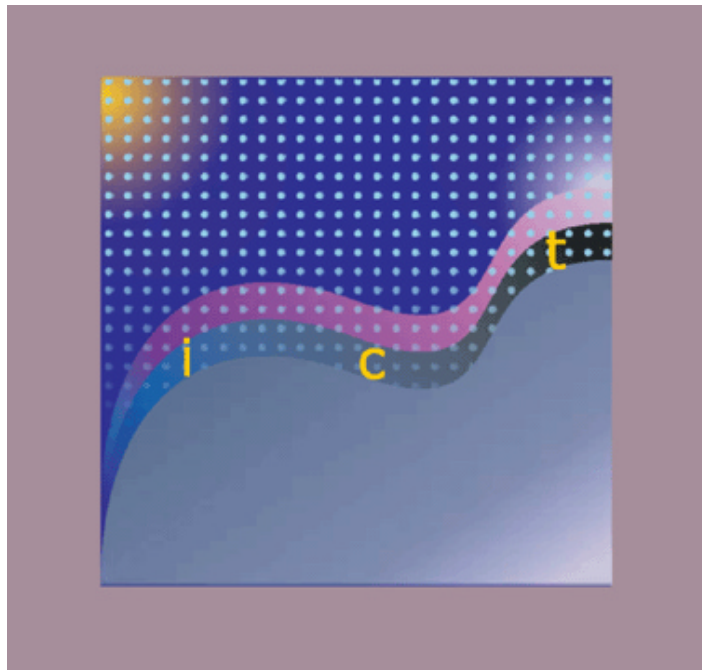


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Chapter 6

E-FINANCE FOR DEVELOPMENT: GLOBAL TRENDS, NATIONAL EXPERIENCE AND SMEs

A. Introduction

Large enterprises have greater access to finance on competitive terms than do small and medium-sized enterprises (SMEs) and microenterprises. The SMEs of developing and transition economies, which represent the most of these countries' productive capacity, face an even more severe lack of access to finance.

The advent of online electronic finance has brought with it the promise of cheaper, faster and more widely available finance for SMEs. Various types of online financial services that may be available to SMEs have already emerged or are coming on stream.

The Internet is a global phenomenon and so is e-finance. Its deployment is not limited to developed countries, and indeed some developing countries – such as Brazil, India and the Republic of Korea – are experiencing particularly strong growth in e-banking. At the same time, there are significant differences not only among regions but also among countries within the same region. It is interesting to note that, to a large extent, although the initial impetus has often been provided by foreign institutions (Deutsche Bank launched the very first Internet banking project in Latin America in 1996 and Citibank has developed a special “e-toolkit” across all its branches worldwide) local financial institutions have now successfully taken the relay. In many developing and transition economies the local enterprise sector has also developed active Internet and e-commerce strategies, thus matching the e-finance drive of the local financial service providers.

The Dynamics of e-finance in emerging economies, while not dissimilar, are clearly not identical to those of e-finance in the developed countries. It appears that by and large, e-finance in developing countries is driven by Internet banking, e-payments, and e-trade finance. Activity in financial markets is still limited, although in countries such as Mexico and the Republic of Korea online brokerage services appear to be quite

well developed. On the other hand, some e-financial services seem to be specifically tailored to the developing and transition economies. This is the case of microfinance, which will be discussed in the section on SMEs' specific services.

This chapter begins with a review of current trends in e-finance, including Internet banking, e-trade finance and e-credit information, and then looks at the global e-finance platforms. It also provides a review of SME-related e-finance experiences and initiatives in developing countries and, finally, outlines the challenges facing SMEs and related players.

Documentation on e-finance for SMEs is still heterogeneous and fragmented, especially regarding developing and transition economies. In particular, there is a lack of information on the attitudes of users of e-finance services. E-finance suppliers provide a large share of the available documentation. However, in some cases the information is provided to support business initiatives and therefore the data should be used with caution. This chapter is based on published data and information made available by experts participating in two recent UNCTAD e-finance related events, namely the UNCTAD Expert Meeting on Improving Competitiveness of SMEs in Developing Countries: Role of Finance, Including E-Finance to Enhance Enterprise Development, held from October 22 to 24, 2001 in Geneva, and the UNCTAD Side Event “E-Finance for Development”, held on 19 March, 2002 in the framework of the International Conference on Financing for Development convened by the United Nations in Monterrey, Mexico.¹

Throughout the chapter, a narrow definition of e-finance – to mean financial services delivered online through Internet fixed and wireless networks to enterprises and households – will be used.² However, where appropriate, the discussion covers related areas such as the offline use of electronic devices for payment transactions in remote areas.

B. Internet banking

Internet banking refers to the deployment over the Internet of retail and wholesale banking services. It involves individual and corporate clients, and includes bank transfers, payments and settlements, documentary collections and credits, corporate and household lending, card business and some others.

Since its inception Internet banking has experienced strong and sustained growth. According to Jupiter Media, Internet traffic for all United States banks grew by 77.6 per cent between July 2000 and July 2001, compared with overall World Wide Web traffic growth of 19.8 per cent over the same period.³ Another source estimated that the share of United States households using Internet banking will increase from 20 per cent in 2001 to 33 per cent in 2005, and that by 2010 there might be 55 million users.⁴ In France, the number of online banking accounts is recording an annual growth rate of 75 per cent and is forecast to reach 10 million by 2003. Datamonitor forecasts that between 2000 and 2003 the number of online bank accounts in Europe may grow annually by 34 per cent, increasing from 14.3 million in 2000 to 34.2 million in 2003.⁵

Internet banking operations currently represent between 5 per cent and 10 per cent of the total volume of retail banking transactions both in the United States and in Europe. This is less than the share of Internet securities trading, estimated at between 20 and 25 per cent of the total, but much more than overall business-to-consumer (B2C) e-commerce, which represents less than 2 per cent of the total retail trade.

Internet banking is becoming a driving force shaping the future of the banking industry. All banks, including those that were cautious in the past, intend to offer access to their products and services via the Internet, which is seen as a major distribution and communication channel. The current status of Internet banking shows that – contrary to what some analysts initially expected – pure Internet banks have gained only a limited share of the market. In fact, the traditional banks have not been destroyed and, while a few of the pure Net bank models may succeed, no newcomer has been able to penetrate the banking sector on a large scale. The “click and mortar” model – a strategy combining physical and Internet presence – has thus become the dominant model. The traditional banks and other financial service providers have adopted aggressive Internet strategies. At present the entry barriers to Internet banking appear to be much higher for new

entrants than was the case during the early days of this type of banking. The barriers stem from customer attitudes and the very nature of banking services and products. The traditional banks with a strong customer base have a competitive advantage over newcomers. However, to maintain this advantage is not easy. The key to success is to keep abreast of technological change and sophistication; this allows a bank to understand the potential of Internet technologies and to integrate them into a coherent business strategy. For many banks the scale of the requisite operations and investments creates problems of outsourcing or aggregation of services.

For “click and mortar” banks, transforming bank branches into multipurpose advisory centres would also encourage clients to move to Internet banking, since the majority of Internet users also make use of bank branches and automated teller machines (ATMs). The idea is to transform bank branches into “one-stop shops”, i.e. well-networked financial advisory centres for clients.⁶ Thus the prevailing model of Internet banking today is the one that is thoroughly integrated within the existing banking infrastructure, which combines click and mortar systems.

To further develop e-finance, banks need to show customers that they provide the same security standards on the Internet as in traditional banking. Moreover, like credit card associations and companies, banks should assume, at least in the initial stages, full responsibility for covering the costs incurred by clients as a result of a security breach and unauthorized transactions. To encourage migration to Internet banking, the banks should also offer better interest rates and cheaper accounts. The ability to gain customers’ trust thanks to security, willingness to take responsibility and the offer of financial incentives has been an important feature of the most successful pure Net banks.

Online banking for SMEs

Many global financial service providers have developed specialized SME-related Internet banking. For example, Citibusiness, a service of Citigroup, provides online various e-finance services to SMEs, including current, savings and money market accounts and certificates of deposit. Furthermore, SMEs can apply online for lines of credit, loans and mortgages. The service also includes the management of clients’ funds in separate accounts. Other global players, such as HSBC, Deutsche Bank, Standard Chartered Bank are also developing similar services.

C. Internet payments

From closed to open architecture

Payment systems, particularly the wholesale systems used for transactions among financial institutions, have been moving to an electronic infrastructure since the beginning of the 1970s. Electronic payment systems and networks were based on proprietary protocols and dedicated telecommunication infrastructure.

The Internet has radically changed this situation. It is an *open network infrastructure*, involving direct non-hierarchical links between the buyer, the vendor and any intermediaries, as well as between them and the technology providers. The Internet model dissociates the network from the physical infrastructure. It allows interconnection between heterogeneous networks and provides ubiquitous common standards, whose development is no longer controlled by a single entity or even a group of entities. Furthermore, with encryption technology, digital certificates and smart cards, it is now possible to provide security in a modular and flexible fashion. Thus a highly secure environment can be created on the public networks.

Chart 26

Internet payments: a radical value shift

Traditional payment service providers	Internet
Closed network	Open network
Private infrastructure	Public infrastructure
Mono-industry	Cross-industry

As Chart 26 shows, the Internet entails a radical value shift, although this view is not necessarily universally shared. Even leading players such as SWIFT and Visa have not yet transferred their core operations to open systems, and this creates a degree of uncertainty as far as their future operations are concerned. For many payment systems, use of Internet Protocol standards and protocols does not entail a radical change in their business practices and their governance. It remains to be seen whether the full advantages of Internet architecture can be gained without fully accepting the open network model.

