

Business Models on the Web: Application to Most Popular Sites and Related Trends

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Abstract: The objectives of this paper are to provide a schema of classification for business on the web – named BM*Web - based on some parameters which are considered to have structural value and to validate it against a significant data set. Interesting results emerge from the statistical analysis, both in terms of original correspondences, and in terms of trend expectations which have then been borne out by actual developments in the online business world. These are particularly evident in the case of community-based businesses.

1. Introduction

Existing categorisations for web-based business models can be organised according to immediately apparent elements, in the sense that these are features that can be observed on the surface of the site by a casual user. However, there is a very large number of such features that could be used as discriminants. Some classifications are based on product or service category, business organisation, type of audience, technology used, etc.

In fact, from an analytical point of view, the best categorisations are those based on a set of pre-defined guidelines or principles. Such principles, in their turn, must be as coherent as possible with respect to some fundamental question (or need, or potential use) one may have. In other words, it is necessary to know first what the purpose of the investigation is, and then use the features most suitable for that purpose. Furthermore, as well as being well-founded in the way just described, these features must have suitable internal properties, i.e. be coherent, be minimal, avoid ad-hocness, etc. Finally, they must be linked via causal connections to observable relevant facts, and must be able to be used for causally inferring new observable phenomena.

In this paper we introduce a new schema, an original multidimensional framework – named BM*Web – that combines issues already present in existing schema describing business models, with innovative aspects. The two main objectives are (a) to provide a schema of classification for business on the web based on some structural parameters and (b) to validate it against a significant data set and to report some business cases that confirm some of the trends and expectations emerged from the project.

The structure of the paper is as following: section 2 introduces related work to establish the context in which the BM*Web framework was defined; section 3 describes our methodology and its application on a large dataset of web sites and reports some results of the ongoing study; section 4 describes the most interesting business cases; finally, section 5 gives some recommendations.

2. Related Work

Research on web-based BM addresses questions ranging from the definition of business models to the changes due to the inception of the Web and its impact on the economics fundamentals. Focusing on studies related to analysis or classification of BM on the Web, many authors tried to define a taxonomy, among them Timmers [1] and Rappa [2], or even an ontology [3].

Classifications for web-based BMs are founded on a set of criteria of different dimensions and complexity. For example in [2] we have 9 BMs, which are then articulated in 41 different sub-categories, according to the companies' value proposition and the revenues. Other schemas integrate different sets of parameters introducing economics concepts, related to Porter's value chain, e.g., [4].

An interesting comparison among the most relevant contributions is given in [5]. For our goal it is important to cite here those that refer to parameters taken into account by the BM*Web framework.

In particular, the Needs vs. Technology parameter is related to the innovation introduced by the BM and is defined in respect to how the technology satisfies known or unknown users' needs or requirements. One of the first authors that classified BM according to innovation and functional integration was Timmers [6], however, none of the existing schema does explicitly relate the role of technology to the 'satisfaction' of expressed or unexpressed needs of the customer.

To describe a BM, financial aspects are taken into consideration by all authors as they are deeply related to the BM concept. For our approach, we have defined the parameters according to an almost shared set of values; the most critical point was to adopt a level of detail adequate to address the trade-off between being able to identify the different income channels from the client-side and to get useful information.

However, the most largely and deeply investigate aspect is the presence of a web community - most often referred as virtual or online community, that is claimed as relevant for a successful BM in many classification schema; among them [1], [2], [7]. However, the community is usually introduced as one of the elementary web-based BMs, or as a BM in itself and not as one of the parameters necessary to fully define BMs for the Web. Tapscott and Williams [8] identified seven new models of mass collaboration that are completely changing scenarios for large and small companies according to their motto, 'collaborate or perish', towards the creation of the collaboration economy: peer pioneers, ideagoras, prosumers, new alexandrian, platform of participation, global plant floor, wiki workplace. In all these models web technologies are used to change the role of participants – companies and customers - and to support a wide range of online relationships: however, authors do not analytically explain the differences among the identified models. Also, there are not systematic studies about the role of web communities for existing businesses. It is worth naming here the Forum One Communication that started to analyse the community ROI (Return on Investment); according to the last year survey, only 22% of respondents (companies whose BM is based on one or more web communities) had clear ROI Model, but establishing a ROI model was a priority for most of them in the near term [9]. Other statistics gathered by the Forum One Communication support the economics advantages of web communities, e.g. for community users vs. non-community users it stands out that they: (a) remain customers 50% longer; (b) spend 54% more; (c) visit nine times more often; (d) have four times as many page views; while in customer support, live interaction costs 87% more per transaction on average than forums and other web self-service options; and cost per interaction averages \$12 via the contact center versus \$0.25 via self-service options (<http://redplasticmonkey.wordpress.com/2007/05/08/online-community-roi>).

