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The Abundance of Simple Business Models on the World Wide Web

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Abstract

The World Wide Web is complex, dynamic and relentlessly changing. This article discusses new findings regarding the conduct of business from within the environment of the World Wide Web itself. We identify new business models evolving in the Web environment. These models utilise simple business strategies and form identifiable categories exhibiting increasing complexity and sophistication suggesting a hierarchical classification scheme to distinguish the categories. The simplest business models redirect Web users to other Websites and reimburse the domain name owner on a pay per click basis. It is only by studying these phenomena from within the context of the Web itself that we can discover and understand the variety of new forms of businesses evolving there.

Introduction

Despite considerable research activity describing World Wide Web (Web) end users and their characteristics (Lebo et al. 2002; Lenhart et al. 2003), there is little information regarding the demographics of Web businesses themselves. Much of the existing e-business literature has been fashioned from a perspective which is external to the Web, frequently focusing on material world companies which may or may not have established a Web presence.

There is a gap in the literature with regard to characteristics of internal Web businesses and the environment in which they conduct their business. We view the identification of such demographic information about Web businesses as a necessary first step in the development of meaningful taxonomies of Web business models. Lambert (2003) concludes that until the attributes business models are agreed upon, "useful taxonomies of business models will not be forthcoming." Rappa (2005) notes "There is much talk about how the web changes traditional business models. But there is little clear-cut evidence of exactly what this means… Internet commerce will give rise to new kinds of business models. That much is certain."

This paper addresses the need for exploratory and descriptive research into fundamental aspects of the development and growth of businesses from within the business ecosystem represented by the Web (Dini 2003; Nachira 2002). It identifies and quantifies simple business models evolving in the Web environment. It builds upon an article by published earlier this year (Featherstone & Borstorff 2005) examining data in the .net zone. The concept of business as a technological ecosystem which parallels the ecosystem based on genetic information was introduced by Rothschild (1990). His work was published after the development of the Internet and nearly concurrent with Berners-Lee's (Berners-Lee & Fischetti 1999) invention and introduction of the Web. Rothschild states "economic development and the social change flowing from it is not shaped by a society's genes but by its accumulated technical knowledge"(p. xiii). His work implies that if an entirely new ecosystem or business environment were to emerge, one would expect to see entirely new business forms evolve which were uniquely adapted to survive and flourish in the new environment. Our research supports this aspect of the theory. We select the term 'simple business models' to discuss this emerging phenomenon.

At the end of 2004, there were approximately 30 million registered .com domain names and another five million .net names (VeriSign 2004). The Web is growing at a staggering rate of nearly one million new domain names per month (Sheridan, pers.comm. 2004). This rate of growth coupled with the sheer size of the Web make it a taxing topic for research (Kishi et al. 2000).

Growth aside, there are other factors which may contribute to the lack of research within the Web

environment. The increased use of dynamic Internet Protocol addresses makes the once viable practice of random number generation of IP addresses to obtain domain names (O'Neill, McClain & Lavoie 1998) suddenly very impractical (Edelman 2003). Attempts to generate random domain names using text data bases or extant search engine data bases consistently result in severely biased samples. Selecting a randomly generated list of domain names requires access to the complete domain name data bases managed by VeriSign for research on the .com or .net domains.

Methodology

Researchers first obtained access to the VeriSign domain name data bases (VeriSign 2004). Because of the size of the .com zone data base (thirty million records), we developed an algorithm which extracted 30,000 domain names based on random numbers generated by the program itself. This file of 30,000 domain names from the .com zone became our working database. We used an editing tool to enumerate each record (domain name) in the working database. We then generated 1300 random numbers in the range of 1 to 30,000. This set was used to select correspondingly numbered domain names from the working database. This resulted in the framing sample which we used to analyse the .com zone sites. Each of the 1300 domain names was resolved manually using a "cut and paste" process from our final database (an Excel spreadsheet) to the browser. This helped us to avoid typing errors in resolving the domain names, and still allowed individual evaluation of each site.

Description of categories

We used four popular Web browsers to conduct the initial research, Internet Explorer version 6.0, Netscape 7.1, Mozilla Firefox version 1.0, and Opera version 7.54. As each domain name was resolved, the result was categorized based on written guidelines describing each category. This helped to maintain consistency of categorization class. Periodic random reviews by the project leader provided an additional means to maintain consistency. The categories we applied to the resolved domain names follow:

- Business site:
- Personal site:
- Organization site (religious, political, governmental, educational, and etc.):
- Other site or site devoid of content or a server directory or not one of the above:
- Site Not found error message:
- Redirected to another site such as a domain name service provider (more on this below), or VeriSign 'Site Finder' type page, or browser search/portal page:
- Access to the site denied due to login requirement or password:
- A site reporting to be Under Construction at the time we visited:
- a site which we were "unable to categorize" (See Table 1 for a tabular listing).

