



INFORMATION FOR DEVELOPMENT PROGRAM

**SCALING UP INNOVATION AND  
ENTREPRENEURSHIP IN DEVELOPING COUNTRIES:  
*THE ROLE OF PRIVATE SECTOR FINANCE***

***SUMMARY OF PRELIMINARY  
FINDINGS & RECOMMENDATIONS***

**April 18, 2006**

*This report was commissioned by infoDev and prepared by Economisti Associati srl in collaboration with Zernike Group BV and Meta Group srl*

## FOREWORD

It is generally accepted that small and medium size enterprises (SMEs), particularly micro and small enterprises, in developing countries have great difficulty in obtaining the necessary financial resources to effectively scale up and grow their businesses. Access to traditional growth capital, including debt and equity, is not only limited in developing countries but often prohibitively costly due to various factors such as insufficient legal and regulatory policies, and inadequate financial markets.

The development community has tried to address this challenge by creating microfinance lending instruments and private sector investment intermediary institutions, including those supported by the International Finance Corporation (IFC). Microfinance has made considerable strides in improving access to capital for individuals seeking USD \$10 to more than \$1,000 to start or expand a business. Similarly, the IFC and other investment institutions have improved access to capital for established firms seeking USD \$5 million and above to expand their operations nationally and internationally.

Despite the success of these efforts, the development community has yet to address effectively and sustainably the challenge of access to capital for SMEs seeking USD \$50,000 to \$1 million to scale up their businesses and attract private capital markets. For SMEs competing in technology sectors, the challenge of accessing growth capital is particularly acute as these firms possess few tangible assets that can be leveraged as collateral for loans.

As part of *infoDev*'s work program on ICT-enabled innovation, entrepreneurship and growth, we are currently supporting over 60 business incubators in developing countries worldwide. Our work with these incubators and their tenant companies, as well as our analytical work on competitiveness and growth, has reinforced the fact that access to financing for ICT and ICT-enabled SMEs remains a significant impediment to private-sector innovation and economic growth.

In order to better understand these challenges facing technology entrepreneurs, *infoDev* has commissioned this study on "Scaling Up ICT-Enabled Innovation and Entrepreneurship in Developing Countries: The Role of Private Sector Finance." On April 27, 2006, *infoDev* and the Agence Française de Développement will convene a workshop with investors, donors and other experts to share their expertise and to discuss the preliminary findings and recommendations from the study.

Following the workshop, the study will be finalized and published by the end of June 2006.

### **About *infoDev***

*infoDev* is an international partnership of bilateral and multilateral development agencies and other key partners, facilitated by an expert Secretariat housed at the World Bank. Its mission is to help developing countries and their partners in the international community use information and communication technologies (ICT) effectively and strategically as tools to combat poverty, promote sustainable economic growth, and empower individuals and communities to participate more fully and creatively in their societies and economies. For additional information about this study or more general information on *infoDev*, please visit [www.infodev.org/innovation](http://www.infodev.org/innovation) or contact Seth Ayers, *infoDev* (email: [sayers@worldbank.org](mailto:sayers@worldbank.org) or tel: +1.202.473.4868).

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## ABBREVIATIONS AND ACRONYMS

AfDB	African Development Bank
AECM	<i>Association Européenne du Cautionnement Mutuel</i> (European Mutual Guarantee Association)
APEBI	<i>Association des Professionnels de Technologies de l'Information</i> (Morocco)
BPO	Business Process Outsourcing
CGS	Credit Guarantee Scheme
DFI	Development Finance Institutions
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EIB	European Investment Bank
EU	European Union
FFF	Family, friends and fools
FINEP	<i>Financiadora de Estudos e Projetos</i> (Brazil)
IADB	Inter-American Development Bank
ICT	Information and Communication Technology
ICTE	ICT-Enabled
IFC	International Finance Corporation
IFI	International Financial Institutions
IPO	Initial Public Offering
MBI	Management Buy in
MBO	Management Buyout
NFSIT	National Venture Fund for the Software and IT Industry
OECD	Organization for Economic Co-operation and Development
SEBRAE	<i>Serviço Brasileiro de Apoio às Micro e Pequenas Empresas</i> (Brazil)
SME	Small and Medium Enterprise
TOR	Terms of Reference
UNDP	United Nations Development Program
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development

## 1 INTRODUCTION

This report (the “Report”) has been prepared by *Economisti Associati* and the associated companies (the “Consultant”) within the framework of the *infoDev* commissioned assignment on “Scaling up Innovation and Entrepreneurship in Developing Countries: The Role of Private Sector Finance” (the “Assignment” or the “Study”). The overall objective of the Assignment is to analyze issues in the financing of small and medium enterprises (SME) in developing and emerging countries, with special reference to small businesses active in the information and communication technology (ICT) sector as well as in ICT enabled (ICTE) activities.

The Study involves two main phases. The **first phase** was devoted to a review of the main issues in the financing of small businesses, both in general and with reference to SME active in the ICT/ICTE industry. The **second phase**, currently ongoing, involves the review of financing conditions in selected countries in Latin America (Peru, Argentina, Brazil and Dominican Republic), Eastern Europe (Ukraine), Africa (Morocco, Senegal and Kenya), and Asia (India and the Philippines). This Report provides an overview of preliminary findings, based on the results of the first phase and of a first group of country studies.

The Report is structured as follows:

- ➔ Section 2 briefly elaborates on basic definitions and conceptual issues;
- ➔ Section 3 provides an overview of issues in SME financing, both in general and with specific reference to ICT/ICTE small enterprises;
- ➔ Section 4 presents the evidence resulting from selected country studies;
- ➔ Section 5 offers some preliminary recommendations.

## 2 BASIC DEFINITIONS AND CONCEPTS

**Definition of SME.** There is no universally accepted definition of SME. The definition retained in this Study is the one currently in use by the *World Bank Group*, which sets thresholds in terms of three variables, labor force, turnover, and total assets. In particular, the following definitions apply:

- ➔ micro-enterprise: up to 10 employees, total assets of up to US\$ 100,000 and total annual sales of up to US\$ 100,000;
- ➔ small enterprise: up to 50 employees, total assets of up to US\$ 3 million and total sales of up to US\$ 3 million;
- ➔ medium enterprise: up to 300 employees, total assets of up to US\$ 15 million, and total annual sales of up to US\$ 15 million<sup>1</sup>.