3. Methodology

3.1 The BM*Web Framework

Starting from the basic question “What characterises business models on the web?”, a linguistic and logical analysis is then carried out, which produces four groups of characterising features: the nature of the market, the novelty of the offer, the type of income and the existence and form of community [10], [11]. The nature of the market is analysed through well-established categories such as B2C and B2B, as well as some which play a special role in online businesses such as C2C and C2B2C. The novelty of the offer is analysed using a scheme based on the existence of perceived needs and solutions. The type of income is classified according to standard criteria, such as ‘single payment’, ‘subscription’, ‘intermediation’, ‘advertising’, etc. Finally, the community element is analysed in terms of the type of exchange between members and of the level of control over the community. Table 1 reports the version applied in the study described in this paper.

Table 1. The BM*Web Framework

PARAMETER	VARIABLE
Market of reference	B2B, B2C, B2(B)2C, C2(B)2C, C2B, C2C
Needs vs. Technology	Copy of business off-line, New answer to existing needs, New answer to unexpressed needs
Income	Subscription, Intermediation, Advertising, Single payment, Other (e.g., donation, tax)
Community	<u>Exchange</u> : information, commercial, complex <u>Employees’ control</u> : minimum, light, specific <u>Members’ control</u> : minimum, light, specific

The parameters in the table have been refined in an iterative process supported by a web-based application developed to share evaluations given by three analysts, and critical issues were used to identify the parameters and their variables, and to render explicit the application criteria. For example, in the first version of the framework, income categories included a higher number of types and subtypes and have been sorted out and aggregated in different ways until an unambiguous and applicable set was found (e.g., affiliation was included in advertising as it is not easy to clearly identify this form of income using only client-side information).

The first dimension, market of reference, is specified adding to the four traditional acronyms – B2B, B2C, C2B and C2C – two acronyms - B2(B)2C, C2(B)2C – that allow to distinguish those businesses that play an intermediary role for other businesses or customers vs. customers. That happens for example for web sites like Expedia or Lastminute (B2(B)2C); and Ebay and Second Life (C2(B)2C) (for most of the web sites cited in this paper, the URL can be obtained in the following way: www.<name_of_the_company_or_service>.com; also for almost all of them there exist “national” versions that are automatically proposed to the users; otherwise URL is given in the text without “http://”). In some cases the same web site includes different roles – Ebay for example includes also B2(B)2C services: to take into account these cases the analyst can specify both variables, assigning weights according to their relevance for the business.

The second and fourth parameters are the most innovative in respect of the existing schema. In particular, for needs vs. technology it is necessary to check if a web site business represents an on-line copy of an off-line business; otherwise, if it represents a new answer to users’ needs, we check if these needs were already organized and rendered explicit in some form of the traditional business. In the first category we found newspapers web sites (e.g., New York Times) or encyclopaedia (e.g., Softpedia; while Ebay is an

example of a new answer to known users' needs. The last category includes many web communities like Myspace, Secondlife and Youtube, but also web sites offering hosting or communication services to users or developers (e.g., Tripod, Torrentz).

Web communities are analysed at two different levels: exchange among users and control of the interactions. As regard exchanges, users of a web community usually communicate to share information (e.g., Myspace, Youtube); if there is an exchange of real money, the exchange is classified as commercial (e.g., Ebay, PartyPoker); if the web site support complex interactions, members of the community can also exchange virtual objects and assume interacting behaviour, as happen in role playing sites (e.g., Everquest or Geocities).