Despite numerous attempts aimed at offering innovative alternatives, credit and debit cards and their existing payment network and procedures are still the main payment instruments for B2C transactions. They are

used in more than 90 per cent of online purchases. Small businesses are using them for some of their payments. However, there is a broad recognition that the current credit-card-based payments cannot fully satisfy e-commerce transactions. Most e-tailers consider the current payments structures to be quite expensive. Even the supposed beneficiaries of this situation, namely banks and payment networks, do not particularly like those structures. The card networks point out that Internet transactions represent a disproportionate percentage of charge-backs and fraud. To make payments more secure and to reduce merchant's liabilities for fraud and certain charge-backs, Visa introduced the so-called Verified by Visa (VbyV). It is hoped that the introduction of such applications will increase consumer confidence in Internet-based card payments. At the same time, card-based payments are not yet well suited for either small-value (micro-payments) or large-value payments. Whether the recently introduced smart cards combining the virtues of all cards and other e-banking characteristics (in a chip embedded in a card) will make cards suitable for micro- and large-value payments remains to be seen.

In order to find an alternative to card-based system, a number of alternative Internet payment initiatives have been launched. The first-generation systems (including initiatives such as Digicash, CyberCash and Cyber-com) were wound down after encountering severe problems. Micro-payments, which were also considered in the mid-1990s to be a viable mechanism for transactions of intangible goods (information, online entertainment and others), have not taken off as expected, at least not yet.

The main problem with these first-generation Internet payment initiatives is that they were not focused enough on their customers' behaviour and attitudes. Most of them appeared to be hasty steps in the search for more efficient and lasting solutions. They combined considerable technological sophistication with a degree of marketing and business naivety. They also became trapped in a vicious circle: merchants would not offer e-payment schemes if few customers used them, while customers would not use e-payments if few merchants accepted them.

Despite the poor record of the first wave of e-payment schemes, the development of Internet-based payment has not slowed down but instead has broadened in scope. Online payments continue to attract new entrants, including cyber-entrepreneurs backed by venture capital and well-known IT providers such as Microsoft and Yahoo. The range of proposed solu-

tions is becoming wider and currently includes, virtual points providers (e-centives.com, mypoints.com), P2P (peer-to-peer) payments (PayPal, BillPoint, PayDirect, eCount.com), virtual escrow systems (escrow.com, tradesafe.com), digital wallets (Yahoo Inc., Microsoft Passport), virtual and smart cards (Visa, American Express, Mastercard), and electronic bill payment and presentment or EBPP (e-route, billserv.com, Check-Free Transpoint).

The multiplicity of online payment methods reflects the continuing search for standards in the industry. Moreover, online payments devices are now becoming more diversified by moving from PC workstations to mobile devices and Internet enabled television sets.

One of the successful payments solutions with the potential to organise online payments for small SMEs and microenterprises is Paypal. While still relying on traditional banking accounts and card infrastructure for actual fund transfers, it has managed to capture from the card associations the online P2P payments market. The payment architecture of Paypal combines innovation – the use of e-mail for payment notification and confirmation, account management and its integration into existing payment systems. Using existing networks Paypal plays the role of a merchant by keeping the books of e-mail transactions as its own and settling a large proportion of them. Paypal's income is derived primarily from the float on accounts, which it manages, complemented by fees charged to purchasing customers and service providers. This business model allows Paypal to undercut the traditional merchants, particularly for small businesses. This arises, for instance, in the context of online auctions, where buyers and sellers need a sure, secure and cost-effective payment mechanism to settle their transactions. Paypal has also benefited from having a close association with the leading cyber-auction operator, E-Bay (25 per cent of E-Bay payments go through Paypal). A system such as Paypal can capitalize on viral marketing, as each user of Paypal encourages his or her friends and business acquaintances to open an account.

Further expansion of global e-payments systems: Visa, Identrus and SWIFTNet

While payments card associations such as Visa, Mastercard and American Express were already at the forefront of Internet based payments (and are now moving towards their further diversification), the banking industry was also changing its attitude – from being reactive to proactive. The creation of Identrus

and the migration of SWIFT, the most important global interbank payments network, to the Internet under the SWIFTNet programme were among the most visible examples in that respect.

The largest payment card association, Visa has continued to experience a spectacular growth in its payments traffic. Between 1985 and 1997 Visa transactions increased from \$100 billion to \$1 trillion; they then doubled, reaching \$2 trillion in 2001 (Visa International 2002). However the share of e-commerce related payments is still low and concentrated mainly in the B2C sector. While continuing to upgrade its e-payments modules based on PC workstations, Visa is exploring new payment devices such as mobile phones, palms and computers (m-payments), Internet powered TV sets (t-payments), offline payments between electronic devices in proximity (p-payments) using infrared or Bluetooth technologies, and payments initiated by voice sensitive technologies (v-payments). As far as SME servicing is concerned, Visa has developed several solutions, including Visa Business (permitting SME buyers to have a short-term trade credit limit embedded in the limit of a given card), Visa Distribution (permitting large wholesale suppliers to automate the account receivables from SME buyers), Visa Purchasing (permitting larger enterprises to streamline procurement process) and Visa Commerce (a non-card-based B2B payments model). Such models are *inter alia* helping to integrate SMEs into online payments and in particular familiarizing them with larger company standards. Visa and other card companies were among the leaders in developing a critical technology of the smart card. This technology has been used in South Africa, for instance, to create financial infrastructure for people without banking accounts. In the medium term, the smart card might provide secure and cost-effective support for specialized payment and settlement services, *inter alia* for SMEs, including those operating in the informal sector.

The SWIFT network is a core element of the global payment infrastructure. Like Visa, it is experiencing an impressive growth in the volume of its operations. From 1991 to 2001 SWIFT message traffic increased from less than 0.4 billion to 1.5 billion messages a year. Daily traffic in 2002 peaked at close to 8 million messages a day. Most SWIFT payments are directed towards Europe, while Fedwire continues to dominate payments in the United States. SWIFT has cooperated with European central banks to support their real-time gross settlement systems, serving as a common messaging service for the majority of high value payment

systems in the euro zone. Its role in providing market infrastructures is also expanding, as it is becoming a messaging hub for clearing and settlement in securities, using Global Straight Through Processing (STP), and in foreign exchange trading, using Continuous Linked Settlement (CLS) systems, which are in its turn linked to Real-Time Gross Settlement (RTGS) one.

From the standpoint of the global payment infrastructure, the December 2000 decision of SWIFT to migrate to a new IP-based network, SWIFTNet, represents a major milestone.

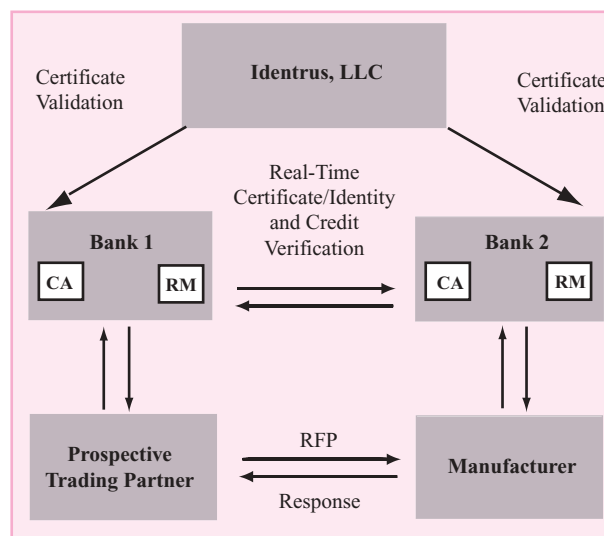
It is expected that SWIFTNet will combine IP standards with highly secure, high-performance networks, owned and operated by SWIFT. The principal SWIFT application, FIN, starts to migrate to SWIFTNet from August 2002 and will form SWIFTNetFIN, a fully IP based application. As a result, all SWIFT customers will have to migrate to the Internet. It is expected that SWIFTNet will offer a wide range of other services, including information, security and payments. SWIFTNetFIN's ambition is to become the infrastructure of choice for the new generation of Internet technologies based payment systems and related services.

To run the above-mentioned systems requires nearly 100 per cent security standards. Many security arrangements have been proposed in order to achieve such a result. The most notable arrangement is Idenrus, a United States based organization created in early 1999 and owned by 42 global financial institutions, which act as Idenrus Certificate Authorities for corporate customers in more than 133 countries. Idenrus seeks to create a global trust infrastructure, based on Public Key Infrastructure (PKI) enabling business-to-business (B2B) commerce among all companies using this infrastructure. The Idenrus network will link in a structured and hierarchical way various security and certification systems created by its member banks. The Idenrus itself will operate a root certificate authority (root CA), an entity at the pinnacle of the electronic identity hierarchy. Idenrus' legal and technical infrastructure is based on a set of uniform system rules, contracts and business practices for comprehensive trust and risk management (UNCTAD, 2001).

In December 2000, four major banks – ABN AMRO Bank, Bank of America, Deutsche Bank and HypoVereinsbank – joined with Idenrus and deployed trust-enabled B2B applications.