**Study Coverage.** As indicated above, the Study encompasses ICT and ICTE activities. **ICT activities** deal with the production, sale and servicing of ICT equipment as well as with a variety of service activities, ranging from telecommunications to software development and IT-related consulting. However, some of these activities are typically carried out by large companies (e.g. manufacturing of micro chips or broadcasting) and therefore are not covered by this Study. The **ICTE segment** includes those activities whose existence crucially depends upon the access to ICT technologies or, at a minimum, whose operating modalities have been significantly affected by the introduction of ICT technologies. This includes a wide range of customer care and administration-related service (the so called Business Process Outsourcing – BPO) as well as services with a higher technical content, such as remote testing, design and R&D.

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<sup>1</sup> See [http://www2.ifc.org/sme/html/sme\\_definitions.html](http://www2.ifc.org/sme/html/sme_definitions.html).

**Types of Financing.** This report is about enterprise financing and it is worth to clarify at the outset some terms that will be extensively used in the subsequent analysis. Three broad categories of financing instruments are considered, namely: (i) debt financing, (ii) equity financing, and (iii) quasi equity financing. In particular:

- ➔ debt financing is defined to include both traditional **bank lending** (be it short term – to cover working capital needs – or medium-long term – for investment financing) and other forms of financing that entail the reimbursement of a “principal” and/or the payment of an interest. Typical alternatives to bank loans are represented by **leasing** and **factoring**, which involves the discounting of receivables;
- ➔ equity financing includes private equity and public equity. **Private equity financing** is provided by two main types of agents, venture capitalists and the so called “business angels”, i.e. wealthy individuals, often entrepreneurs, with an inclination for investment in ventures promoted by others. Enterprises may have recourse to private equity at different stages of development. The main typologies of equity financing are briefly summarized in Box 1 below. **Public equity** is raised through the offering of shares to the public, which, in turn, typically involves the listing of the company in a stock exchange, through an initial public offering (IPO);
- ➔ **quasi equity financing** is a heterogeneous category, including a vast array of financing instruments. The most frequently used include: (i) convertible loans, i.e. loans that can be converted into equity (ordinary or preferred shares) under certain circumstances and at pre-agreed terms; (ii) shareholders loans and similar instruments (such as the *comptes courants d’associé* used in certain civil law countries); (iii) preferred shares, i.e. shares enjoying special rights, such as priority in receipt of dividends and upon liquidation, preferential voting rights and, sometimes, rights of conversion into ordinary shares (“convertible” preferred shares); and (iv) the establishment of unincorporated joint ventures, whereby the financier receives a royalty related to the performance of the company.

### **Box 1 – Typologies of Private Equity Transactions**

**Seed financing** relates to the research, assessment and initial development of a product or business concept. **Start-up financing** is provided for product development and initial marketing to companies that may be in the process of formation or that have been in business for a short time, but have not yet sold their product commercially. **Expansion financing** occurs at later stages, when the enterprise is progressively expanding its production base and/or commercial outreach and it is often done in successive rounds (first, second and third stage expansion financing). Finally, **MBO and MBI financing** is associated with fundamental changes in the enterprise ownership, often as a consequence of some “shock” (a period of poor performance, the disappearance or disaffection of the former owners, etc.).

The various types of financing mentioned above are often seen as **complements** but, to some extent, they can also be **substitutes** one for another. For instance, in contexts where medium-long term loans are scarce or particularly difficult to obtain, the rolling over of short term financing facilities can be used to finance capital investment. While this is definitely at odds with the principles enshrined in any corporate finance manual, it is a well known fact that such a mechanism was widely used in the early days of the industrialization process in a number of countries. Likewise, in countries where taxation discriminates against returns on equity or where the legal tradition has favored the emergence of business organizations that limit the free transferability of shares, public equity and “formal” private equity have been largely replaced by “informal” equity and by debt financing. The implication is that the financing structure (namely, the equity/debt ratio) of

enterprises may differ significantly across countries, reflecting the widely different business and legal culture and operating conditions.

**The Financing Gap Concept.** One of the main objectives of the Study is to assess the existence and, in case, the nature and origins of the financing gap confronted by small businesses in the ICT/ICTE industry. In this respect, two aspects are worth highlighting. First, the concept of a financing gap refers to a *shortage in the supply of capital* to meet the demand. However, it is important to stress that the notion of financing gap should not be mistaken with that of “absolute scarcity” of funds in a given financial system. Indeed, a financing gap (for a certain category of operators, sometimes in certain geographical areas) may well emerge even in cases when liquidity is abundant. Second, in discussing the nature and extent of a financing gap the attention is typically focused on the “supply side”, i.e. on constraints related to the behavior of the providers of finance. However, it is important to bear in mind that enterprises also make decisions about financing and, therefore, *constraints may also appear on the “demand side”*. This is especially the case of equity financing, as for various reasons entrepreneurs are often unwilling to relinquish part of their control over the company to outsiders. Indeed, this attitude, referred to as “control aversion” in the literature, appears quite widespread among SME.

### 3 ISSUES IN SME FINANCING

#### 3.1 Introduction

The theme of facilitating SME’s access to financing has attracted considerable attention from scholars and development practitioners alike. Initially, the problem was largely framed in terms of how to facilitate access to *investment financing* (i.e. the financing of discrete changes in the firm’s productive set up), with the attention mainly concentrated on the availability of “traditional” bank financing, in the form of medium – long term loans. Overtime, a more comprehensive approach to the SME financing problem has gradually emerged, encompassing *other financing needs* and less conventional financing instruments. Indeed, SME financing needs vary greatly, depending upon the nature of the lines of business they are involved. For instance, in certain labor and/or resource intensive industries (such as clothing manufacture and certain segments of agro-processing) the issue of investment financing is often of a minor importance compared with the need to finance long production cycles. Similar considerations apply to SME active in industries characterized by unfavorable payment terms and to export oriented SME, where the issue of financing working capital is often coupled with significant uncertainty regarding payments. This has brought about an increasingly wider recourse to forms of transaction-related financing instruments, such as factoring. In other industries (e.g. road transport), investment financing needs are substantial, but they largely relate to movable and standardized assets (trucks), that can be easily reclaimed and sold in secondary markets. This has led to the progressively widespread use of leasing that now represents a viable alternative to traditional bank lending to many SME.