The interactions among members of a web community can be controlled by employees or by members. In both cases, the BM*Web framework distinguishes three levels of control: minimum, if the only form of control is the presence of recommendations that members have to respect to participate in the community; light, if the web sites check contents by filtering those that are not 'adequate' for the web site; a specific control is based on more strict forms of control and are usually present if there are commercial exchanges among the users. Members' control mechanisms are possible in those web community that distinguish different roles for their member and some of them become 'mentors' or 'expert' thanks to their contributions, as happen for example in the editorial organization of Wikipedia.

3.2 The Study

For the research referred in this paper, the BM*Web framework has been applied to a set of 200 web sites identified extracting from the free list of Global Top 500 web sites given by Alexa (www.alexa.com, 10 June 2006) those in English or with an English version, without pornography or illegal content; for portals a procedure to select the three most relevant sections was applied. The final set was then integrated with a few interesting web sites to be able to validate the framework on all its parameters.

The main results of the study can be summarised as follows:

- Markets of reference are 49% B2C, 31% C2C (always corresponding to web communities) and 10% B2B. The values change significantly for sites with communities (Figure 1).

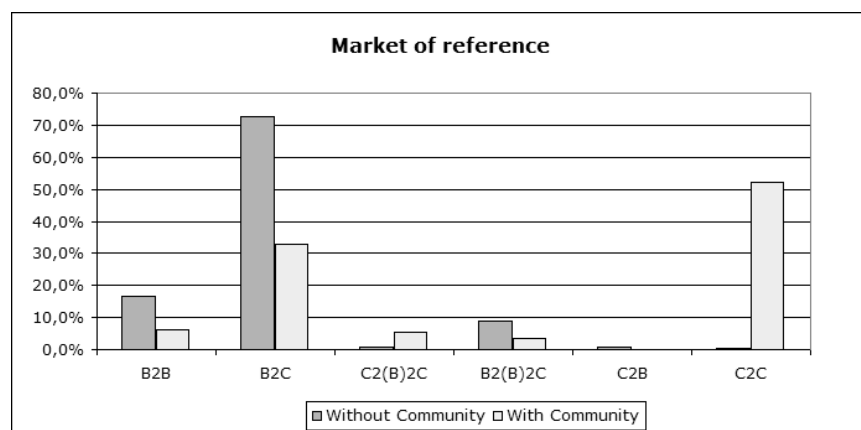


Figure 1 – Market of Reference

- 59% of the web businesses have an active web community; 90% are informative communities; 6% commercial and 4% include complex exchanges. In informative communities, both employees' and member's controls are mainly at the second level (minimum: 63% e 68%, respectively); while for commercial communities, employees' controls are the most important with a 57% of specific controls.

- The most widespread form of income is advertising (46%), then comes subscription (19%) and single payment (18%). But focusing on the web sites with a community, advertising increases from 47% to 52%, confirming the value attributed by analysts to web community (Figure 2).
- The number of income channels is higher for community web sites; also, while for informative communities 48% of the web sites have only one form of income, for commercial and complex communities the percentages change.
- In the general data set, the dominant forms with respect to innovation/needs novelty are the traditional copy-of-business-offline and the totally innovative response to new needs. However, when restricted to the sites with community, the totally innovative response becomes completely dominant.