In 2000, Idenrus announced a strategic alliance with SWIFT. The introduction of IP standards will allow

Chart 27
The Idenrus scheme



Source: http://www.idenrus.com/story_03.xml

SWIFT members and users to have single interfaces with various infrastructures and services.⁷

Transactions in denominated notes are still the main payments method for SMEs. Although handling cash is extremely expensive and cash balances do not earn interest, cash is still used even in developed countries. For example, at the end of 2001, the total amount of United States dollars in circulation was around \$620 billion (i.e. \$2,200 per capita). Even if one assumes that 75 per cent of that amount was used abroad there is still \$550 per capita for United States residents. The scale of cash transactions is higher in Europe and even more so in Japan, not to mention the developing and transition economies.⁸ In developed countries the ratio of payments to gross national product (GNP) is very high, but in developing countries it is much lower; this indicates that in those countries money circulates less rapidly and that there are lower levels of formal financial intermediation.

The need to participate in e-commerce and the requirements for entering the chain of online payments are constantly pushing SMEs to adopt the culture of online payments. Similarly, the increasing shares of online retail and wholesale payments in overall payments are generating increased SME participation in online payments.⁹

Some of the above-mentioned payments systems, mainly B2C, could also be adapted to SME and micro-enterprises requirements. At the same time B2B payments methods are also making inroads. Medium-sized and large enterprises are seriously considering

using electronic invoice presentment and payment (EIPP, a B2B cousin of EBPP) in inter-enterprise payments. According to experts, online EIPP cuts costs related to online handling of accounts receivable (AR) and accounts payable (AP) in comparison with their paper versions, by more than half. In the European Union and in many other countries, since digital invoices are now legally acceptable, it is possible to process EIPP and EBPP. In many cases these systems are run by banks, to which enterprises outsource their receivables and payables activities. The reason for outsourcing is the reluctance of enterprises to make large investments while establishing those systems in-house. Also, outsourcing enables them to cut even further the costs related to handling the e-invoices traffic.¹⁰

Most SMEs, especially in developing countries, still operate mainly in their national markets. However, this should not prevent them from using the Internet for payments. In fact, the Internet's main use – as far as e-payments are concerned – is for domestic payments. For example, in 1999 domestic payments represented 99 per cent of the volume and 86 per cent of the value of all payments transactions. According to a projection by Boston Consulting Group, while between 1999 and 2009, international payments might experience high growth rates and could increase from \$238 trillion to 510 trillions, their share in overall payments will probably increase by 3 per cent, from 14 to 17 per cent. The same consulting group projects much higher growth rates for domestic payments in developing and transition economies during the same decade (The Boston Consulting Group, 2002).

Developing countries' initiatives

According to a World Bank survey, the average online banking penetration for developing countries by the end of 1999 was close to 5 per cent (World Bank, 2001). For some countries, the penetration was considerably higher and growing rapidly. At the same time, according to a survey by Citibank, United Arab Emirates, user preferences related to banking channels are as follows: bank branch – 12 per cent; ATM – 0 per cent; Telephone banking – 0 per cent; online web based banking – 76 per cent; mobile phones – 12 per cent.¹¹ In other words, the developing countries are also voting for Internet banking.

In Brazil, the number of e-banking users reached 8 million in 2001 and is growing rapidly. Most Brazilian banks have followed the click and mortar strategy and also entered into strategic alliances with leading Internet service providers (ISPs). Thus Banco Itau entered

with AOL into an agreement to bring its customers to AOL services offering free access and customized features facilitating access to e-banking. Today, the majority of the leading Brazilian banks, including Banco do Brazil, BNDES, CEF, Bradesco and Banco Itau are offering advanced e-banking services and nearly a quarter of their client base has already migrated to the Internet. Moreover, SMEs are active users of online banking. Thirty per cent of Banco Itau SME customers are operating online. Unlike in Argentina, Brazilian banks have managed to preserve the real value of their customers' deposits in spite of a period of high inflation rates. As a result, with a high level of banking intermediation (65 per cent of the population) Brazilian banks have espoused Internet banking, which has been well received by both consumers and enterprises, while dollarization and disintermediation in Argentina created a demand side problem for banks and thus discouraged them from investing in Internet banking (Oliveira, 2001). At the same time, increased insecurity in the streets due to social unrest or crime is prompting many users to opt for Internet banking, so as to avoid physically visiting a bank. Thus the crisis in Argentina led to a short-term increase in the use of Internet banking.

Mexico is another leader of Internet banking in Latin America. It adopted legislation providing for the development of both e-commerce and e-finance. One of the local leading banks – Banamex – has over 1.25 million users of Internet banking, including 50,000 companies, mostly SMEs (Martinez-Guerra, 2002). The Mexican subsidiary of the Spanish bank BSCH has launched P-market, an online market place linking SMEs with various suppliers. The bank offers online functionalities to allow SMEs to manage their finance online, and has developed an online procurement system, called Procura Electronica. The bank experienced a rapid increase in the number of its online clients in the first year of operation.

India, one of the leaders in software development, has an advanced online banking system. Over 50 banks offer online services. The example of the largest private bank, ICICI Bank, is really impressive. It has multiplied by four the number of its online banking users, who represent over 15 per cent of the total. Its SME department is a leader in the design of wholesale e-finance credit lines for Indian SMEs. E-banking permits business process re-engineering to achieve zero latency leading to improvements in customer service levels and better risk management because of real-time settlement. While the argument for drastically reducing transaction costs is more debatable in India owing

to low e-banking adoption rates, low labour costs and “free” existing branches, there is a better price discovery process as more and more markets gain integrated real-time and improved access to these trading and data-dissemination platforms. At the same time, however, many changes are still required in technology, access infrastructure and banking regulation. (Mor, 2002; Kumar 2001).

In Bangladesh there is a large gap between the computerization of foreign banks and that of local commercial banks (the gap is particularly great in respect of local public commercial banks) and as regards the state of their intra- and inter-branch online networks. However, 75 per cent of local banks are planning to introduce e-banking, which implies very dynamic improvements in their ICT use indicators. Virtually all banks use banking software at their head offices and during the past few years around one third of local banks has become SWIFT members. Credit card and point of sale services (POS) are already provided by a quarter of local banks, while ATM and internet banking are expanding rapidly especially in major cities (Raihan, 2001).

In regions lacking adequate telecommunication infrastructure, technologies that make it possible to store and transact value in proximity and offline are taking root. Thus smart cards based on Visa Horizon proximity technologies are being introduced in Ghana and some other African countries. The Visa Horizon and Visa Electronic systems could be of particular interest to microenterprises in remote rural areas. In countries with low banking penetration or where there is mistrust towards local banks, the establishment of basic ATM cards for employees, issued by well-known payment card companies, makes it possible to cash salary cheques, and this represents a step towards establishing banking relationships *inter alia* through e-banking.

Finally one of the most impressive records has been achieved by the Republic of Korea, which has higher than the OECD average e-commerce and e-finance indicators. Internet banking in that country has increased at a rapid pace, the number of online users having risen from 2 million in 2000 5.3 million in December 2001. The country is a leader in the region with 54 per cent of users having multiple online banking relationships (Korea Times Infotech, 2002). The Republic of Korea is also leading in online brokerage and in mobile banking. In South-East Asia Internet banking is also developing rapidly in Thailand, Malaysia, Singapore and to a lesser extent, in the Philippines. Apart from North and South Africa the Sub Saharan

Africa is the region that is seriously lagging behind in Internet banking, although it is giving to the rest of the world the good example of microfinance developments.

D. International electronic trade and finance systems

Designed to facilitate the movement of goods and services, trade finance systems rely on complex flows of complicated and traditionally paper-based documents, and this makes the whole process slow, costly and error-prone. Hundreds of billions of dollars are being spent annually on processing the paperwork associated with international trade.

For several years, various participants in international trade have sought to simplify the process and migrate from paper-based to electronic documents. This task has been laborious and often frustrating because of the difficulties in defining common standards.

The advent of Internet technologies has the potential to significantly accelerate the progress towards fully electronic trade finance. However given the fact that trade finance related payments are only a small part of the overall payments traffic, the banks have had to make hard choices either to retain trade payment and finance functions for themselves, or to outsource them and save on transaction costs while keeping the client base.

The need to outsource trade services was the main reason for industry-wide, private initiatives to create global online platforms centralizing the servicing of the trade cycle and in particular the trade finance part. Those platforms have the potential to service the trade and trade finance needs of SMEs. The following is an outline of Bolero, Tradecard and CCEweb.

Platforms for digital trade documents: Bolero, Tradecard and CCE web

Bolero International Ltd. is a United Kingdom based joint venture of SWIFT and the TT Club (an association of freight insurers) created in April 1998. The aim was to create a platform for the secure electronic transfer of commercial trade documentation and data worldwide via the Internet. The platform went live in September 1999, with SWIFT operating the system under contract to Bolero (UNCTAD, 2001).

Bolero maintains that it acts as a neutral and trusted third party that provides the so-called Core Messaging Platform for highly secure delivery and receipt of all trade related electronic documents and payments. In addition to a common technology platform, bolero.net provides a unified legal structure that binds together all parties involved in international trade (importers, exporters, shipping agents, freight forwarders, customs and international banks). The messages between users are validated and acknowledged while the Title Registry application facilitates, online, the transfer of ownership of goods. After extensive consultation with the industries, Bolero issued a Rule-Book, which allows disputes to be resolved in the same way as with paper documentation. In addition Bolero allows for the application of the provisions of eUCP, the electronic version of Uniform Customs and Practice for Documentary Credits (UCP) of the International Chamber of Commerce (ICC). Bolero has also developed a value-added service called SURF, which matches trade documentation online between buyers, sellers and banks in order to accelerate all trade transactions and reduce error rates.