#### 3.2 Obstacles to SME Financing

The economics literature on enterprise financing has identified three main obstacles that may impede an adequate access of SME to financing. These factors include:

- ➔ the existence of marked *informational asymmetries* between small businesses and lenders or outside investors;
- ➔ the intrinsic *higher risk* associated with small scale activities;
- ➔ the existence of sizeable *transactions costs* in handling SME financing.

A fourth problem very often cited in the literature (and loudly lamented by small entrepreneurs) is the *lack of collateral* that typically characterizes SME. Finally, these problems are often exacerbated by *institutional factors*, especially in the case of developing countries. These aspects are briefly dealt with below.

**Informational Asymmetries.** Informational asymmetries are always present in enterprise financing transactions. Indeed, the entrepreneur typically possesses privileged information on his or her business that cannot be easily accessed (or cannot be accessed at all) by the prospective lender or outside investor. In turn, this leads to two problems. On the one hand, because of informational asymmetries, the lender/investor may not be in the position to adequately differentiate between a “high-quality” and “low quality” companies and projects (the *“adverse selection” problem*). On the other hand, once the financing is granted, the provider of external finance may not be fully in the position to assess whether the funds supplied are being applied in an appropriate way (the *“moral hazard” problem*). To mitigate these problems, bankers and outside investors may adopt precautionary measures (e.g. require that financing be collateralized) and, ultimately, may simply turn down the request for financing (“credit rationing”). In the case of SME, the problems posed by informational asymmetries tend to be comparatively more severe than in the case of larger business. Indeed, the information that SME can realistically provide to external financiers (in the form of financial accounts, business plans, feasibility studies, etc.) often lacks detail and rigor. In the case of many *developing countries* (but not only), this problem is often aggravated by the low level of education of small entrepreneurs, who may not be in the position to adequately articulate their case. Also, in the (frequent) case of family owned SME, the information supplied to bankers and outside investors may not be fully accurate and realistic, and opaque behavior may prevail. Under these conditions, outside financiers tend to adopt a very cautious attitude towards SME and may well reduce the amount of financing sought or refuse it altogether.

**Risk Profile.** Another approach ascribes the difficulties faced by SME in accessing finance to their higher risk profile. Suppliers of external funds are more reluctant to provide finance to SME because they are regarded as riskier enterprises due to a number of reasons. First, SME face a *more uncertain competitive environment* than larger companies, as evidenced by more variable rates of return and higher rates of failure. Second, SME are comparatively *less equipped in terms of both human and capital resources* to withstand economic adversities. Third, the risk perceived by providers of finance is amplified by the *inadequacy of accounting systems*, which undermine the accessibility and reliability of information concerning profitability and repayment capacity. In the case of SME active in developing countries, the impact of all these factors is magnified by the generally more volatile operating environment that negatively impacts on the security of transactions (higher risk of not getting paid, assets sometimes not properly registered, etc.). In the case of SME active in *developing countries*, the impact of all these factors is magnified by the generally more volatile operating environment, that negatively impacts on the security of transactions (higher risk of not getting paid, assets sometimes not properly registered, etc.).

**Transaction Costs.** Irrespective of risk profile considerations, the *handling that SME financing requires is an expensive matter*. The cost of appraising a loan application (or, even worse, of conducting a due diligence exercise in view of a possible equity investment) is largely independent from the size of the financing under consideration. Administrative costs, legal fees, and the costs related to the acquisition of information (e.g. the purchase of a credit profile from a specialized agency) can be largely regarded as fixed costs, and it is more difficult to recoup them in the case of smaller loans or investments. Similar considerations apply to the costs that outside financiers must incur after disbursement, when conducting field inspections or attending a board meeting. Once again, the problem is comparatively more severe in *developing countries*, where the lack of adequate management information systems in financial institutions, the undeveloped state of the

economic information industry, and the poor state of certain public services (such as those responsible for the registration of property titles and collaterals) contribute to escalate transaction costs for SME financing deals. To some extent, the problem can be solved by raising the cost of financing (through a higher interest rate or closing fee), and this is indeed the approach adopted by many micro lending schemes, but this is possible only up to a certain limit.

**Lack of Collateral.** In the case of debt financing, collateral is requested by lenders in order to mitigate the risks associated with moral hazard. The lack of collateral is probably the most widely cited obstacle encountered by SME in accessing finance. And indeed, the amount of the collateral to be provided in relation to the loan size is a measure frequently adopted to empirically assess the severity of the financing gap. However, the argument is somewhat ubiquitous. In certain cases, the lack of collateral (i.e. the reduced capitalization of the enterprise) may be a consequence of the firm's young age and non established character, which has to do with the higher risk argument illustrated above. In other cases, the collateral that an SME can mobilize may be deemed insufficient in comparison with the size of the loan sought, meaning that the expansion project under consideration is excessively large compared with the current size of the firm (again, an issue related to the risk profile of the venture). In yet other cases, the collateral may be insufficient simply because the managers-owners tend to siphon off resources from the company for personal or other purposes. And again, this has to do with problems already illustrated above, namely the risk profile and the moral hazard issues. In other words, the lack of collateral must be regarded *more as a symptom rather than the real cause of the difficult relations between SME and providers of finance*. Whatever the sequence between causes and effects, it is widely acknowledged that in *developing countries* the issue of collateral is comparatively much more severe. As indicated below, in many cases, this is due to the undeveloped state of the institutional and legal framework (poorly functioning or non existent cadastres or registers of movable assets, ill defined property rights), which prevents the possibility of pledging the owned assets as collaterals.

**Institutional and Legal Factors.** In the case of many *developing countries*, the above mentioned obstacles to SME financing are exacerbated by the presence of institutional and legal factors. First, *concentrated and uncompetitive banking sectors* (sometimes, the result of restrictive government regulations) often result in the adoption of very conservative lending policies and/or in higher interest rates. Second, *insufficiently developed legal systems* may effectively prevent the development of certain financing instruments and/or the use of collateral as a risk mitigating element. For instance, legal provisions regarding security interests (how collateral is protected, how collateral priority is determined, etc.) are of crucial importance in determining the efficacy of collaterals. Likewise, if company laws offer only limited protection to minority shareholders, the development of venture capital and angel financing is inevitably negatively affected. These problems were particularly severe in former socialist countries at the beginning of the transition period, when even the memories of certain fundamental market institutions had disappeared. Third, even when adequate legislation is available, there are often *problems with enforcement*. For instance, cadastres and registers of movable assets are nowadays commonly found in transitional and developing economies. Still, their functioning is often less than ideal (missing or misplaced records, lengthy procedures for filing mortgages or pledges or for ascertaining the status of a certain asset, etc.) and cases of corruption among their personnel are not infrequent. Fourth, in many developing countries the *“information infrastructure” is still largely undeveloped* (lack of credit bureaus or of other mechanisms for collecting and exchanging information on payment performance) and this inevitably exacerbates the informational asymmetries between enterprises and lenders/investors. While none of these institutional factors apply exclusively to SME, it is obvious that small businesses are likely to suffer disproportionately from their presence.

