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The Electronic Communications Revolution: View from 2001

The electronic communications revolution is drastically changing the investment climate and introducing numerous new unknowns into virtually all equations and investments because it changes the economics of communication. These changes are so fundamental—to individuals, businesses and societies—that they are difficult to appreciate fully. Yet the sweeping nature of such a change means that virtually everything is affected, directly or indirectly.

The stock market of 1996-2000 reflected in large part investors' discovery of some elementary aspects of the electronic communications revolution, and their excitement about the potential of the extent of change. Massive change engenders elevated levels of opportunities and threats in financial and intellectual capital, which travel closely together in periods of massive change because if one has more relevant intellectual capital regarding the nature of change, one can profit by marshalling one's financial capital appropriately.

The correction in the financial markets during 2000-2001 was not a simple matter of "greed getting its just desserts" or a "boom/bust pattern." It reflected an extremely useful realization: there are many unknowns about the revolution, as well as the technology and business models that underlie it, and investors have not yet understood it well enough to maintain investments under intense scrutiny and adversity. Investors, when faced with pressure, must be confident of their investments to be able to hold them when the environment becomes difficult; if they are not, they desert their investments.

Making informed investment decisions requires a sound understanding of the electronic communications revolution and transformation as well as insight into the "customer context." Only then can one formulate intelligent strategies to approach investments in early stage technology companies (hereafter ESTC) going forward.

The Fundamental Value Proposition

Electronic communications is the digitization of previously analog communications, largely through the use of computers and transmitted or delivered through wireline or wireless networks. To illustrate one basic element of the value proposition, let's say that you change your residence, and you need to change the billing addresses for all of your subscriptions and bills, most of which still arrive via postal mail. Utilities will probably take you thirty minutes each to interact with a telephone based representative during business hours, assuming no human error. The cost to the utility for your call averages 7-12 dollars, with your cost often being much higher, assuming that you are paid more than an average representative. Subscriptions can be somewhat better, but the operation is largely the same. It is analog (no record or ability to share the transaction with anyone outside the conversation) and relies on synchronous communication (you must speak with the representative live).

Contrast this situation with a utility's well designed website, which enables you to change the address at 9 p.m. on Sunday if you wish. You can often get to the self-service page within five clicks, you have a digital record of the change, and the transaction is asynchronous, that is, you interact at will with a computer that is always available, when your cost of interaction is lowest. The average Internet-based self-service transaction costs the servicing company one dollar or less. That represents a ten-fold reduction in cost of service for the company and likely a similar reduction for you, while improving service levels. It is also highly scalable: servicing 10,000 customers

costs the same as servicing 100, and therefore it offers significant advantages over telephone customer service, which is far more costly to scale. This scenario does not assume the even better example of a web-based address changing management service that can change all the addresses for you from one site. For a more detailed discussion, see *Exploring the Communications Economics of Electronic Communities*¹.

The Business to Business Value Proposition

Multiplying the above example by millions of transactions that companies have every day with their customers, it is evident that extensive value can be created *for provider and customer*. However, many B2B transactions are far more complex and costly than this example. For instance, a commercial customer may contact a vendor to correct an error in a major order. For many companies, such a call sets off a chain reaction, as sales, ordering, packing, shipping, invoicing and other departments get involved, each call incurring the 7-12 dollar cost, often multiple times.

As impressive as the above scenarios may be, in fact the potential is far greater when one considers that most commercial transactions are accompanied by communications, many elements of which are candidates for digitized communications. In order to execute commercial transactions, information must flow between the parties until each feels comfortable with the transaction's terms. Much of this information can flow via digital processes.

E-Business at Global Enterprises

E-Business describes the strategic, process and technology activities that “bricks and mortar” (BAM) organizations undertake to digitize communications. Considering that analysts are in widespread agreement that business to business (hereafter B2B) transaction value and e-business investment will dominate business to consumer for the foreseeable future², BAM companies represent the “customer context” or buying environment for ESTCs’ products and services; therefore, insight into issues relevant to BAM e-business initiatives will be critical.

There are many customer context elements that have nothing to do intrinsically with e-business but that dramatically affect the value it can create. The BAM’s strategic goals and attitude around the initiative are often defined by its existing market position relative to peers and neighbors in its value chain. If the company is disadvantaged, it may attach a high strategic importance to the project with the intent to aggressively grow its market position by using quick adoption as a competitive weapon. Likewise the company’s culture has a major impact on its attitude toward the investment. For example, does the company see itself as an innovator, is it confident of its ability to derive value from innovations, and what is its track record of late?