At present, SWIFT operates the Core Messaging Platform on behalf of bolero.net. It is planned to be one of the first services to migrate to SWIFTNet. In order to demonstrate its commitment to Internet technologies and their tangible benefits, Bolero and its users have developed BoleroXML, a set of specifications which describe the standard structure and contents of the electronic version of a common trade document such as Commercial Invoice, Bill of Lading and Packing List. UN/CEFACT has recently endorsed BoleroXML as a migration path to the ebXML standard. Bolero is committed to providing an open solution that runs over the Internet.

TradeCard is a United States company developing an online substitute for the traditional bank-based letter of credit (L/C). It intends to make it a trust building platform for the process of online negotiations in trade transactions and related payments. It was launched in 1997, and went live on the web in 2000 (for more details see UNCTAD, 2001).

TradeCard focuses on what is often considered a critical bottleneck in international trade transactions: lack of an inexpensive and efficient system for cross-border trade payment settlement. In March 2001, TradeCard introduced an automated, collaborative, global trade settlement platform which is intended to streamline and automate the processing of virtually any pay-

ment transaction, whether it is domestic or cross-border, guaranteed or open account, large or small.

Initially, the banks were reluctant to accept the new competitor. But currently TradeCard works with a dozen international banks and has entered into strategic partnerships with Coface as payment insurer, Marsh, the largest broker of cargo insurance, MasterCard and Thomas Cook, as well as with Cap Gemini Ernst & Young.

CCEweb is a Canadian company, which has based its @GlobalTrade - an electronic payment and trade management system - on the eUCP and existing trade services banking infrastructure. The company launched its initiative in September 2000 and has built strategic partnerships with Adobe, CGE&Y, China Systems, Identrus, SITPRO and Visa International. While retaining the existing rules and banking practices to which the trading community is accustomed, it tried to create simplified electronic versions of a letter of credit as well as streamlining the flow of electronic trade related documents. CCEweb states that it has developed arrangements to streamline operations for both exporters and importers. It hopes that the banks will find its centralised platform a useful tool to out-source costly L/C related operations. While it did not challenge the existing practices on L/C unlike TradeCard, and did not create a parallel rules book unlike Bolero, it did try not only to adapt those instruments to the Internet, but also to develop easy and fast-track versions of e-L/Cs. The @GlobalTrade system allows the printing of the original electronic bill of lading and other trade-related documents in countries without enough technological capacity to cope with PKI solutions or legal and insurance structures to support them. CCEWeb also intends to start the use of passwords and pin numbers with clients especially from developing countries that do not yet have possibility to integrate into PKI systems. They will thus have electronic signatures (Katsman, 2002). Passwords and pin numbers are especially important for developing countries' financial service providers and SMEs.

The systems claim to bring about major savings in costs and time through electronic processing of trade and especially trade finance documents. CCEweb might be the most user friendly one, while Bolero is the most secure one. At the same time alternative arrangements implemented by TradeCard introduce more competition into the system and push costs further down.¹²

Bolero was an initiative of major financial industry players, while Tradecard and CCEweb are private ventures. Although all are now operational, none of them has yet become profitable. To remain operational, they still need financing, including venture capital financing and the issuance of new shares or debt financing.

Other companies active in facilitating cross-border trade payments via the Internet include LC Connect, Proponix, Actrade, FinancialOxygen, Qiva, ClearCross and Xign Corp.¹³

E-forfeiting marketplaces: ITFex and LTPTrade

Based in New York and in London respectively, ITFex and LTPTrade are B2B exchanges, created in 2000, that seek to develop an Internet-based secondary market for international trade finance instruments such as forfeiting bills, bankers' acceptances and shipping guarantees.¹⁴

At present, this is an extremely fragmented and illiquid market, with an annual trading volume estimated at \$75 billion in 2000. Celent Communications estimates that Internet technologies will stimulate the emergence of an electronic trade finance instruments market, whose value by 2005 should total over \$700 billion. At the same time, Celent recognizes that the growth of the electronic trade finance market will be slower than that of e-markets for other instruments such as bonds or equities. This is due not only to the disparate nature of trade finance instruments but also to the weaknesses of established automated trading mechanisms, such as matching, and of pricing benchmarks.

It is too early to judge the prospects of ITFex and LTPTrade, their development plans having been adversely affected by the general slowdown in B2B commerce. Both exchanges are now operational. In September 2001, LTPTrade launched a new release of its trade finance transaction and information platform. Key features of the new platform include improved offering and dealing functionality, as well as expanded research and information resources.

Developing countries' experiences

Emerging markets are expected to continue to be the main growth engine for the trade finance sector. Last year, trade finance flows between the United States and Western Europe diminished, whereas in Eastern Europe, Latin America and Asia, trade finance experienced high growth rates.

The total volume of L/Cs received by all Latin American exporters in 1999 reached \$87 billion, in addition to the \$29 billion in documentary collections. Of this total, only \$30 billion came from Latin America's trade with the rest of the world including the United States. Intra-regional trade is often made up of medium sized to large companies that lack open-account trade tools and rely on old-fashioned and expensive L/Cs.

This creates an opportunity for financial institutions seeking to offer electronic trade finance services. Banks such as Bradesco and Banco Itau in Brazil and Banamex in Mexico, seek to develop online wire transfers, online initiation of L/Cs, and other related online services. Sixty-five per cent of Mexican companies surveyed use at least one of the above mentioned products, and more than half of the companies in Mercosur countries turn to high-tech trade finance tools. Argentina used to lead in the proportion of companies using technology products (58 per cent), but Brazilian companies use them more extensively than other Mercosur countries - 2.8 products on average per company in Brazil versus 1.7 products on average per company in the other countries.

However, local banks, large though they may be in their own country, suffer from a lack of global coverage. This explains their interest in global initiatives such as TradeCard and Bolero. Global banks such as Citibank, JP Morgan, Chase and ABN Amro are, of course, very active in this area and offer not only competitive pricing on trade financing products but also access to their networks and platforms. And when they cannot beat their local competitors, they co-opt them. In July 2001, Citibank bought Banamex for \$12.5 billion.

In other parts of the world, e-finance trade initiatives are still in their early stages. In India for instance, Exim Bank, the German-based West LB and IFC (a World Bank affiliate) created in March 2001 a joint venture Global Trade Finance (GTF) Pvt Ltd to offer factoring and forfeiting services to Indian exporters. West LB has a 40 per cent stake in the venture, while Exim Bank has 35 per cent and IFC 25 per cent. In addition, the company has foreign currency lines of credit from both West LB and IFC, as well as a rupee line of credit from Exim Bank. GTF was set to begin operations in autumn 2001. One of its objectives was to allow exporters to initiate their transactions online.

A more ambitious project, Global Trade Finance Network (GTFNet), seeks to facilitate the finance of trade debt receivables generated primarily from emerging

markets, their acquisition and distribution worldwide. It is defined as a cross-territory extranet-based “business to business” network, with headquarters in Singapore and hubs in the United Kingdom, the Middle East and the Americas. Founded by Tara Kimbrell Cole and sponsored by a prestigious board, which is chaired by the former Chief Executive Officer of Standard Chartered Bank, GTFNet is not as yet operational.

E. Online credit information and credit insurance systems

The Internet provides a great deal of information about many companies through the use of search engines. However, relying on this source may not provide reliable information about risk. A proprietary credit information database on companies’ performance, both as payers and suppliers, based on data from partners, experts, and actual transaction and debt collection experiences, is the type of source required to manage the credit and performance risks. Such Internet-based databases are run not only by banks but also by specialized agencies. Some of them are mainly credit information providers such as Dun & Bradstreet and Equifax, while others are credit insurers such as Coface and Gerling NCM. In addition to providing credit information on companies, they cover traders’ risks. Credit insurance is a less expensive alternative to bank-based letters of credit, which permits traders to rely on open account payment operations, thereby moving the counterparty risk to the credit insurer.

Counterparty risk is particularly important in the case of SMEs, as their trade is often hampered by a perceived lack of creditworthiness or of a supply performance record, owing to the absence of reliable data and information about SMEs.

The Internet makes the collection of credit risk information easier but credit risk management tasks more complex. By reducing the cost of information and standardizing data formats, it makes it easier to gather and disseminate credit information. It also facilitates integration of information and transactions. At the same time, the Internet considerably expands the number of potential counterparties and the range of transactions. Businesses active online have to deal with thousands of new buyers and sellers that they know nothing about. There is therefore a need for a quick and up-to-date creditworthiness assessments. The skills required for this activity are highly specialized and cannot be acquired overnight. Prior experience

and accumulated historical data are essential. Barriers to entry are high. Not surprisingly, this segment continues to be dominated by a small group of suppliers, each of which has adopted an aggressive Internet strategy. These strategies have common elements, for example all suppliers make their existing data available via the Internet, but there are also significant differences. Alternative approaches to credit information assessment, using innovative technologies, are also emerging. However, those approaches are being adopted and deployed by the existing suppliers rather than by new entrants.

Online credit information: Dun and Bradstreet, and Equifax

Dun & Bradstreet (D&B) is probably the oldest existing provider of business information (since 1841). It created the so called D-U-N-S Number (Data Universal Numbering System), which has become a standard for keeping track of millions of businesses in the United States. The system is also expanding worldwide. It provides identifiers of single business entities, while linking corporate family structures together. The D-U-N-S Numbers include parents, subsidiaries, headquarters and branches of more than 62 million corporate family members in 120 countries.