### 3.3 Specific Issues Related to SME in the ICT/ICTE Industry

In the case of ICT/ICTE activities, the factors contributing to limit the access to finance to SME in general are also at play, and they are often aggravated by industry specific aspects.

**Informational Asymmetries and Transaction Costs.** In the case of ICT activities (a bit less so for certain ICTE businesses) the informational asymmetries characterizing any lending or investment decision are magnified by the *high-tech nature of the business*. This is particularly the case of commercial banks that only in few cases can count on loan officers with some experience in the variegated aspects of ICT. This inevitably contributes to increase transaction costs, as the economics of high technology firms is more difficult to value than the fundamentals of “brick and mortar” businesses. Similar considerations apply to the case of equity investments. Venture capitalists are, by definition, better equipped than loan officers to understand and capture the upside of a variety of different businesses. Still, the due diligence process of ICT/ICTE deals may require the deployment of specialized expertise that is not normally available to generalist venture capital funds. These negative elements are somewhat mitigated by the fact that ICT/ICTE small entrepreneurs are often more educated than their “low tech” counterparts, and therefore are in a better position to articulate the merits of their projects.

**Risk Profile.** Many ICT/ICTE businesses are involved in the continuous development of new products and in the use of new processes in untested markets. Therefore, as in any type of innovative activity, the distribution of returns is highly skewed and the *probability of failure very high* (in certain segments up to 70%). The intrinsically risky nature of ICT activities adds to the generally unfavorable risk profile of SME in general, resulting in a peculiarly unattractive picture for more conservative financiers.

**The Issue of Collateral.** In the case of ICT/ICTE the issue of *collateral is made more severe* by the intangible nature of innovation activities and of assets generated through such innovation. Indeed, not only are innovation-related assets difficult to value in monetary terms, but they also have little salvage value, in case of commercial failure. Therefore, innovation activities have limited collateral value in obtaining a loan. The severity of the problem obviously depends upon the specifics of different lines of business, with pure service activities being in a comparatively more difficult position. On the other hand, companies working on contract for foreign firms (as it is often the case for firms in the BPO segment) may rely on high grade accounts receivable as collateral. This may facilitate recourse to various forms of trade finance, such as factoring and forfeiting.

**Institutional Factors.** In the case of developing countries, the above fundamental problems are often compounded by the presence of institutional and legal obstacles that have a special bearing for ICT/ICTE activities. In particular:

- ➔ IPO are by far the preferred exit mechanism for venture capitalists. However, in most developing countries *stock markets are still undeveloped and thinly traded* while SME-oriented stock markets of the NASDAQ variety are largely non-existent. Such a limitation in exit mechanisms has an inevitable negative impact on venture capital operations;
- ➔ in many cases, venture capital funds prefer to use quasi equity instruments, such as convertibles or privileged shares. However, in certain countries *legislation does not accommodate for these types of flexible financial instruments*. Even when the relevant provisions are included in the legislation, the legal profession and the judiciary are sometimes unfamiliar with these instruments;
- ➔ in several developing countries *taxation is skewed in favor of debt financing* and this results in a powerful brake on the emergence of business angel activities, as well as on the fund raising capabilities of venture capitalists. In some developed economies (e.g. the UK), tax legislation is

effectively encouraging the involvement of wealthy individuals in high risk investment activities but similar schemes have been adopted by only few emerging and developing countries.

### 3.4 Measures to Support SME's Access to Finance

**Overview.** Over time a variety of measures have been adopted by governments, donors and IFI to facilitate SME's access to finance. Early interventions, dating back to the 1970s, largely focused on the establishment and/or reinforcement of state-owned *development banks*, which were supported in the creation of dedicated lending windows specifically targeted at SME. Starting with the 1980s, efforts to promote SME financing have adopted a four pronged approach, including:

- ➔ the establishment of *SME credit lines*, with funds channeled through commercial banks;
- ➔ the creation of *SME equity financing vehicles*, managed by professional “fund managers”;
- ➔ the promotion of *leasing* and, to a smaller extent, of *factoring*, through the establishment of dedicated financial institutions;
- ➔ the establishment of *credit guarantee schemes*, to alleviate posed by high collateral requirements.

**SME Equity Financing Schemes.** The establishment of SME equity financing vehicles is part of a general trend towards the “*globalization*” of the *venture capital industry*, whose activities have progressively extended well beyond the borders of the areas which saw its emergence, the US and, to a smaller extent, the UK. Equity facilities active in developing countries are funded with money provided in varying degree by private investors, international financial institutions (IFC, European Investment Bank, EBRD, etc.), and bilateral development finance institutions (Proparco, Finnfund, Swedfund, DEG, etc.). It is grossly estimated that some 70 – 80 of these facilities are currently in operations in emerging and developing countries, with the capital of individual funds typically ranging between US\$ 10 and US\$ 30 million. The development of SME oriented equity funds in developing countries has led to the emergence of some *specialized operators*, such as the US based *Small Enterprises Assistance Funds*, currently operating in some 15 countries in Latin America, South Asia, East Asia & Pacific, and Eastern Europe, South Africa's *Business Partners*, possibly one of the largest SME financing organizations in the world, and *Aureos*, a joint venture between the Norwegian and UK development finance institutions.