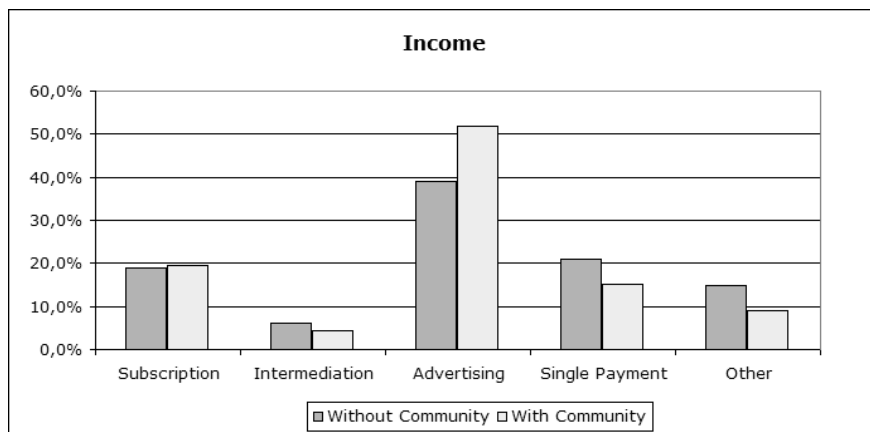


Figure 2 – Income With and Without Community

- Needs vs. technology are distributed in a more uniform way: 36% of the web businesses are a copy of an offline business; 22% answer in a new way to explicit needs and 42% to un-expressed needs. But, again, these percentages change for web sites with and without a community (respectively: 24%, 22%, 54%; 54%, 22%, 24%). (Figure 3).

