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### Recommended Citation

Davison, Robert; Vogel, Doug; Harris, Roger; Gricar, Joze; and Sorrentino, Maddalena, "Electronic Commerce on the New Silk Road: A Conucopia of Resarch Opportunities" (2003). *ECIS 2003 Proceedings*. 37.

<http://aisel.aisnet.org/ecis2003/37>

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# Electronic Commerce on the New Silk Road: A Cornucopia of Research Opportunities

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## Abstract

*The Silk Road was an important trade route between Europe and Asia a thousand years ago. It connected locations in Central and Eastern Europe with those scattered around West, Central and Eastern Asia. In more recent times, it has been neglected commercially, with the development of other ports and routes. In this paper, the potential rejuvenation of the Silk Road with eCommerce is discussed. In this research project, we characterise emerging opportunities for eCommerce research in the regions of Western China (Xinjiang) and Central Asia (e.g. Kazakhstan). Infrastructural barriers (financial, logistical and physical) are identified, together with cultural and local economic concerns. Our analysis is generally*

*positive and we expect that a new e-Silk Road will emerge in due course, rejuvenating life and the local economy.*

## **Keywords**

Europe, Asia, Silk Road, eCommerce, Culture

## **1. Introduction**

The Silk Road was a historical trade route (with its zenith in the 7-9<sup>th</sup> century) linking Asia and Europe that changed the nature of commerce in the medieval and renaissance world (Neville-Hardy 1997, Bonavia 2002). The Silk Road was really a network that enabled the exchange of a wide variety of goods including silk, precious stones and even rhubarb as well as information. The old Silk Road is little more than history now, but what happened to those cities and countries along the way that made it famous? What is their current status and how could they build on the successes of the past to create opportunities for the future? In many cases, the goods, products and culture are still there but the commercial significance has disappeared as more advanced logistical and technological 'solutions' have been developed, with the consequence that broad-based commerce beyond the local context has become little more than a very distant memory. The Internet, however, may provide an opportunity for these regions to rejuvenate their ability to provide goods and services to the rest of the world. This renaissance will not be easy, given the numerous economic, logistical, infrastructural, political and cultural considerations that are involved, but it could extend a valuable lifeline to the currently isolated communities scattered along the tendrils of the old Silk Road. Similar developments in other parts of the developing world that involve leapfrogging directly into the digital age have been documented (e.g. Davison et al. 1999), for example Grameen Bank's support for mobile phone kiosks in villages in Bangladesh (<http://www.Grameenbank.com>).

Contemplating a new Silk Road oriented around electronic commerce requires a paradigm shift in terms of the societal context where changes will occur. The new paradigm will need to focus on remote access to information services and products, as well as more general information exchange. Little is known about what the impact and implications of introducing electronic commerce might be in these currently isolated communities. However, it is certain that any activity will need to take into consideration dimensions such as: access to information, service availability, mastery of technologies, attitudes towards change and the role of technology in change, culture and the empowerment of civil society. Integrating consideration of these dimensions with local societal networks and contemporary technology will be critical if mutually beneficial relationships between organizations, people and governments are to be realized.

In this paper we describe a research project that is currently in progress related to the introduction of electronic commerce in the isolated communities of Western China and Central Asia that were formerly connected by the various routes of the Silk Road. We aim to discover if the Silk Road's former glory and success can be reborn in a new eSilk Road. We draw on data gathered from published academic and government sources as well as interviews with academic, government and business leaders in key Silk Road cities, and our own observations and reflections that come from a fact-finding trip to Western China in September 2002. Our intended research project will involve the application of a socio-technical approach to e-commerce development that maximizes sensitivity to local norms and simultaneously involves local participants. Initial conclusions on the viability of an eSilk Road are drawn.