The .com Zone Results

The .com count total of 1,284 represents the total of domain names after duplicate domain names (from duplicate random numbers) were removed. Thus we experienced sixteen duplicate random numbers. Any site categorised as a "business site" was also categorised as either large, medium, or small. Sites categorised as 'Redirects to other sites' were studied later and were further categorised as redirects to domain name providers or redirects to parked domain names (see below for further discussion of this). The "Other" category included sites we originally categorized as "Empty". These were sites where the domain name resolved to the active site, but the content was a blank page or a page with only a few words or a sentence. For example the text might proclaim "test site". The category "Unable to categorize" was used when we could not definitively determine the category. This was most often due to language issues but also occurred when the domain name resolved to a site consisting of unrecognizable fonts and/or characters. We continue to work with international student volunteers to re-categorize the foreign language sites.

Category	Frequency	Percentage

Business site	441	34.4%
Not Found error message	303	23.6%
Redirect to other site	265	20.6%
Under construction	75	5.8%
Unable to categorize	73	5.7%
Personal site	44	3.4%
Other (empty/server directory)	36	2.8%
Organization site	31	2.4%
Access denied	16	1.3%
Grand Total	1284	100%

Table 1. Results from the sample of 'COM' zone domain names

Analysis

We analysed nearly 1300 domain names from the .com domain. The largest single category was the 'business site' item. 'Not founds' represent a significant number of domain names. These are explained as instances where an owned domain name has been allowed to lapse. The owner simply chose not to renew the ownership of the domain name. The third major category is 'Redirects to other sites'. Redirects take place when one types in a domain name (or links to a domain) and is 'redirected' to another site. Redirects are considered in some detail in the discussion section. These three categories make up nearly 80% of the domain names in the .com and .net zones, the 'not found' category is somewhat higher in the .net zone and the 'business site' category is somewhat lower (Featherstone & Borstorff 2005). Our research led us to conclude that redirects account for about 20% of all domain names in both the .net and the .com zones.

Discussion – simple business models

What proved to be interesting and intriguing was the number of sites we came to categorize as 'redirects' and the patterns we discerned as we looked more closely at this phenomenon. The proportion of redirects we encountered raised questions. First amongst them, "Why are there so many"? Redirects occurred 19.1% of the time in the .net zone and 20.6% of the time in the .com zone. To gain some perspective, Verisign estimates there were about 30,000,000 domain names issued in the .com zone and 5,000000 in the .net zone, if we extrapolate from our data, we estimate nearly 7 million domain names redirect in the .net and .com zones.

Formal definitions for 'redirects' on the Web abound. Perhaps the simplest and most appropriate is this. A redirect is an automatic forwarding of a domain name in order to resolve the name. Redirects became important to us because they came to represent very simple business models on the Web. Thus the balance of this paper will discuss our findings with regard to this category as well as its relationship to the business category and the overall conduct of business on the Web.

Example 1 – A simple 'level one' business model

A simple example of what we are referring to as a redirect is this. Someone types in a domain name such as www.mikefeatherstone.com (HREF5). This person expects to arrive at a Web site telling them something about Mike Featherstone, but instead the name is resolved to a site shown as Figure 1.

Figure 1. A level one business model representing the speculative purchase of a domain name.

The name was redirected to the 'Godaddy' Web site. In this case they were redirected to the Domain Name Registrar (or provider) from whom the owner purchased the domain name. The fact that they were redirected to that site might mean that the owner just purchased the name and has not yet deployed a Web site. It might also mean the owner purchased the name, and has no intention of building a Website, but merely wishes to hold ownership of the name until such time as some business or person makes an offer to purchase the domain name. This is a practice almost as old as the Web itself. Originally called 'domain name mining', it is now commonly referred to as 'cyber squatting'. This represents one of the most elementary business models on the Web. It requires little technical skill and the cost of purchasing a speculative domain name is about $US 9.00. The strategy is to simply acquire a desirable domain name and then resell it. One instance of a successful execution of this strategy was the 2005 sale of the domain name www.voyuer.com (sic) for US$100,000.00 (HREF6)

Our research found eighty-six instances (6.7% of our total sample) where domain names redirected to what were clearly domain name registrars or service providers. If we extrapolate this percentage to the entire .com zone, over 2 million domain names in the .com zone meet this criterion.

These should be placed in the same directory as the paper and linked to directly. Please ensure that your images are saved as either GIF (best for images containing text or line-art) or JPEG (best for photographs). Do not use PNG (as some older browsers do not support this).