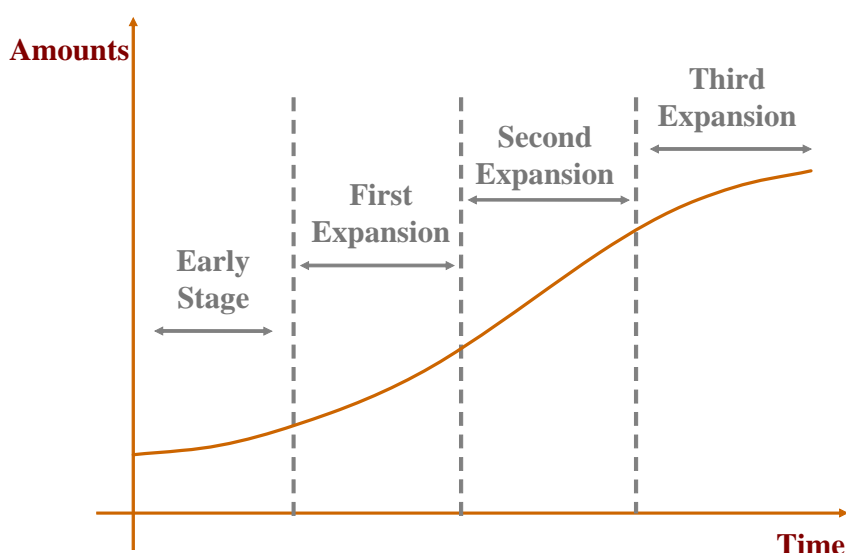
**Measures Targeted at the ICT/ICTE Sector.** SME active in the ICT/ICTE sector have also benefited from measures aimed at facilitating their access to finance, although at a considerably smaller scale of their “traditional” counterparts. Measures have typically involved the establishment of *equity financing facilities*, dedicated to the ICT/ICTE industry or, in more general terms, to “innovative enterprises”. At present there are about a dozen of these facilities in operations, with a concentration in India, Latin America (especially Brazil), and South Africa. Typically with a capital of less than US\$ 10 million, these funds are largely financed by government institutions, IFI and/or donors, although there are also examples of initiatives involving institutional investors. Examples of *IFI/donor funded or participated initiatives* include Brazil's *Companhia Riograndense de Participações* (participated by the Inter-American Development Bank and the IFC), the *Tuninvest Innovations* fund (co-financed by the EIB and by France's CDC PME), and India's *Swiss Technology Venture Capital Fund* (funded by SECO).

## 4 THE FINANCING GAP: EVIDENCE FROM COUNTRY STUDIES

### 4.1 Introduction

The financing needs voiced by small businesses in the ICT/ICTE reflect the diverse nature of the sector in the various countries analyzed, which encompasses recently established micro enterprises working in niche markets as well as more established operators, that have already gone through a couple of expansion phases. The amounts sought by ICT/ICTE companies vary accordingly, ranging from as little as US\$ 10 – 20,000 in the case of web designing operations in Kenya to several millions in the case of high profile Indian software houses striving to gain a foothold in the international market. The rationale for these financing needs is also varied, going from the funding of initial R&D expenses to the building up of working capital to the establishment of foreign branches to penetrate new markets. A useful framework for analysis is provided by the scheme in Figure 1 below, which subdivides the financing cycle of ICT/ICTE firms in four main stages.

**Figure 1** Financing Cycle for ICT/ICTE Enterprises



In particular:

- ➔ **Early Stage.** The initial stage depicted in Figure 1 above goes from the conception of the business idea to the moment when commercialization begins. In this case financing relate to both “seed stage” activities (R&D and initial development of the business concept) and “start-up” (product development and initial marketing efforts, prior to full commercialization);
- ➔ **Stage 2 – First Expansion.** This phase corresponds to the actual commercialization of the products/services developed in the initial stage. Financing requirements typically refer to the need of supporting market development, with the creation of adequate “production capacity” (i.e. the hiring of software engineers and technicians) and the build up of working capital;
- ➔ **Stage 3 – Second Expansion.** The second expansion phase is often associated with the launch of a new, upgraded version of the original product, which incorporates and systematizes the improvements gradually introduced during the first commercialization phase. In other cases, the second expansion phase involves some degree of diversification, with the introduction of new products/services which build upon the technical expertise acquired and/or on the connections established with certain clients;
- ➔ **Stage 4 – Third Expansion.** This stage of development is associated with a major change in the scale of operations, often associated with the scaling up of international operations. In this case,

financing requirements relate to the establishment of commercial subsidiaries and/or technical assistance centers abroad, as well as to a host of other internationalization-related expenses. A part from the largest countries analyzed, Brazil and India, only a handful of developing countries ICT/ICTE companies appear to have reached this stage of development.

## 4.2 Country Studies

The range of financing needs voiced and the severity of the financing gap experienced by small businesses in the ICT/ICTE industry can be illustrated with reference to three countries that are regarded as somewhat prototypical of the conditions found in developing countries, namely: Morocco, India, and Kenya.

**Morocco.** Morocco has a relatively small but lively *ICT sector*, comprising some 200 enterprises and with a total turnover of around US\$ 200 – 250 million. Although most of these enterprises are involved in the provision of fairly basic IT services, in certain segments (namely, solutions for payment systems) Moroccan companies have reached a remarkable position and gained a good international reputation. In addition, the country can boast a fast growing *ICTE sector*, including over 60 call centers and other BPO companies and with a turnover of US\$ 90 -100 million, mostly related to the sale of customer care services for the French market.

In the case of Morocco, evidence from field work suggests that financing needs in the *early stages* of development are often in the US\$ 20 – 100,000 range. Financing requirements escalate rapidly as enterprises move into the *first expansion* (US\$ 100 – 500,000) and *second expansion* stages (up to US\$ 1 million). These needs relate to investments in human capital and hardware but working capital needs also become increasingly severe, due to the unfavorable payment terms often offered to Moroccan SME by large clients (“*90 jours, fin du mois*” is the rule). Finally, in the *third expansion* stage, financing needs become substantial, definitely above US\$ 1 million and often in the US\$ 2 to 4 million range.

Morocco’s financial system has been able to cope only partially with these requirements. On the one hand, the *banking system* is notoriously cautious (lending to the private sector is below the average of comparable countries) and the attitude towards a little understood sector such as ICT certainly cannot be described as proactive. The establishment of a guarantee fund for loans to ICT companies has been under discussion for some time but it has yet to see the light. On the other hand, Morocco’s *venture capital industry* has not neglected the ICT/ICTE sector and about one fifth/one quarter of all the investments finalized over the last decade were made in companies active in this industry. However, these deals mainly refer to more established companies, with investments typically being in the US\$ 1.5 – 3 million region. The main reason preventing the consideration and finalization of smaller deals has to do with “transaction costs”, i.e. the expenses associated with the preparation, negotiation, and monitoring of small investments. The disproportion between transaction costs and the size of investments (the so called *faible ticket* problem) was repeatedly mentioned as the main barrier to investments in SME (in ICT as well as in other sectors) by all the venture capitalists interviewed during field work.