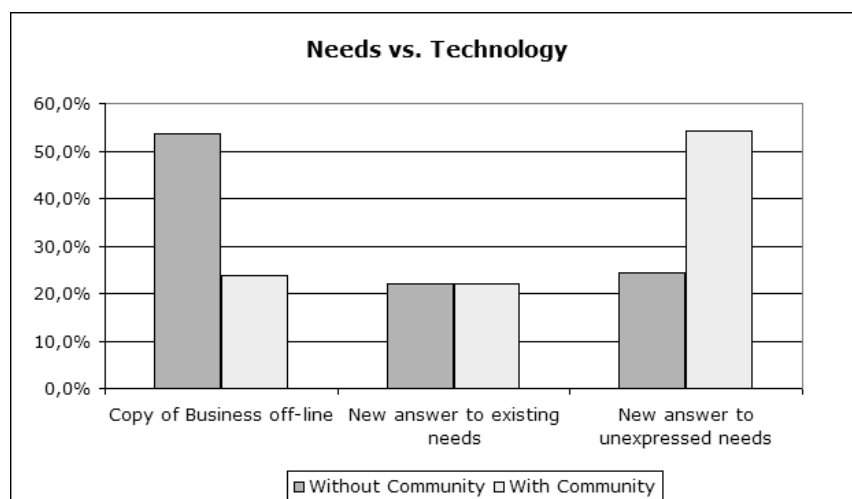


Figure 3 – Needs vs. Technology

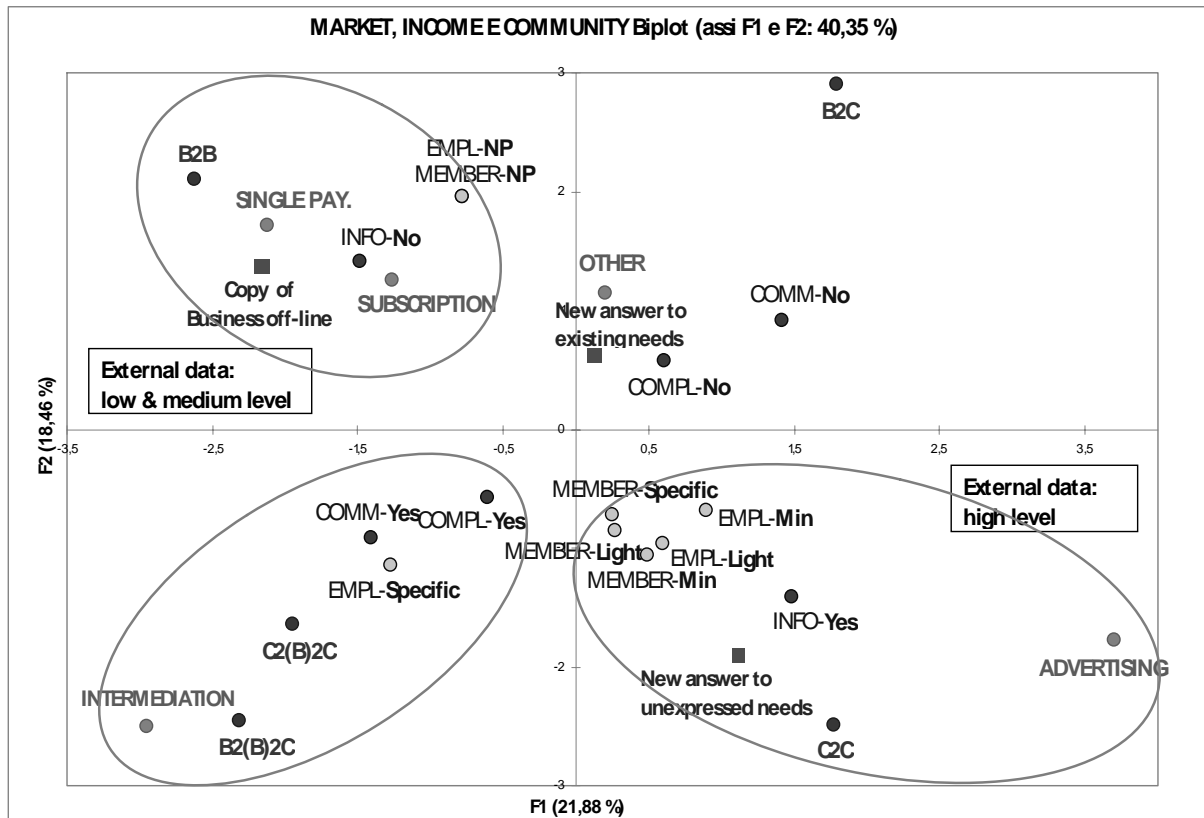


Figure 4 – Three Clusters of Points Related to Successful Business Model

- Figure 4 above shows the results of a multivariate statistical analysis applied to all variables together: it is apparent that two major groupings appear, representing two different successful strategies for business online.

4. Business Cases Description

Some of the trends and expectations emerged from this analysis have already been supported by recent developments. The list which follows contains the main cases. Some cases are directly based in the European online market; other applies to both European and USA markets; other still are taken from the USA market, but their implications apply to the European frame as well. They all underline the importance of community for successful online business, especially those with highly innovative products/services, and the related move towards forms of income connected to community, as forecast by our schema.

European cases:

- Extension to virtual reality of off-line legal safeguard (successful Habbo prosecution against virtual theft): recently Habbo has launched a successful prosecution for stealing of virtual objects in its virtual world, creating a precedent for the introduction of off-line legal safeguards to the virtual reality worlds (news.bbc.co.uk/1/hi/technology/7094764.stm); similarly, there have been attempt in Germany to lauch prosecutions for sexual harassment and rape on Second Life (www.dw-world.de/dw/article/0,2144,2481582,00.html).
- Lack of resilience of pure-play online retailers in absence of community barriers (off-line retailers with on-line presence taking more than 50% of online retail market in UK from Oct. 2007): Hitwise data for the online UK market show that pure-play retailers tend to lose their first-mover advantage in absence of a community and are liable to be overtaken by brick-and-mortar competitors adding an online presence to their offline convenience (www.hitwise.co.uk/press-center/hitwiseHS2004/hotshop.php). This

shows that in absence of community, offline players have an advantage in traditional markets, as predicted by our schema.