Specifically regarding e-business itself, realizing verifiable economic value from BAM e-business investments can be a challenge, although the examples outlined above are simple to understand. Significant expenditure is required to create the strategy that stipulates what processes should be targeted first; often significant retraining and redeployment of human resources is involved; if advanced technologies are used, unknown complications can arise. Even more fundamental: it isn’t terribly easy to measure transaction costs with unassailable certainty. Lastly, transforming processes within BAM organizations requires time, during which the organizations’ processes change for other reasons than the e-business effort.

Technology Challenges

Technology is a major driver of the potential of e-business, and it is comprised of hardware, software and network engineering at the most simplistic level. The ESTC is likely only one of hundreds of technology vendors with

¹ <http://www.rollyson.net/public/papers.html>

² Forrester, Gartner, Jupiter and IDC have consistently pegged B2B transaction value and e-business investment as dwarfing B2C through 2010 at least. Eventually, as transformation of analog processes penetrates the economy as a whole, that will probably change as it reflects the economy today, with consumer spending accounting for roughly 67% of GDP, with this caveat: a significant percentage of the total will undoubtedly remain analog and never be candidates for digitization.

whom the BAM works. Vendors are all changing very rapidly, driven by a high competition. Therefore, applying myriad components of technology solutions to achieve a measurable economic result is a very complex proposition.³ It is well known that more than three-fourths of technology projects fail to deliver promised expectations due to the complexity of the technology and the degree of change at the client where it is being developed or installed.

Evaluating the economic value presented by e-business, then, is a challenging proposition in itself. On one hand, the value is extremely compelling, intuitive and certain, given the simple examples above. On the other hand, technology is inseparable from e-business and it is very complex and difficult to measure. And if that part of the proposition were not daunting enough, it is only part of the answer because it is the business use of technology that generates economic value, not the technology itself. The technology solution must be used by the company long enough to measure the value of the transactions processes, which must often be compared to the transactions prior to the e-business solution, which were often not measured with certainty.

The coup de grâce in the challenge to measure the economic value from e-business arises due to the digitization of communications. Digitization explicitly and visibly connects people where they were not connected before. For example, a large corporation's corporate office may have an average of 500 staff, each making an average of 30 analog phone calls per day. The explicitness and awareness of the phone calls was minimal prior to e-business, so measuring their economic value was not an issue or possibility. If 35% of these communications can take place through e-business transactions, an investment is required, which drives a desire to measure an economic result. Theoretically, it can be done, but this is new territory because measuring the value of the calls is inherently difficult, not only because e-business is suspect.⁴

Moreover, the digitization of communications, because it decreases transaction costs in most cases, often increases the number of transactions, which "diminishes" the cost savings and increases the organization's ability to change (in fact, a desired result). The degree of change makes it more difficult to isolate economic benefit because there are fewer constants. Furthermore, the point at which value is generated can and does move. Practically speaking, knowing where to define value is an art as well as a science, and it will be imbued with uncertainty for the foreseeable future.

Conclusions

Therefore, electronic communications represents at once a very compelling value proposition coupled with complex technology choices, increasing change within organizations and inherent challenges in measuring economic value delivered beyond a reasonable doubt. How, then, are investors supposed to assign value to the companies that are driving the electronic communications revolution?

When investments are made in the context of a major transformation such as the electronic communications revolution, a strategic outlook is best because it will seek to identify risks and unknowns, and it will specify the intentions to act to minimize the impact of the risks. This contrasts with the "rush to market" mentality during 1996-2000 in which most investors dealt with the complexity of value propositions by focusing on the simple, intuitive truths that they could experience first-hand, such as electronic banking, self-service, configuring made-to-order products and massive product selection. As 2001 draws to a close, investors are confronted with deserting the market or making a concerted effort to master the complexity represented by these investments.

Investors are now at a crossroads: 2001 especially has been a time of reexamination and setting a new course as the gale of the hyped first stage of the electronic communications revolution subsided. A more robust analytical discipline that draws on a strategic perspective will enable investors to grow beyond the stereotypical "short-term return mentality." Increased strategic understanding will also bring investors closer to ESTC and Internet company executives with whom they will be able to have a more insightful dialog, which will dramatically increase their ability to capitalize on the high degree of risk and reward.

³ To wit, a complete Customer Relationship Management (CRM) solution would entail integrating over 300 vendors in 2000.

⁴ One ramification of this point is the current "downgrading" of the "New Economy's" productivity gains. For one example, see "Productivity Myth," *The Industry Standard*, August 20, 2001. <http://www.thestandard.com/article/0,1902,28629,00.html>