**India.** Over the last two decades India has become one of the key players in the international *ICT industry*. In 2005 the sector posted a turnover in excess of US\$ 16 billion, marking a new record. The sector is largely internationalized, and exports account for about 75% of total sales, with the US being by far the main client (69% of total proceeds), followed by Western Europe (23%). The over 1,000 software and IT services companies include world leaders such as *HCL, Infosys, TCS* and *Wipro*, all in the billion-dollar club. The development of the ICT sector has been paralleled by the emergence of a powerful *ICTE industry*, which in 2005 reached a total turnover in excess of US\$ 5 billion. While

the ICTE sector includes a number of captive operations, resulting from the relocation of labor and skill intensive activities from developed countries, no less than 200 Indian-owned companies are active in the provision of customer care, account management, financial processing, and other ICTE services, mainly for international clients.

In assessing the financing needs voiced by Indian ICT/ICTE companies a distinction has to be made between the companies targeting the domestic market and those primarily oriented towards the international market. In the case of *domestically oriented companies* the amounts sought are not too dissimilar from those identified above in the case of Morocco. In the case of *internationally oriented ICT firms*, the ambitious nature of the projects pushes up the amounts required. Available evidence suggests financing needs of up to US\$ 1 million already in the early stage phase, with requirements of up to US\$ 5 million for the commercialization phase and well beyond this level for the full fledged development and operational stage.

In India the development of the ICT/ICTE industry has been paralleled by a major improvement in the sophistication of the financial sector. This is symbolized by the emergence of powerful *banking groups* and by the birth of a significant *venture capital industry*. The rapid growth experienced by ICT/ICTE activities has not gone unnoticed by Indian venture capitalists and equity investments in this sector are reported to be in the order of 10 - 15 deals per year. Although certainly significant, especially when compared with other emerging countries, the injection of equity financing appears to fall well short of needs. The problem is particularly acute in the case of deals below the US\$ 5 million mark, as historically the average size of deals financed by Indian venture capitalists tends to be in excess of US\$ 10 million. It is precisely to cope with this problem that in recent years *government authorities* have launched a series of initiatives aimed at supporting the financing of smaller ICT companies. At the federal level, this translated in the establishment of the US\$ 22 million *National Venture Fund for the Software and IT Industry* (NFSIT), managed by SIDBI Venture, while similar initiatives have been launched by state government (*Karnataka Information Technology Venture Capital Fund, Kerala Venture Capital Fund, Rajasthan Venture Capital Fund, etc.*).

**Kenya.** In many ways, Kenya represents the opposite end of the spectrum with respect to India. Leaving aside vendors and installers of hardware and software, Kenya's *ICT sector* includes not more than 30 – 40 software and IT services companies, mainly involved in web designing, development of basic applications, and translation of standard packages in Swahili for large IT companies. The ISP segment is undergoing consolidation, with only 15 firms in operation, out of 100 plus licenses awarded. Precise data are not available, but the total turnover in the ICT sector is unlikely to exceed US\$ 50 million, with an export share of not more than 10-15%. The development of *ICTE activities*, regarded as a priority by government authorities, in reality is prevented by persistent weaknesses in infrastructure (lack of optic fiber connections, with ensuing high costs of connectivity). At present, only one call center is in operation, and there are no other examples of BPO activities.

Financial needs voiced by Kenyan ICT are in line with the modest development of the sector. The *initial stage* may require as little as US\$ 10-20,000 while firms involved in subsequent *expansion phases* have investment plans of at most US\$ 60-70,000 over periods of two to three years. Financial needs are comparatively higher for firms making heavy use of connectivity services (ISP and cyber cafés), because of working capital requirements connected with the high cost of connectivity (over 50 times the price paid in Europe).

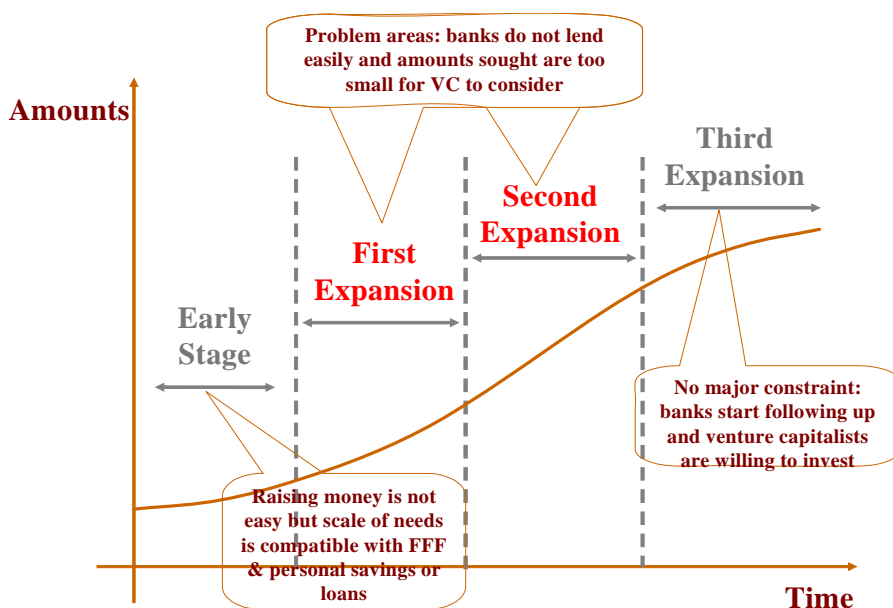
Kenya's financial sector is fairly sophisticated and diversified, at least by Sub Saharan standards. In the *banking sector*, standard commercial banking is supplemented by various micro lending schemes, often supported by international financial institutions (IFI) and bilateral donors. The system is very liquid but, nonetheless, interest rates and collateral requirements remain very high. The attitude

towards the ICT sector is not outright negative and *K-Rep Bank* (an institution specializing in lending to micro and small businesses, established with the participation of the IFC, African Development Bank, and Netherlands' FMO) reported some 10 loans to ICT operations (broadly defined, including vendors). The amounts involved are limited (around US\$ 5,000), but commensurable with the needs voiced by enterprises. Kenya is also home of some *venture capital operations*, sometimes with a regional scope. These include *Aureos' Acacia Fund* and *East Africa Fund* and the recent IFC-promoted SME fund managed by South Africa's *Business Partners*. So far no deals have been made by these entities in the ICT sector, but interest appears to be rising. *East Africa Capital Partners*, a financial advisory firm promoted by one of the pioneers in the ICT sector in east Africa, is currently in the process of arranging some operations, but these appear to be relatively large deals (well above US\$ 20 million).