Example 2 – A simple 'level two' business model

A second example serves to illustrate the next level up from the level one simple business model. In this instance the domain name is purchased and then 'parked' or moved to with a specialized service provider. In some instances this may be the registrar who sold the name, in other instances it may be a different domain name service provider. For example; a person types in the name www.toptraveltours.com. In this instance the domain is resolved to a site shown in Figure 2.

Figure 2. Shows an example of a parked domain name. The domain name service provider populates the site with pay per click affiliates and shares revenue with the domain name owner.

This site has all the appearances of a business portal site, and indeed, to some extent it is. But the owner of the domain name www.toptraveltours.com (HREF7) did not develop, or even pay for the site. The owner simply chose to 'park' the domain name with a domain name service provider, in this case Sedo.com. Parking involves informing the domain name registrar that the domain name server resolving your site domain name will be Sedo.com (often naming the domain name server in a format provided by the service, i.e. ns1.dnserviceprovider.com).

Anyone visiting the site who clicks on any of the links served up by the hosting company creates revenue in the amount of anywhere from US$ .05 to US$ .25 per click. The host providing the service may take a percentage of the total revenue, 10% to 50% for example, as their revenue portion. Our research shows that 13.9% of all .com domain names are in fact 'parked domain names'. The margin of error is + or - 1.8% at a 95% confidence level. This extrapolates to over 4 million Web sites in the .com zone alone.

In nature subtle mutations appear which lead to greater differentiation of species. In the environment of the Web such mutations begin to appear where strategic revenue generation may lead to subtle differentiation and enhanced sophistication of business models. Figure 3 depicts a Web site that demonstrates such differentiation. Note the name of the site www.plamsatv.com (HREF8). The owner of this domain has made a strategic decision to misspell plasma in hopes that this will result in more visits to the parked domain name. Verisign (VeriSign 2004) reports there are twenty million such misspelled domain names daily. The links which populate the parked site will provide revenue to the domain name owner with every click through.

Figure 3. This represents a subtle variation of a parked domain name. The owner hopes clients will misspell Plasma and arrive at his site. Such intentional mimicry also appears in natural environment.

Level two business models such as these require a somewhat higher level of technical expertise, at least to the extent that the domain name owner possesses the knowledge required to advise the domain name registrar that a new domain name server will be employed. But if these level two sites are to survive and compete in the Web environment, the owner must acquire additional skills. Unlike a level one site, the domain name owner now has a vested interest in driving more client traffic to the site. Thus marketing skills and the ability to use tools such as Google Adwords, which give the domain owner some control over directing client traffic to the site, become important to success of the enterprise.

Example 3. Simple Level three business models – Affiliate Web sites.

Level three business models represent a significant jump up the Web business evolutionary ladder. Contrary to level two models, Level three sites require a Web presence in which the domain owner provides for the design and content. Level three business models take the concepts employed in level two models and place them fully in the hands of the domain owner and in return these models present the opportunity for enhanced revenue generation. Level two models rely primarily on pay per click market strategies. Level three models allow the Web site to generate revenue from pay per sale events. Level three models move us away from sites which our study classifies as redirects and into the realm of sites our study categorised as business sites. But we are still able to call them simple business models, because level three sites still do not engage in commerce at their sites. That is to say, level three sites will not incorporate shopping carts or retail sales on the site themselves. Rather, level three sites generate revenue from direct affiliations with larger enterprises. Level three business models goals are to create symbiotic relationships with these large e-commerce enterprises. The level three sites generate traffic and solid leads to the e-commerce enterprise sites. The enterprise sites, in return provide the code and even the graphics needed to display the links to the target enterprise site. Figures 4 and 5 present examples of affiliate sites.

