file.
2. *A job market*
in which providers and seekers are matched. Students will be able to feed in their graduate profiles and references online. Companies can search this database ac-

ording to different criteria such as desired place of work and position, availability, field of study, majors, degree, etc and gather short-lists of graduates. In addition companies can advertise appointments on vicos.

3. *A further education and training forum*
in which educational and training institutions can post information about courses and educational opportunities. In this way graduates can continue their further education after going back to work.
4. *A discussion forum*
in which all aspects of study at a UAS can be discussed according to various thematic areas.
5. *A black board*
with second hand shop, accommodation market, events, etc.

The vicos prototype can be accessed at www.vicos.ch. However, the service areas are closed at present pending an application for public funding.

4.2 Business Model

A business plan has been elaborated for vicos which serves as a blueprint for further steps in its implementation. At this point only the most important financial aspects will be detailed briefly. The project is planned to be initiated, and in the start phase run, with the help of students under the supervision of qualified assistants. In this way the annually-budgeted costs will amount to a few hundred thousand francs. Experience has shown that it is considerably easier to budget the costs than the earnings.

4.2.1 Start-up Financing

As the idea of vicos is not primarily to make economic returns, but to support the creation of an identity for the Swiss UAS, we are confident that at least the initial investment and the build-up phase will be financed through government contributions. Sponsors interested in being close to the target group and wishing to access it even during the period of study through vicos represent a further source of financing. Foremost here are the larger corporations which will vie for the future graduates of the Swiss UAS as potential employees.

4.2.2 Earnings

To run a community in the middle and long term, it must generate earnings to finance investments, operational costs and future development. These earnings can be imagined coming from several sources:

Membership and user fees

There is very little willingness to pay a subscription for internet offers; in general providers refrain from charging. It would also be unwise for the growth of the community to limit membership by such a hurdle.

Sale of services

Vicos can act as intermediary in the areas of 'career', studies' and 'support' and thus generate earnings from third parties. With this in mind, offerings are planned and as previously mentioned also already partially implemented: graduate profile, job market, training and provision of these and projects. For example, companies can subscribe and thereby come into direct contact with students looking for jobs. In the job market we are talking about an advertising service through which companies can aim job offers at specific targets. Further education offerings are also planned as advertisements, and in a second phase they could be combined with a rating system with a quality appraisal of the offerings by members. The fourth service is a mart of student assignments, which will be placed on vicos by the students. On sale to a third party, the authors receive a royalty of 50% of the sale price each time.

Sponsoring, advertising

General sponsorship contributions, which are more of a PR nature for the donors, should lead to a fixed basic contribution for vicos. Despite the general decline in earnings from banner advertising this method can be relied upon to generate a certain income thanks to the focus on a specific target group.

Public funding

There are many points of contact between the authorities and the UAS. For this reason one can envisage vicos taking over certain information tasks for the university authorities and being paid for it. In cooperation with the 'Ecademy' competence network, which is also organized on a Swiss-wide basis, such a sharing of roles would be thoroughly conceivable.

5 Conclusions and Future Steps

An investigation of the theoretically developed model for a virtual community of students (vicos) for the Swiss Universities of Applied Sciences on the basis of a field-study has shown that the range of offerings of the community is to be concentrated on the areas of 'career' and 'studies'. Here information and material about the study course, job offers and further education have first priority. This specific service can only be supplied by a dedicated provider who can focus on the target group and can moti-

vate it to contribute actively to the community. Thus the added value of the community will become a USP which will be difficult for rivals to imitate. If vicos succeeds, by launching such a service, in gaining a large share of students as members it will add value to the UAS Switzerland. It can also serve as an information and communication instrument for the authorities. It is furthermore imaginable that the presently missing identification among students with the institution could be developed through an Alumni organization coupled to vicos. Especially in view of internationalization and the relatively small size of the individual schools an all-Swiss initiative makes far more sense than individual projects at school or regional level. Talks have already been held with various sponsors and application for funds made to the federal government. The aim of the organizers is to get vicos online within the next year.

Acknowledgements

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