## 2. Background

The image of the Silk Road often conjures up visions of strings of heavily laden camels mincing sedately over endless realms of barren terrain. This vision is not inaccurate, for some parts of the historical Silk Road would have looked much like this. However there is very much more. The Silk Road connected numerous countries as far apart as Italy, Turkey, the Central Asian Republics (Kazakhstan, Turkmenistan, etc.), China, Mongolia and the countries of South Asia (India, Pakistan, Nepal, etc.), all with their own distinctive cultures and climates. Today, as in ancient times, the Silk Road is a study in contrasts. Gone are the long strings of camels, except those giving tourists a ride out into the desert. Cities with 5-star hotels and served by multi-lane highways and modern airports, lie adjacent to valleys with yurt-dwelling nomads who move their families and yaks to new pastures as the seasons change. Traditional market places with locally produced products (e.g., hand-woven silk carpets, camel-hair blankets and woollen slippers) are augmented with Internet sites that offer all these products and more (<http://www.trademile.com/tmnet>).

Telecommunication services have improved markedly as fibre optic cable and wireless access has proliferated. High speed Internet access and rural connectivity has emerged to enable a strong platform upon which e-commerce (and mobile commerce) can be enabled, though telecom costs remain a significant barrier to broad scale adoption and use of the technology. A serious infrastructure gap exists in the nature of payment systems and banking. There is no history of local credit card use in Western China where cash has always been king. In general, credit and debit cards can only be used in high-end department stores, luxury hotels and restaurants and, for the most part, by international visitors. As a result, online consumers in China often browse through a sales website but pay by mail or walk down the block to provide payment in person. Deng (2001) notes that 90% of B2C transactions use COD (Cash/Collect On Delivery) for payment settlement. This makes e-commerce more time-consuming, more costly, and less predictable than a traditional purchase. Large agricultural cooperatives and oil and gas extraction industries have emerged. However, the rich multicultural heritage of the region and the spirit of the old Silk Road remains and is being increasingly re-discovered by visitors from around the world.

A number of on-going government initiatives are encouraging e-commerce along the Silk Road. For example, [www.sparkice.com](http://www.sparkice.com), a China e-commerce pilot enterprise, has launched a special website to leverage conduct of on-line business and information traffic. The Internet site, [www.21cwn.com](http://www.21cwn.com), has been built as a virtual platform for the international co-operation alliance for development of China's western regions. The platform reciprocally allows China-based suppliers to sell their products on the Internet. On the way towards becoming an interactive marketplace for global e-commerce, Sparkice has forged a strategic partnership with Metro, one of Europe's largest retailers, which will place procurement orders via Sparkice's One Source business-to-business (B2B) platform.

However, physical movement of products across borders is currently hampered by traditional problems. For example, at the Western border of China with Kazakhstan, rail and truck traffic now requires everything to be unloaded from European trucks on the border and reloaded on to Chinese trucks, often with a substantial delay. Attention to logistics and customs issues similar to those which have occurred in Western Europe where traffic now proceeds swiftly across multiple countries has not yet occurred along the Silk Road. However, there is a major logistics and distribution centre in Urumqi for business to and from Kazakhstan and the Russian Federation which portents well for the future.

### 3. Research Approach

This research was initiated in a panel session (Vogel et al. 2002) where the initial concepts were developed. We believe that a socio-technological spirit should infuse this field-oriented research with an action research intervention (cf., Trist & Murray 1993, Qureshi & Vogel 2000, Davison & Vogel 2000). A socio-technological approach seeks to jointly optimise human and technical processes. It recognizes the importance of *structural factors* (like government regulations and local business practices) in addition to human and technical factors. Because there are social, technical, and structural barriers to effective e-commerce adoption, overcoming these barriers requires *integrated* social, technical, and structural solutions. Socio-technical systems theory holds that joint optimisation yields effective innovation adoption, use, and impacts. Action research is an intervention focused methodology that involves solving problems experienced by a variety of stakeholders, while simultaneously contributing to knowledge. Action research involves the combination of theory and practice “through change and reflection in an immediate problematic situation” within a framework that is mutually accepted by both researchers and stakeholders (Avison et al. 1999).