- Lack of resilience of dominant players when attacked by new community based ones (more than 50% of email in UK from Oct. 2007 originated from social networks rather than Hotmail, Yahoo, Gmail, etc. according to Hitwise): even free services (such as email) offered by dominant players have lost more than 50% of their traffic to social network, showing that most of the email use is within circles of friends which are best reproduced inside social networks (weblogs.hitwise.com/robin-goad/2007/11/social_networks_overtake_webma.html). This shows that the community factors, in innovative context, is totally dominant with respect to other elements, e.g. market dominance, financial power etc.
- Extension of user investment as a barrier to exit (Girland, Ebay, PartyPoker). This is a predicted trend for sites where the community is the main strategic advantage.
European/USA cases:
 - General increase of integrated advertising (Girland, Second Life, Google, etc.): the general increase in integrated advertising (i.e. advertising which merges seamlessly with the content), and its premium value wrt traditional formats (banners, skyscrapers, overlays etc.) shows the importance of fitting in with the user needs and goals (see e.g., www.kzero.co.uk/blog/?p=783).
 - Resilience of established communities based on old technology with respect to those with more advanced technology (e.g. Habbo, Girland v. Second Life): Habbo works on a VR model based on block-world using shockwave; Girland uses a VR 2D+ system (2 Dimensional plus) based on Flash: these systems are still competing, although there are more advanced 3D (three Dimensional) VR such as Second Life; this shows that the user-investment in the site is a formidable barrier to exit, and also that technical complexity may be a barrier to entry for many users.
USA cases:
 - Move of existing businesses towards an internal community (Amazon) or towards acquiring an external one (Google, News Corp): Amazon has modified its business model by adding a marketplace for second-hand items, which is a kind of specialised Ebay community (www.amazonservices.com/promerchant/?ld=AZSOAMakeM); News Corp has acquired Myspace, moving from newspapers and broadcasting to social networks (www.nytimes.com/2005/07/18/business/18cnd-newscorp.html), followed by Google acquiring YouTube (www.nytimes.com/2006/10/09/business/09cnd-deal.html?ex=1318046400&en=d3f60bb3f976cfd0&ei=5088&partner=rssnyt&emc=rss) and more recently launching Lively as an alternative to VR (Virtual Reality) communities such as Second Life (ap.google.com/article/ALeqM5hwhfQnhC-NEKfVqcbcWHPE8L2k7dwD91QABG81).
 - Move from gaming to community gaming (Sims: thesims2.co.uk/pages.view_frontpage.asp), and extension of community aspects in multi-players gaming (Everquest): The Sims started as single-player program, then it moved to multi-players (www.wired.com/wired/archive/10.11/simcity.html) online and now it has added community elements to it (thesims2.ea.com/community/index.php?pid=Community); Everquest has added external community aspects (e.g. external marketplaces for magic items and characters: forums.station.sony.com/eq/forums/list.m).
 - Move from pure P2P (Peer to Peer) to intermediation (new Napster): originally Napster was a pure P2P; following the adverse trial judgements, it has evolved into a legal tool to sell music online (www.paidcontent.org/entry/419-napster-joins-the-mp3-game-6-million-tracks-all-majors-signed-on).

- Move from single payment to subscription (Ebay): Ebay has recently added premium services for its shop which involve a subscription payment as well as the intermediation fee (pages.ebay.com/storefronts/Subscriptions.html).
- Move of community-based creation models from compilation to search (Wikipedia's move into search engines): the recent announcement of a search engine based on Wikipedia shows that the community-based model of content creation is now strong enough to make it possible a challenge to the most sophisticated statistical engines for search (technology.timesonline.co.uk/tol/news/tech_and_web/article1264117.ece).

5. Conclusions and Summary Recommendations

The application of the model to the selected sites shows its usefulness against the given criteria: in particular, it is suggested that the model works efficiently, in that it explains various observed phenomena, such as the expansion of communities across most successful sites, the convergence towards some income types (especially intermediation and subscription), the evolution of advertisement towards integrated models (again, particularly suited to communities), and the vulnerability of some dominant business in absence of community. Some of these processes had been forecast by the proposed model and then observed subsequently in the unfolding online business world. The model also produces some unexpected results, in that it discriminates strongly between businesses which appear to be closely related (e.g. on a product type classification), while showing remarkable statistical correlation between apparently highly different businesses. It is also suggested that this shows the useful difference between surface and structural analysis, and furthermore that some action suggestions are not sector-dependent, and as such even more valuable to business leaders.

The main recommendation emerging from the study is that there are different ways for businesses online to be successful, depending on the interplay of the various factors observed: so, it is not important in itself the presence of community or the degree of innovation, but the fact that the set of parameters together be in the appropriate range for the chosen type of online business.

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