D&B is implementing a comprehensive Internet strategy to provide Internet-based services. Among those online services is D&B Global Access Toolkit, an online global data delivery service, and QuickBooks®, a business decision making tool for SMEs. D&B also seeks to become an important player in B2B e-commerce. To achieve this goal, the company entered into strategic partnerships with Oracle, Siebel Systems, SAP and other B2B players to integrate D&B products into their offerings. In August 2001, VeriSign, Inc., the leading provider of Internet trust services and domain name registration services, and Dun & Bradstreet announced an agreement under which e-businesses applying for VeriSign’s Shared Hosting Security service will be automatically authenticated by Dun & Bradstreet using the company’s global database (for more details see UNCTAD 2001).

The core business of Equifax is credit reporting, and enabling and securing global commerce. It has developed a range of diversified services, including transaction processing, direct marketing, customer relationship management and e-commerce security solutions. In July 2001, Equifax spun off its payment services into a separate company, Certegy.

Equifax's principal asset is the world's largest repository of consumer credit information. In January 2001, Equifax launched a new service – the Small Business Financial Exchange. Managed by Equifax, the Exchange brought together initially 15 of the largest United States small-business lenders – such as Bank of America, Bank One and Wells Fargo – in order to provide reports and maintain comprehensive trade data on small businesses. This has become a source of aggregated risk and exposure information on an estimated 25 million small businesses in the United States. The Exchange will enhance lenders' ability to make small business credit decisions and facilitate financing needs for this important segment of the economy.

Equifax Internet based products include Equifax Secure, Checkfree and SunTrust, which permit the identification and authentication of participants in online transactions. Another product, ePORT, tries to lower costs, speed up delivery and increase product penetration for the existing credit information services. Strategic alliances have been formed with Veri-Sign, Paymentech and PricewaterhouseCoopers.

Online credit insurance: Coface and Gerling NCM

The Coface Group, headquartered in Paris, is one of world leaders in export credit insurance and operates in 93 countries on five continents. Coface offers an integrated range of guarantees, including credit insurance, guarantee insurance, exchange risk cover and fidelity insurance, to its client companies worldwide. It also provides receivables management and credit information services. In order to allow its clients to analyse and monitor the financial position of their trading partners throughout the world, Coface has developed a Common Risk System, an online database containing information on 41 million companies, out of which 1.2 million are from developing and transition economies. Coface has a credit exposure of \$150 billion to 2.2 million companies, of which \$15 billion i.e. 10 per cent, is the cover for companies from emerging economies. According to Coface, the overall performance of companies from emerging economies is not worse than that of OECD countries, which indicates the potential for enterprises from the emerging countries to access external finance and e-finance.

In December 1999, Coface launched a web-based rating system, @rating, that allows companies to insure trade debts and obtain credit limits online. The @rating system uses the data from the Common Risk Sys-

tem to develop a simple and easily accessible credit rating system, which allows a company to:

- Check a trading partner's reliability online;
- Protect transactions online. Apply for an @rating Quality Label and obtain a credit limit online;
- Check payment experience online.

@rating provides a method of assessing trade debts of less than six months' duration for amounts between 1,000 and 100,000 Euros, which represent the overwhelming majority of most traditional trade and e-commerce transactions. It offers a simple means for trading partners to protect themselves from the risk of default and to set customer credit limits, based on constantly updated information. For the first time, ratings are generated by an agency, which can in addition insure the risks it is rating. The Coface Group and its partners in Credit Alliance are backing the rating with a guarantee of payment, using credit insurance policies.

To facilitate its risk monitoring capability, Coface expanded @ratings to cover country risks (data on 140 countries are provided and regularly updated). All Coface group products now incorporate the @rating solution. Since its launch, some 350 partners (banks, factors, electronic marketplaces, Chambers of Commerce, etc.) have integrated the @rating in their service offering (UNCTAD, 2001; Cazes, 2001; Boccara, 2002).

Gerling-NCM (G-NCM) emerged at the end of 2001 as one of the largest global credit insurer after the merger of Gerling Namur with Dutch NCM. Gerling Namur was the result of the previous purchase of Belgian Namur by German Gerling. It has an active Internet strategy and its two main services are called E-Service and E-Trade. The E-Service permits the actual or potential insureds, brokers and other interested parties to access the G-NCM credit information database using the Internet based SERV@NET system. The database has information on company performance, policies and so forth. It is complemented by the group's Intranet called SERV@WORK, which gathers information on risks and is used as a tool for underwriting risks in all countries where G-NCM is present.

The E-Trade products represent various types of insurance cover. Those products include Trusted Shops, covering buyers from failed online shops (non-

delivery, non-refund, fraud etc.) and Trusted Trade, providing e-marketplace participants with credit insurance cover against the loss of receivables. Other insurance and financing products to render one-stop-shop financial services to those participants are also in the pipeline. They also include eCredible, in-sourcing online credit management services from companies and insuring their credit risks, for example verification of buyers, collection of receivables in time, credit monitoring and payment guarantee and Trade Cover, which offers online immediate coverage against risk of non-payment of a buyer or group of buyers (it is not a comprehensive credit insurance against all buyers) and gives the insured a choice of protection level. The eCredible and Trade Cover are in some ways competing with the Coface @rating system (Rennotte, 2001).

It is important to note that credit information and credit insurance providers are not resolving the problems of market instability. While diminishing the risks of other companies' failures, they themselves could be exposed to the excessive demands arising from their obligation to insureds if their counterparties massively fail to respect contractual obligations in the event of a generalized economic crisis. In that case, credit information providers will find their prestige damaged because of the excessive number of errors in their judgement of credit risks, while the credit insurers might encounter difficulties in meeting their cover obligations even if their capital reserves meet the requirements of insurance regulators.¹⁵

Many developing countries are following the examples of the United States and continental Europe by developing the necessary regulatory framework for setting up of credit information reporting systems. The essential elements of that framework include registration laws, bankruptcy laws, court registers; strict requirements for disclosure by private sector operators; public data dissemination and publishing requirements; the possibility of collecting, processing and disseminating public records, suits and judgements, and permission to access companies track records with banks for authorized institutions, etc. However, the presence of credit bureaux in many countries does not guarantee the presence of exhaustive and updated data on SME payments behaviour and other key risk assessment data. The revolutionary impact of Internet data mining techniques in terms of coverage and reach, rather than transaction costs, could also boost the creation of a credit information industry in those countries, thus achieving a breakthrough in the risk assessments of a host of companies, including SMEs.

One of the most impressive examples of comprehensive credit information services in developing countries is Serasa of Brazil. Established in 1968 by Brazilian banks that realized there was a need to have a common risk data collection and assessment centre, Serasa today has the largest credit information databank on institutional and household borrowers in Latin America. Receiving information from companies and households directly and also gathering information on them from independent sources (including court distributors, protest notaries, boards of trade, Central Bank, public registrars and official publications), Serasa contributes to the majority of decisions by banks, payment card companies and other financial service providers on extending credits to companies and households. All products and reports of Serasa are available online. They include business behaviour reports, credit and analysis reports, and special SME reports. While Serasa has a very aggressive e-credit information programme to expand on the Internet it is also actively using other communications tools as fax, telephone and others (Bedrikow, 2001, 2002).

F. Private equity mobilization

It is a widely shared misconception that, in the early stages of their existence, SMEs could raise capital from venture capital funds. On the contrary, those funds provide equity only to well-established SMEs with a good track record including good financials. Initial capital for a new business comes normally from the businessmen's own pockets or the pockets of their relatives, friends and so-called business angels – wealthy individuals ready to invest in the business plans, which are of interest to them. Normally business angels are organized into associations. They support companies of their choice and pave the way for venture capital funds to invest. The latter take over SMEs having good chances to become large companies and in few years time further finance their expansion in order to prepare them for the initial public offering (IPO), i.e. selling their shares – and making, they hope, a large profit – on the well-established stock exchanges, where the firms become publicly quoted companies.

The Internet has introduced a new dynamism into the functioning of above institutions, permitting them in some cases to go for global initiatives and geographically diversify their portfolios.

All large business angel associations and venture capital funds have functional websites where the SMEs

can look for interested investors by filling in the posted questionnaires and thus establishing initial contact with potential investors.

Linking private equity investors to SMEs in emerging countries is far more challenging than in OECD countries. With few exceptions such as Singapore, there is no local venture capital industry. And business angel networks are often family or ethnically based. Nevertheless, some efforts, spearheaded by international players, have been launched to create Internet-based private equity networks.

EmPower Link

In January 2001, the United Kingdom's International Development Consortium (IDC) established a joint venture called Empower Link Holdings (Pty), with the South African investment fund Omega. The idea was to take the EquityLink, its very successful business angel network created in 1995, into South Africa, linking it with United Kingdom and European opportunities. EmPower Link was supposed to provide support services to South African SMEs, including management development, financial management, business development, sales and marketing, IT, and innovation in technology and design. It was expected to contribute significantly to the development of a comprehensive SME support infrastructure in South Africa.

Softbank Emerging Markets

In February 2000, Softbank, one of world's best-known Internet companies, announced the creation of a joint venture with the International Finance Corporation (IFC) of the World Bank Group to establish start-up Internet companies in as many as 100 developing countries. The joint venture is an investment fund called Softbank Emerging Markets (SBEM), to be based in California's Silicon Valley on a capital base of \$200 million. Seventy-five per cent of this will come from Softbank and the remaining 25 per cent from the IFC.

To begin with, SBEM will act as an incubator, investing in and providing advice to promising local Internet ventures in 10 to 20 countries. SBEM plans to establish a number of holding companies to make investments and oversee operations of local joint ventures in those countries. The first local office was opened in Malaysia.