### 4.3 Summing Up

Evidence resulting from the country studies does indeed confirm the existence of a financing gap, in the sense that seemingly well deserving ICT/ICTE operators have limited or no access to external financing. A summary presentation of the constraints faced by ICT/ICTE small companies in their stages of development is provided in Figure 2 below.

**Figure 2 Nature and Severity of Financing Gap**



Although there are inevitable differences across countries, in general financing constraints faced by ICT/ICTE firms appear comparatively more severe in the first and second expansion phases, while the situation is more nuanced in other phases. In particular:

- ➔ in the *early stage* financing needs may vary significantly, depending upon the specific nature of the business and the cost conditions prevailing in different countries, but they are often below US\$ 100,000. In middle income countries, these are sometimes compatible with the recourse to the usual "FFF channels", complemented with some personal loans. In lower income countries, the amounts at stake are even lower, and sometimes compatible with funds accessible through micro lending facilities or donor supported schemes. More problematic is the situation of promoters of "high profile" projects, as those found in India, whose financial requirements exceeds these informal or traditional sources;
- ➔ real problems start when enterprises reach the *first and second expansion stages*, and financing needs rapidly escalate from US\$ 100,000 to the US\$ 1,000,000 mark and beyond. Enterprises at

these stages of development, although already in business, and often trading profitably, still do not have a sufficient track record to be accepted as a credible borrower by commercial banks. On the other hand, venture capitalists regard the amounts sought by SME as too small to justify the costs of project appraisal, legal due diligence, and negotiations. Under these conditions, ICT/ICTE enterprises are forced to rely predominantly on self financing (which in developing countries also means recourse to unorthodox practices, such as delaying the payment of social security and taxes). The inevitable result is a significant slow down in the development process, which in a fast moving business such as ICT, may ultimately jeopardize the future chances of success;

- ➔ if and when an enterprise manages to reach the *third expansion stage*, then conditions for accessing financing improve significantly. In certain cases, banks are still wary of lending large sums to companies involved in a business that they do not understand well, but the volume of money flowing through the bank account is a powerful factor in mitigating this skepticism. Much more importantly, investments deals above US\$ 2-3 million can more easily attract the interest of venture capitalists.

At the end, it should be highlighted that the financing gap identified cannot be ascribed to an “absolute” lack of funds but rather to the limitations of the specific *financing instruments* available and/or to the *operating modalities* adopted by the various financial institutions. Constraints appear to exist also on the demand side. Indeed, even in an advanced sector such as the ICT/ICTE industry entrepreneurs are more often than not reluctant to open up their capital to outside investors and to relinquish control of operations. In other cases, field interviews have revealed a tendency of entrepreneurs to price equity investment nearly at par bank loans, which indicates a gross underestimation of the risks inevitably associated with early stage financing in ICT/ICTE. Under these conditions, it is obvious that whatever financing gap exists, it cannot be entirely regarded as the fault of “bureaucratic” banks and “rapacious” venture capitalists.

## 5 PRELIMINARY RECOMMENDATIONS

### 5.1 Introduction

The results of the Study allow for the identification of a series of measures that, to a varying degree, could help in alleviating the financing gap. These measures fall in three broad categories, namely:

- ➔ measures aimed at facilitating access to equity financing;
- ➔ measures aimed at facilitating access to debt financing;
- ➔ measures aimed at improving the overall operating environment.

### 5.2 Measures Aimed at Facilitating Access to Equity Financing

There is a broad consensus that equity financing is particularly well suited to support the development of ICT/ICTE companies. In order to increase the volume of equity financing available to smaller companies, two measures can be envisaged, namely: (i) the establishment of a mechanism aimed at alleviating the costs incurred by fund managers in the finalization of small deals; and (ii) the establishment or co-financing of dedicated seed financing structures. These two possible measures are briefly illustrated below.

**Alleviating The Venture Capitalists' Transaction Costs Problem.** Transaction costs related to the preparation, finalization, and monitoring of equity investment deals emerge as a key barrier to the greater involvement of existing venture capital funds in the financing of small ICT companies. Depending upon the cost conditions prevailing in various countries (e.g. India appears to be less expensive than Morocco), these transaction costs can be roughly estimated at some US\$ 20 – 30,000 per deal in the preparation, due diligence and negotiation phase, while another US\$ 20 - 25,000 are required for the monitoring phase. Under these conditions, a mechanism could be envisaged whereby *fund management companies could be reimbursed for at least part of the expenses incurred in the case of small equity investments*. This reimbursement could take the form of a flat fee that would be payable for each investment made in ICT companies below a certain threshold, and this would complement the management fee normally received by fund managers. Payments to fund managers could be phased, in order to be linked to specific events in the investment process. The advantage of such mechanism is twofold. On the one hand, a relatively modest investment (say, around US\$ 40 - 50,000 per investment deal – less than the cost of a small consulting assignment) would help in mobilizing much greater amounts of institutional investor's money, ensuring a very high multiplier effect. On the other hand, despite the presence of a subsidy element, the mechanism would not unduly impact on incentive structure of fund managers, as the remuneration received for each deal would be small compared with the amounts to be invested. This would ensure that assessment criteria would remain inspired to sound business principles, with the merits of specific investments assessed on a strictly commercial basis.