The specific instantiation of the socio-technically informed action research project is still being planned, and will indeed depend to a large extent on the identification of problems that are experienced by local stakeholders in the Silk Road region. However, one pilot project has been identified to date, which we describe here. This involves community based tourism (CBT). Community-based tourism refers to tourism enterprises that are owned and managed by the community in which the tourism occurs. It is a form of community development that provides income through operating a tourism enterprise and using that income to better the lives of community members. Often, it also involves an approach to conservation, whereby the community’s natural environment, such as flora, fauna and landscapes, are conserved as sustainable tourist attractions. Clients of community-based tourism engage closely with host communities, usually living among them, encountering their cultures and life-styles at close quarters and even participating in local development activities. Community-based tourism lends itself especially to rural localities inhabited by ethnic or cultural minorities or to areas of unspoiled natural beauty. These conditions are still widespread in the Central Asian and Western Chinese regions of the Silk Road. An example of CBT involves a pilot, rural telecentre in the Bai Yang Gou Valley Tourist Region (see Figure 1). This pilot will involve a case study of current tourism practices, infomobilisation (Harris 2002) of the community and development of CBT.

Figure 1: Bai Yang Gou Valley Tourist Region (China)



Community-based tourism has already established a foothold in the Silk Road regions. For example, a community based tourism operation in Kyrgyzstan provides homestays with nomads, horseback treks, etc. It is supported by Helvetas, the Swiss development agency, see [http://www.helvetas.kg/pr\\_bpp\\_en.shtml](http://www.helvetas.kg/pr_bpp_en.shtml). Tours operate within a short summer season and are bookable on the Novinomad web site (<http://www.novinomad.com/>), a Kyrgyz-Swiss Joint Venture specializing in eco-tourism, trekking and horse-riding.

## 4. Discussion

E-commerce can provide viable alternatives to rural disenfranchisement that has occurred in other developing regions of the world, but it clearly needs very sensitive management. Cultures can remain intact without the need to migrate to cities or adopt urban ways as tourism develops and electronic outlets for local products gain global exposure. Whilst the overall contribution of community-based tourism to national or regional tourism income is usually low, it can be hugely significant to the community in which it occurs. Moreover, as the Internet is a natural partner for tourism, given that at the point of sale, tourism is entirely an information product, and as ICTs are beginning to find their way into rural areas, in support of rural development, it is now possible to link remote communities with global tourism markets in a way that disintermediates the string of commission agents from the tourism value chain and ensures that more of what tourists pay for their experience actually reaches the pockets of the communities that they visit.

It is likely that mobile devices will play a significant role in the rejuvenation of the Silk Road. Creative combinations of phones and PDAs can fit well with a nomadic lifestyle as well as provide independence with confidence to visitors. Yurt-based web services (cf. Virili & Sorrentino 2002) can be envisioned to advertise to the outside world and provide a window for local goods without disrupting culture and life-style while bringing in monies for community development. Technologically, the technology infrastructure is in place and custom mobile devices can easily be developed to deal with the characteristics of the environment and activities to be supported. Structural factors, e.g., banking and payment

clearance need to be addressed as well as exploration of stable patterns of government agency involvement. Social factors, in terms of consumer trust and acceptance/adoption dynamics, deserve attention as does preservation of cultural values.

## 5. Conclusion

In conclusion we see an e-Silk Road as promising but challenging with numerous opportunities for research. Much of the infrastructure is in place but it lacks application. The region's rich heritage provides a wealth of opportunities but also creates an ongoing need for cultural preservation and special sensitivity, as we reconcile the concerns and objectives of multiple stakeholders (Verbole 2000). Many additional considerations lie in the nature of tradeoffs between land, sea and air options building on shared information and e-commerce flexibility. Overall we feel that the historical prominence of the Silk Road has renewed significance in global e-commerce. By nature, this is multi-year and multi-project research. Our efforts to date represent only the first steps down the e-Silk Road. Extended collaboration between universities, business and government is warranted. This would extend beyond joint panels and workshops toward development of prototypes (test beds) and action research projects so as to influence successful implementation and use of the e-Silk Road.

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