G. Microfinance initiatives

Microfinance is an arrangement whereby microfinance institutions lend small amounts of money typically to a group of individuals or very small SMEs (with fewer than 10 employees). This process mainly happens within the framework of the informal economy, i.e. outside the formal financial system in developing countries and transition economies. It is estimated that more than half of economic activities in sub-Saharan Africa derive from the informal economy. While the microfinance market requirements are estimated to be \$300 billion, the assets of more than 8000 microfinance institutions worldwide do not exceed \$7 billion. Keeping microenterprises out of the reach of the development community is unacceptable, considering the UN targets for the reduction of world poverty. The approach here should be to consider the poor as an untapped resource rather than a social burden. Developing modern and inclusive microfinance actively using Internet technologies could help partly to implement this paradigm shift.

Pride Africa

Pride Africa is a non-profit United States company with regional offices in Nairobi and operating activities in East and Southern Africa. It is one of the best examples in Africa of a successful and imaginative implementation of microfinance formulas with the active use of modern ICT technologies. With a network of 54 branches servicing more than 100,000 clients from Kenya, Malawi, United Republic of Tanzania, Uganda, and Zambia, Pride Africa has created a replicable franchise, including a proprietary software system, uniform operational processes and training for staff. The financial and information service network provided by Pride Africa offers microfinance opportunities for local people and small enterprises that previously had no access to flexible financing, owing to rigid banking regulations and the information monopolies of government and large businesses (Campaigne 2001, 2002).

Grameen Bank

The famous pioneer of microfinance, the Bangladeshi Grameen Bank, is also at the forefront of the efforts to bring e-finance to remote villages, using its microfinance services. By introducing POS terminals and diffusing smart cards in different villages it enables users to read and record entries, and to deposit and withdraw cash.

Virtual Microfinance Market

The Virtual Microfinance Market (VMM) is an information exchange system designed to facilitate interactions between microfinance institutions (MFIs), private investors, Governments and other participants in the microfinance market. It was developed by the United Nations Conference on Trade and Development (UNCTAD), with the guidance of an advisory board, and in the framework of a technical assistance project financed by the Government of Luxembourg.

VMM also provides contact and financial information on MFIs willing to mobilize commercial funding (“demand”), information on the legal and regulatory conditions of investment and links permitting direct contact with regulatory authorities in each country (“environment”). In addition, it also provides data on investors and financial intermediaries, information on conditions attached to past or current offers (“supply”), and access to sources of knowledge, technical advice and training in state-of-the-art techniques and tools for improving MFIs’ financial management and access to capital markets (“knowledge”).

This project is aimed at creating sustainable market links between the commercial investment world and the microenterprise sector in developing countries. It is expected to permit the investment on commercial terms, of millions of dollars at the grass-roots level and the creation of thousands of jobs. VMM is accessible free of charge to all its members, i.e. to all duly registered information providers (Otero, 2001).

H Lessons from global e-finance experiences

E-finance: it is only the beginning

The above overview of enterprise related e-finance, while far from comprehensive, clearly demonstrates the breadth and the depth of e-finance development. The dotcom crash and the difficulties of B2B marketplace development over the last two years may have changed the public perception of the Internet and slowed somewhat the speed of its deployment but they have not changed the fundamental momentum of e-finance. In the not too distant future the distinction between finance and e-finance might become somewhat blurred as the core financial technology, from user interface through middleware to applications and networks, will probably become Internet-enabled and Internet-based.

However, the process of evolution towards e-finance is still in its early stages. For one thing, Internet technology will continue to evolve towards larger bandwidth, fixed-wireless convergence and terminal access independence.

Four common misconceptions

Beyond the technology, it is essential to understand the business dynamics of e-finance. On this score, it appears that there are four common misconceptions about e-finance, which help to explain some serious strategic errors, frequently committed by overenthusiastic promoters of e-finance.

Cost reduction potential

There is no doubt that the Internet has the potential to reduce financial transaction costs. However, the cost reduction potential has often been exaggerated or misinterpreted. The cost dynamics of e-finance are quite complex. For one thing, in order to achieve the full potential of cost reduction, it is important to create a fully automated system, capable of straight-through processing. Such a system may require large investments in computing power, network building and programming capability. Furthermore, the costs of migration from closed to open i.e. Internet-based architecture are often very high. For that reason, many e-finance enthusiasts favoured a “pure play” model, creating an Internet bank from scratch. The underlying assumption was that the newcomers had a crucial cost advantage. However, this assumption proved false. Whatever cost advantage newcomers may have achieved via technology, it was decisively undermined by the need for heavy client acquisition spending. Furthermore, while technology cost savings were often hypothetical, marketing costs were actual expenditures, amounting to between \$150 and \$300 per customer. While such costs could be justified in online broking, this was not the case for Internet banking. The Internet did not invalidate the basic marketing rule that the cost of selling a new product to an existing customer is 10 per cent of the cost of selling to a new customer. A large part of Internet costs remain invisible at first glance, but they are still there (GEF, 2001b).

Ease of implementation

A related fallacy was ease of implementation. While a basic website can be created cheaply and quickly, to design and implement a fully functional, industrial-

strength application capable of accommodating in a secure manner a large number of complex transactions and a huge variation in volume is a complex and protracted undertaking. In addition, there is limited previous experience to draw on and the necessary skills and know-how are still scarce. Thus, the potential for specification creep and cost overrun is as large with the Internet as it is in the traditional IT environment. This was vividly demonstrated by Vontobel Bank in Switzerland, which in spring 2001 announced a loss exceeding 120 million euros, due entirely to an overly ambitious Internet banking project.

Disintermediation

Contrary to some high-profile pronouncements, the Internet economy is not frictionless. Actually, with a dramatic increase in the number of transactions and expansion of the universe of potential relationships, the overall level of friction is likely to increase. The abundance of information, opportunities and relationships increases the need for new intermediation structures and mechanisms. The challenge to the financial institutions and financial services providers is not disintermediation but the changing nature of intermediation. Thus, e-finance has stimulated the emergence of new categories of intermediaries such as financial portals, transaction aggregators and financial applications services providers.

The e-finance impact

Until 2000 it was commonly thought that e-business would revolutionize the financial industry and destroy the existing “dinosaurs.” However, the evolution of e-finance clearly demonstrates the advantages of suppliers of established financial services, be they banking, transaction processing, credit information or insurance, as long they have the capacity to evolve and to embrace the new approaches and technologies. The dominant business model today is “click and mortar” and an innovation is most likely to succeed if it is adopted by the leading players. This does not mean that financial services will not change, as they have been doing for the last few decades. Rather, the change will be more gradual and will probably take place mainly inside the established systems and structures. While the dynamics of e-finance do not entail a sudden upheaval, it probably will lead to a profound and lasting transformation of financial services. Not only the access be broadened in terms of the number of potential users, but also these services will be available anywhere in the world, 24 hours a day, seven days a

week. E-finance will enhance the information and technology content of financial services and thus further blur the boundaries between finance and technology, information and transaction, and financial institutions and technology providers. This evolution raises, among others, a number of substantive regulatory issues. In particular, banking, securities and insurance regulators should further strengthen cooperation within and between their groups at both national and international levels.

I. E-finance challenges for SMEs

SMEs and e-commerce

Before engaging in e-finance, SMEs have to be already involved in e-commerce. Hence the e-commerce preparedness of SMEs is a measure of their readiness for e-finance. Although the Internet revolution was driven initially more by SME dotcoms than by large corporations, the majority of SMEs in traditional sectors are still lagging behind the large companies in the use of the Internet as a core element of business organization and a channel for developing e-commerce. Various surveys of SME e-preparedness in OECD countries suggest that only less than a quarter of SMEs with web presence actually use it as a business instrument, i.e. for the purpose of active web trading and related e-payments operations. In developing countries this indicator is much lower. The majority of SMEs still limit their activities to maintaining a web page, with various levels of links and advertising. On the Internet they also gather information about markets and competitors, as well as searching for partners, with further negotiations taking place either through e-mails or offline, while successful deals are generally completed in a traditional manner, – that is, with traditional paperwork or through the use of cash. According to some surveys, SMEs cite security concerns, lack of legal guarantees for online transactions, expenses related to hardware, software and maintenance, and the length and cost of training as the major impediments to starting e-commerce.

At the same time there is much less awareness in developing countries of the potential and importance of e-commerce. In that sense it is interesting to note the results of a Citibank survey of a sample of SMEs in Arab Gulf States (Saudi Arabia, United Arab Emirates, Kuwait, Qatar, Bahrain and Oman) and Middle Eastern or Mashreq countries (Egypt, Lebanon and Jordan) that inquired about their e-commerce preparedness. While the majority of SMEs surveyed - 79 per

cent and 73 per cent respectively - had access to the Internet, only 23 per cent and 38 per cent provided the Internet to all their departments, only 13 per cent and 18 per cent provided it to their procurement departments, and only 2.6 and 2.3 per cent had actually ever conducted online trading. Moreover, 45 per cent of Gulf and 25 per cent of Mashreq SMEs did not have a positive approach to e-commerce, considering it less secure and of lower quality, and preferring traditional trade as a better business tool (Krishnan, 2001). In contrast, many SMEs in Latin America and Asia, and North and South Africa, do have access to the Internet. However, what matters is whether they consider it the tool for promising business models. Various surveys suggest that this is increasingly so for the majority of them.