**Establishment of Dedicated Investment Facilities.** Whatever the incentives provided to fund managers in order to encourage investments in small enterprises, it is difficult to conceive “regular” venture capitalists considering investments below a certain threshold (say, less than US\$ 500,000). Under these conditions, an opportunity arises to support the establishment of *investment facilities specifically targeted at the ICT/ICTE sector*. Similar initiatives have already been established or are in the process of being set up in various countries. Examples of facilities dedicated to the ICT industry (or, sometimes, to “innovative sectors” in general) include:

- ➔ Morocco's *Fonds Sindibad*, established with funds provided by local institutional investors, the European Investment Bank, and France's CDC PME;
- ➔ India's NFSIT as well as its counterparts at the state level and *Indiaco*, a commercially oriented integrated operation combining the provision of funding with business incubation;

- ➔ Tunisia's *fonds d'amorçage*, currently being promoted by the EIB;
- ➔ Egypt's *Ideavelopers*, an integrated business incubator cum equity financing initiative launched by *Commercial International Investment Company* (Egypt's leading private equity operator) and *Telecom Egypt*;
- ➔ IFC's SME Solutions Center in Kenya, which houses the IFC/Business Partners Pilot SME Fund and an infoDev supported business incubator, KeKobi, and aims to address early stage financing by leveraging these two activities
- ➔ the programs implemented in Brazil by public entities such as the *Financiadora de Estudos e Projetos* (FINEP) and the *Serviço Brasileiro de Apoio às Micro e Pequenas Empresas* (SEBRAE).

In designing such a type of facility three aspects appear of paramount importance, namely: (i) the geographical scale of operations (regional funds are often appealing from a fund raising perspective but, in order to operate efficiently, seed capital facilities must be "local"); (ii) the mobilization of adequate amounts of technical assistance money to support investment operations (in the form of a separate financing line or of an addition to standard fund management fees), and (iii) the formulation of clear investment policy guidelines, to ensure that the focus remains firmly on SME.

### 5.3 Measures Aimed at Facilitating Access to Bank Financing

Despite the emphasis placed on equity financing it is obvious that banks will continue to play a role in the financing of certain ICT/ICTE initiatives, especially in countries characterized by a weak "equity culture". In this area two possible measures appear worth considering, namely: (i) the support to the establishment of ICT/ICTE oriented credit guarantee schemes, and (ii) the provision of assistance to small ICT/ICTE firms in dealing with commercial banks. These two possible areas of intervention are briefly described below.

**Assistance to the Establishment of Credit Guarantee Facilities.** Credit guarantee schemes (CGS) aim at facilitating access to finance through the provision of a loan repayment guarantee that replaces, in part or in full, the need for collateral. Credit guarantee schemes based on self help principles are found primarily in Continental Europe, where the conditions of social cohesion and the proactive role played by business associations have favored their establishment since the late XIX century. Historically, these schemes have played an instrumental role in facilitating SME's access to bank lending. In developing countries, a certain number of credit guarantee schemes were established in the 1970s and 1980s, often with support from international financial institutions (IFI). However, these schemes were often managed by state-owned development banks or other public institutions, which negatively impacted on their performance and financial stability, which in turn led to significant disenchantment towards this instrument.

A renewed impetus in the promotion of credit guarantee schemes aimed at SME has emerged in the more recent years. In the case of East European countries, this effort is spearheaded by the European Mutual Guarantee Association (*Association Européenne du Cautionnement Mutuel – AECM*), that has been progressively expanding its membership to encompass new EU member state as well as South East European countries and Turkey. Other efforts in this direction are being deployed by the European Commission (which lately has been supporting the establishment of guarantee schemes in Mediterranean countries) and UNIDO (that has been promoting the creation of mutual guarantee associations in certain areas of India). In the case of the ICT/ICTE industry, the instrument of credit guarantees is already used in Malaysia by *Malaysia Debt Ventures*, that has been managing a guarantee facility dedicated to ICT since 2002, while the establishment of a similar facility (with a capital possibly in the order of US\$ 10 million) is currently the subject of negotiations between Morocco's ICT association (*Association des Professionnels de Technologies de l'Information – APEBI*) and government authorities. Interventions in this area could take the

form of *technical assistance support in the formulation of operational guidelines and/or of training of CGS schemes*, so that the new facilities are aligned with the experience of countries (Italy, France, Portugal, and Spain) where guarantee schemes have achieved important results.

**Provision of Direct Assistance to ICT/ICTE Promoters.** As mentioned in previous sections, problems in accessing loan financing cannot be blamed entirely upon banks. Indeed, promoters and small entrepreneurs are often unable to approach banks in a proper way, to prepare business plans of acceptable quality and, more importantly, to defend them vis-à-vis loan officers of commercial banks. During discussions with business associations, the idea of *establishing small technical assistance facilities to assist ICT/ICTE companies* in this area was aired. In practical terms, the facilities could involve the recruitment of consultants that could be made available to ICT/ICTE firms to assist them in their endeavors with commercial banks. The consultants could operate under the umbrella of sector business associations (or of SME associations, when existing) and/or in collaboration with the network of business incubators, that could provide the technical expertise required for the preparation of business plans. Admittedly, the scheme follows a fairly traditional model of technical assistance, but under current conditions it could have a non negligible impact on the relationships with banks. In addition, the business associations or other entities participating in the scheme would also benefit from the scheme, as they would enhance their profile as providers of useful services to members.

#### **5.4 Measures Aimed at Improving the Overall Environment**

Access to financing is heavily influenced by prevailing conditions in the environment in which financial institutions operate. Interventions aimed at improving the enabling environment have a less direct impact than the measures suggested above but, nonetheless, could yield important and lasting results. In this context, two areas appear as particularly interesting:

- ➔ analytical work on the economics of the ICT/ICTE sector in developing countries is still limited. Available academic studies tend to focus on OECD countries while the wealth of information accumulated by ICT specialists often remains confidential. Under these conditions, the ICT/ICTE sector is still little understood by a wide range of financial intermediaries, namely commercial banks. Actions aimed at *compiling and disseminating information about the fundamental economic and financial parameters of ICT/ICTE firms in developing countries* could help in bridging the existing information gap. An example in this respect is the initiative recently proposed by Morocco's ICT sector association regarding the institution of a *centrale financière* for the ICT sector to be made available to the banking sector;
- ➔ in the case of smaller enterprises straight equity investments appear scarcely feasible for a variety of reasons (high transaction costs, tax avoidance considerations, etc.) and quasi equity appears as the most promising vehicle. However, in certain countries the legal infrastructure is not adequate to support quasi equity investments, in terms of legal provisions or, more often, operational capabilities of relevant operators. Actions aimed at *disseminating the experience with quasi equity accumulated by some SME financing schemes* (such as *Business Partners*) could prove useful to financial and business circles alike.