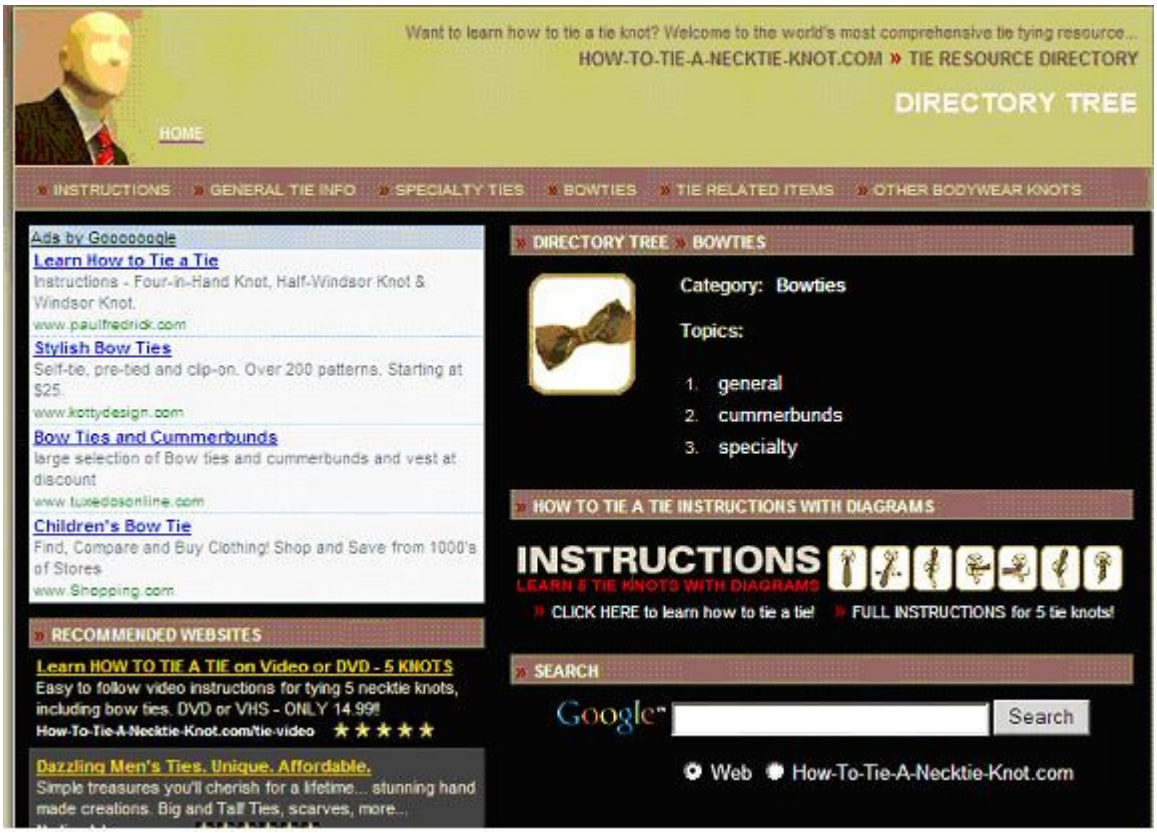

Figure 4. An affiliate site. This site represents a high level of sophistication in that the design perfectly integrates the function of the site which is to encourage visitors to click on the affiliates listed.

Site design can vary significantly on level three sites, much more so than in level two sites. This is explained because in level two sites, the domain owner has little input into site content or design. The domain service provider handles these details on level two sites, thus they present a very similar appearance on the Web, even though they may represent several different domain name service providers. Level two sites, like amoebic life forms, have a very simple function. It is to populate a standard Web page with links of pay per click enterprises for site visitors to click through to. Level three sites represent a significantly more diverse pattern of revenue generation, including pay per click, and pay per sale commission structures. Thus we would expect to see much more diversity in level three Web sites, and this appears to be the case.

Figure 5. Level three sites feature much greater variability in design than do level two sites.

Level three simple business models offer an infinite variety of site and content design ranging from silly and amateurish to edgy and professional. They exhibit varying levels of community content from primitive to erudite, but all have in common the fact that they do not create a product, but rather attempt to aggregate a community of users in order to insure long term survival of the enterprise revenue stream. Still more sophisticated skills and knowledge are required of level three domain owners since they must now interpret site metrics, possesses even more advanced marketing skills and if site traffic grows, eventually manage others in a growing enterprise.

Limitations and Direction for Future Research

Further studies of these simple business models are likely to reveal ever increasing numbers of mutations of these basic forms and thus an increasing variety of ever more complex 'sub-species'. The patterns that led to the identification of these simple business models were derived from research conducted from within the environment of the Web itself. Attempting to discern these models from viewing businesses external to the Web would have been a difficult proposition. Continued study of these simple models must be conducted from within the environment where they thrive.

In this paper we suggest that, analogous to life on our planet, the simplest business models are the most abundant and prolific. And like microscopic life forms, many of these simple "one cell" business models thrive just under the surface of our unaided vision, requiring a magnified view to fully appreciate their abundance and understand their revenue generating capacities. Further, as these business models increase in complexity, they become more visible and visibly more diverse. All levels of the simple business models we have discussed depend on symbiosis with higher level enterprises for their continued existence. Without domain name registrars, the level one model

would cease to exist. Without more sophisticated domain service providers level two models would not exist. Without large Web enterprises which offer both pay per click and pay per sale revenue streams level three models would not exist. The continued 'viral like' growth of these simple but progressively complex business forms will have an impact on existing large business enterprises within the environment of the Web and provide entrepreneurial opportunities for new generation of business professionals. It is only by studying these phenomena from within the context of the Web itself that we can hope to discover and understand the new forms of businesses evolving there.

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