The Internet provides SMEs with a unique opportunity to overcome economies-of-scale limitations by aggregating buyers and suppliers, i.e. linking individual SMEs to each other, to major companies, to e-procurement chains and to other e-marketplaces. For example, a Tunisian start-up, Intelligent DSP, works with the New Delhi office of Analog Devices to develop remote monitoring services for electrical power meters. More broadly, successful e-commerce initiatives facilitate the emergence of new forms of business organizations such as virtual hubs and networks. By streamlining their operations and business relationships e-commerce helps to create a supply chain management for SMEs and overcome the high trade barriers they normally face. Increasing the role of buyer feedback helps to make production more customer-centred and flexible. Creating many portals for SMEs with useful and functional contents greatly contributes to their efforts to access business information at much lower cost and hence to overcome the information asymmetry problem.

Among private sector efforts to facilitate SME access to e-business opportunities, mention may be made of the business portals specially designed to offer rapid and convenient answers to a variety of small business needs. The challenge is to maintain a range of services that are both easy to find and effective. Banks have also launched SME-oriented business portals in order to ensure customer loyalty and create a basis for Internet-based banking services for SMEs.

Despite its recent slowdown, most analysts expect the B2B e-commerce market to grow substantially in the coming years. The Gartner Group forecasts that the worldwide B2B e-commerce market will reach \$7.3 trillion by 2004. Initially, many B2B initiatives focused

on so-called big-ticket deals among large enterprises, thus overlooking the great potential for SME involvement. However, further changes are rapidly correcting this initial miscalculation. Efforts to involve SMEs more actively in B2B markets take two forms: adapting large exchanges to the specific needs of SMEs and developing specific exchanges for SMEs. Although many SMEs see B2B markets as a way for large buyers to put additional pressure on suppliers to lower their prices, they understand the importance of emerging e-markets as supply channels for their products. As a result, many SMEs are doing their best to adapt to the requirements of the global procurement platforms of large manufacturers.

The large e-marketplaces could cover a comprehensive range of B2B services for SMEs. That range includes supply chain management, e-procurement, SME's specific web service providers and exchanges. In particular, those bundled services might include web page creation, hardware and software integration and ISP connection, and low-end security products at affordable prices. One of the key problems of SMEs in the emerging economies is their unfavourable sectoral mix. Most SMEs, which are active in traditional sectors, lack export capability. The lack of high-technology SMEs is certainly a major handicap for many emerging economies and an obstacle to the development of locally based e-commerce. On the other hand, the growth of the Internet provides an opportunity to create new businesses specializing in new technologies. However, in order to realize this opportunity it is necessary to have access to technology and to create an environment capable of nurturing the new businesses. In the OECD countries, successful high-technology businesses are often concentrated (clustered) in small geographical areas, where they can obtain access to a wide range of resources, including technical skills, academic research, financial expertise and development know-how. More importantly, such clustering favours informal as well as formal contacts. Silicon Valley in the United States, Silicon Glen and Cambridge in the United Kingdom, Sophia Antipolis in France are often quoted as examples of high-tech clusters.

Such clusters also exist in developing countries such as India (Bangalore) and Malaysia (Penang). The transition economies are also trying to draw on their relatively developed workforce and education and R&D centres to accelerate the use of the Internet in their economic activities. At the same time other emerging markets are also trying to catch up. Thus, recent projects in Africa and Middle East specifically oriented

towards Internet-based technologies include El Ghazala in Tunisia, Gauteng Innovation Hub in South Africa and Internet City in Dubai (UNDP, 2001a). Given Dubai's role as major trade hub in the region and its liberal trade and investment regime Internet City may become a well-connected multifunctional technology hub. Many well-known foreign hi-tech companies have already opened offices there.

Support to SMEs is being provided at both international and national levels. In this connection, mention may be made of the G8 initiative (Global Marketplace for SMEs) and the EU initiative (Go Digital). There are many other initiatives by national Governments and other public entities. Some of them are of a very general nature, while others are more specific, trying for example to create investors' networks, including business angels and venture capitalists for SMEs, or to provide access to the services of local export financiers (the United States Department of Commerce's Export Finance Matchmaker). Although many of them tend to overlap, they still cannot meet the huge demand from SMEs. Linking those networks together might help to do so. However, neither the Global Information Network for SMEs, nor the European Observatory of SMEs seems to have managed to create a network of networks devoted to e-commerce information for SMEs.

Although the developing countries also have their own programmes for modernizing SMEs, their capacities are much more limited. This makes it important for global and regional organizations, including the UN family, regional development banks, NGOs and others, to further expand their awareness-raising and technical and financial assistance activities in that field to support the SME sector in developing and transition economies. In this connection development of e-commerce with emphasis on SME needs is definitely part of the mandate of the ICT Task Force created by the UN Secretary General. While it is hard to overestimate the advantages of the Internet for SMEs, it will require a great deal of awareness-raising and technical assistance from the international community to facilitate SME's participation in e-commerce.

SMEs and e-finance

E-finance includes Internet banking and payments, e-brokerage, e-insurance and other related services. Internet technologies have now penetrated all aspects of the financial services industry, including retail and wholesale, back office and front office, information and transaction. SMEs also use the bank lending and

trade finance channels and are highly dependent on the quality of credit information related to their performance and financial health. E-finance of immediate interest to SMEs in developing countries includes Internet banking and payments, e-trade finance, online credit information and related e-credit insurance and e-factoring operations. Microfinance shares a number of features with SME finance; it is also similar to household finance and can be considered to be a combination of both those forms of finance.

The e-commerce practices of SMEs in developing countries raise the question of their ability to gain access to Internet banking, online payments, online trade finance and Internet based credit information databases.

In developing and transition economies there are many innovative initiatives to launch or facilitate e-finance for SMEs implemented by local banks, financial companies or other public and private sector based organizations and associations. The following are examples of some successful models and new initiatives.

SMEloan

SMEloan serves mainly the needs of SMEs in Hong Kong, China. The company offers Express Loans of up to HK\$ 1 million, approved within one minute of submitting an online application. This allows business owners to obtain financing instantly. In practice, most SMEs borrow modest amounts. However, SMEloan offers possibilities of borrowing more than HK\$ 1 million, using more time-consuming procedures. The innovative approach of SMEloan was to finance SMEs with lower transaction costs and better results by leveraging Internet resources, thus making it possible to set up scalable lending operations based on knowledge of future cash flows, i.e. receivables of SME borrowers. By providing a home page to each borrower SMEloan requires borrowers to provide business data; these are automatically analysed by its risk diagnostic software, which gives early warning of any unusual operating trends manifested by the borrower. Only selected problematic borrowers are then addressed. The others receive quasi-automatic credit approval similar to that given by a credit card company. In that sense, SMEloan is different from a bank that treats SMEs like other companies and hence incurs higher unit costs from SME lending since it demands from SMEs complex sets of documents and assigns individual managers to each SME borrower. The successful SMEloan model attracted the attention of IFC of the

World Bank Group, which has invested \$20 million in this promising venture.¹⁶

Streamlining SMEs cash flow or pre-financing online

Banks in many developing and transition economies are exploring possibilities of using online finance instruments to streamline the cash flow of SMEs on the basis, for example, of better management of their receivables, especially when the counterparts are the payables of large companies considered by banks to be much better risks. Here banks play the role of a factor discounting the receivables of SMEs. The situation is more complex in the case of trade between SMEs. In this connection, credible and searchable live Internet based databases on SME risks initiated or created by SMEs associations themselves could be a solution. Moreover, the creation of mutual insurance funds by association members could serve to support bank's e-trade finance operations and thus reduce the level of their perceived risks (De la Pardo, 2001; Guglani, 2001).

Smetrix e-trade finance clearinghouse proposal

An interesting initiative is the Smetrix B2B trade and e-trade finance clearing house proposal. Smetrix is a company in the Philippines that is trying to address the problem of more rapid and less costly access by SMEs to trade finance through the creation of a global e-supply chain in which a central clearing house handles the problems of authentication and risk assessment of SMEs. The clearing house, using its own database or partners credit information on SMEs, is expected to be able to create propitious conditions for SMEs either to have their online receivables discounted or receive structured finance (handling the risk of a given transaction) from a participating bank, or to securitize those receivables, capitalizing on the higher corporate rating grades of their trading partners (Pascual, 2001).

Major players are apparently starting to support the idea of financial clearing house based on the Smetrix concept. According to Smetrix it is expected that General Electric will provide the necessary technology support, while IBM will provide the technology support for the clearinghouse and interfaces with banks. The HSBC Capital Markets service might take the lead in terms of developing a real-time trade financing system using large corporations with good credit risk ratings as anchors for enhancing the receivables of their SME suppliers. At the same time Citibank might back-

stop the electronic collections and settlements for those receivables, while Dun & Bradstreet through its Philippines subsidiary could deliver the online credit and evaluate the SME receivables.

The Small Business Guarantee Finance Corporation, which is the Philippine Government's financial institution ensuring financing and guaranteeing for SMEs, is committed to taking the lead in delivering guarantees on the receivables. It is interesting to note that the Philippine Central Bank considers supporting this type of SME access to e-finance to be a part of its microfinancing agenda.

While in some respects the system is reminiscent of Bolero, it has some distinctive features. Like Bolero, the Smetrix clearinghouse is intended to be a hub bringing together all trade related workflows and checking the authenticity of electronic documents. Also, it is expected to reconcile the contents of those documents, and this will permit online negotiations and confirmations between parties, thus facilitating the conclusion of deals and minimizing further disputes. At the same time it is supposed also to be a constantly updated electronic library on credit information related to the trading participants. That library is intended to be constructed through the supply of information from partner banks and credit information and evaluating companies, as well as through the clearinghouse's record of trading partners' successes and failures.

However, the claim that a clearinghouse such as Smetrix one eliminates risks is clearly an overstatement. While it can successfully handle the risks related to the authentication of partners or legal issues related to trade, it cannot fully control the risks related to the supply performance of the seller and the payment commitments of the buyer (in spite of mechanisms for upgrading credit risk). SMEs remain more vulnerable as trade partners because of their higher exposure to the vagaries of the economic cycle.

Policy implications

Promising first signs

The positive signs related to e-finance for SMEs in developing countries include:

- The high level acceptance of technology by customers and financial institutions;
- The many innovative approaches;

- The initial tangible results in terms of market access and revenue generation.

However, most projects have not yet been launched on a large scale. It is therefore too early to determine which ones are likely to be the most successful and provide the “best practice” benchmarks to be replicated in other countries. Many aspects of the key question as to when and how e-finance will fundamentally change the conditions of SME’s access to e-finance still remain to be resolved. Nevertheless, from the experience so far, a number of key challenges can be identified. Some of these challenges are discussed below.

Adapting global technology to local requirements

While Internet technologies are global and standardized, their applications can and need to be adapted to local circumstances. The Internet offers an amazing capability to reconcile global uniformity with local flexibility. It facilitates cross-border links, but at the same time creates new configurations of networks and clusters. Distinctions between proximity and remoteness remain highly pertinent, even if the distance becomes virtual rather than geographical.

The most successful e-finance stories in developing countries, including those of banks such as ICICI Bank of India, Banco Itau of Brazil and Banamex of Mexico, emphasize the ability to respond to local requirements in terms of product mix and delivery channels. The need to localize financial solutions is even greater with regard to e-finance for SMEs, which for the most part operate within a limited geographical area. Furthermore, their characteristics, size, financial structure and sectoral mix can vary considerably even within the same country or region.

Strengthening public support

Most e-finance developments have taken place through the interplay of competitive market forces, with limited public sector intervention. Some of them, particularly in Internet banking, have been launched by foreign institutions. The situation is quite different in the case of e-finance for SMEs, where public sector intervention is quite frequent. It is not only that the public authorities have to create the broad framework for e-commerce development (appropriate legislation and technological infrastructure, to mention the two most important) but also that they need to ensure that SMEs take advantage of the new environment and the

opportunities it creates. The great majority of developing countries SME success stories with regard to involvement in e-commerce were largely the result of initial public sector support.

However, while public sector involvement in e-commerce promotion appears to be of critical importance in many cases, it differs in many respects from traditional government interventions. It is more flexible and proactive and relies less on administrative edicts and more on cooperation with the private sector. Rather than maintaining stability, it promotes innovation. The new modus operandi often entails setting up specialized agencies or decentralizing support measures to local governments, for example in countries such as China and India.

Creating an adequate regulatory and institutional framework

To facilitate the implementation of programmes, developing countries need to play a proactive role in encouraging the rapid adoption of market friendly laws and regulations, including laws on e-commerce, electronic contracts and digital signatures. It is equally important to ensure effective coordination of government agencies, industry associations and other facilitators. At the same time, while e-finance and e-commerce do not eliminate borders, they make them more porous. The Internet may also allow companies and households to circumvent regulations and restrictions. For example, in spite of exchange controls in many developing countries, households and companies still manage to open accounts with foreign banks or brokerage houses via the Internet. The Internet makes the use of offshore companies and banks even easier. The downside is that the Internet offers new opportunities for fraud.

Without a robust regulatory framework, the development of e-finance and e-commerce might be jeopardized. However, if such a framework is too rigid and formal, it may discourage innovation and entrepreneurship and, more importantly, deter the informal sector from engaging in e-commerce. In the end, e-finance and e-commerce will succeed only if they create a stable physical and virtual infrastructure of trust, shared by all parties concerned, including public authorities, local and foreign entrepreneurs, financial services providers and customers, and not the least SMEs.

Creating and maintaining an environment based on trust is essential in order to attract private foreign cap-

ital and know-how, as well as financial and technical assistance from international development agencies and NGOs.

Mainstreaming SMEs towards e-finance

Improved tax regimes and simplified regulations, as well as other support measures, will permit SMEs to move towards the formal economy. This will include comprehensive reporting on their assets and liabilities, thus allowing them to be listed in Internet based credit information databases. That might create a fundamental positive change in the financial community's perception of SMEs as credit risks. In turn, the SMEs will be encouraged to participate in the e-finance revolution and use online banking and payments as part of their common business practices, while as trusted clients they might start to receive online trade finance and eventually investment. This conclusion is valid not only for the overwhelming majority of SMEs in developing countries but also for SMEs in developed countries.

Finally, it is important to mention that the majority of recommendations of the UNCTAD expert meeting on e-finance for SMEs held in 2001 stressed the role of active policies and public-private cooperation in such vital areas as the creation of an adequate regulatory and institutional environment for e-finance, the development of secure and legally binding methods of electronic transmission and the introduction of modern e-finance instruments.¹⁷

J. Conclusions

The critical mass of e-finance and e-commerce resources, know-how and actual operational experience is concentrated in a limited number of large private sector companies, headquartered in OECD countries. Those companies provide key elements of infrastructure, networks, systems and applications. They operate globally, in terms of both sourcing and selling their products and services, and the emerging economies are the natural extension of their outreach. Many developing and transition economies are trying hard to find their niches in this new globally networked economy.

Various global e-finance projects have been created by banks such as Citibank, HSBC and Deutsche Bank, payment card associations such as Visa and Mastercard, and some others. Examples include CitiBusiness and the Visa Business Card. It is worth mentioning

that the financing of households and microenterprises i.e. so-called microfinance initiatives, are also currently under scrutiny by banks and the international development community. For example, Deutsche Bank has created a Microcredit Development Fund, which has contributed to the creation of many microfinance institutions.

One area in which cooperation is essential is the development of global online banking and payments platforms such as SWIFTNet and Identrus, which are the key elements of the emerging new global e-finance architecture. As their design and implementation evolve, they should take into consideration the e-finance requirements of developing countries. So far, those platforms have tended to focus mainly on the needs of global corporations, although payment and settlement services for SMEs operated by trusted banks in developing countries also need to be a part of the global systems. Among other things, careful consideration should be given to the issue of interoperability between global and local e-finance platforms.

Global trade and information platforms such as @ratings and Bolero present a somewhat different challenge. These platforms explicitly cover developing countries and SMEs. However, for the platforms to offer full benefits, both the quantity and the quality of information about the SMEs have to be enhanced. To be listed in platforms such as @ratings, SMEs need to provide reliable figures with timely updates. The Internet offers the means of lowering costs and reducing the length of this task. However, it is still a complex process, particularly for the SMEs. Hence there is a need for closer cooperation with and between existing credit information companies in developing countries, as well as for the creation of companies providing those services in countries where they do not yet exist.

Many experts raise the issue of leapfrogging, which gives countries with underdeveloped financial systems the possibility of moving ahead rapidly. The arguments developed above suggest that while opportunities for leapfrogging exist, it is not certain that they are widespread. Countries with weak financial systems also often suffer from the absence of technological infrastructure and associated skills, which makes the creation of a vibrant e-finance system quite arduous. To build a cyberfinance offer from scratch requires the mobilization of high-level skills in the financial, telecom and IT sectors, which many developing countries do not have and cannot develop without external support. The examples of countries such as Estonia and the Republic of Korea, which have achieved e-finance

sophistication comparable to that of most advanced OECD countries, are not easily replicable. Furthermore, even the more advanced emerging economies have to make large number of improvements in critical systems and applications such as trade finance hubs or financial markets in order to achieve the required level of competitiveness. Nevertheless, it is true that e-finance offers more opportunities for quicker deployment and better coverage than the traditional approaches to financial systems development. Skip-

ping magnetic strip technology in Poland by directly installing smart chip technology and advanced acceptance terminals to backstop online payment systems is an example of leapfrogging. At the same time while the evolution of Internet technologies holds considerable promise for e-finance and e-commerce, it also increases the complexity of the underlying systems and applications. For the developing and transition countries, the challenge ahead will be to build capacities, particularly local expertise to manage these complex systems.

Notes

- 1 The expert papers and the UNCTAD documents are listed in the References. To access them go to those two e-finance events on the UNCTAD e-commerce website www.unctad.org/ecommerce
- 2 See also UNCTAD 2001, Chapter 7, “Managing Payment and Credit Risks Online: New Challenges for Financial Service Providers”, pp 143-169
- 3 See www.jmm.com
- 4 See www.onlinebankingreport.com/resources/sr7.html
- 5 See www.datamonitor.com.
- 6 See, for example, “Reinventing branch banking”, Forrester TechStrategy Report, March 2002.
- 7 See www.visa.com; www.identrus.com; www.swift.com.
- 8 Rogoff (2002, pp. 56-57).
- 9 For a detailed discussion of the mechanics of online payments see UNCTAD (2001, Chapter 7).
- 10 “E-invoicing: ready to take off?” in CFO Europe, Economist Intelligence Unit Country Briefing, 22 April 2002.
- 11 Citibank UAE Newsletter, issue 02, 2002
- 12 See www.bolero.net; www.tradecard.com; www.cceweb.com
- 13 See for example www.lconnect.com; www.proponix.com
- 14 See www.itfex.com; www.ltptrade.com
- 15 See www.dnb.com ; www.equifax.com www.coface.com; www.cofacerating.com; www.gerling.com/credit/
- 16 “IFC Invests US\$20 million in SMEloan (Asia)”, IFC Press Release No. 1/158, 12 December 2001
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