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Introduction & Background

This document is Innovative Ventures Inc.'s (IVI) recommendations to the World Bank on the creation of a Slovak Government R&D facility; its purpose is to co-finance innovative Slovak R&D in partnership with the private sector, to create future transactions for corporate and venture capital investment.

The Government of Slovakia has a strategy to create internationally competitive R&D and motivate private sector financing of innovation. To accomplish this objective, a pool of R&D projects is needed to generate future venture capital transactions based on new technical solutions and approaches. Commercialization of new technology always starts with R&D and product development projects to demonstrate 'proof of concept;' novel ideas are needed to attract strategic and venture capital investors. Too often governments and multilateral financial institutions launch venture capital schemes before the quality and quantity of transactions exist for private sector investors to finance. Such premature action results in disappointment and failure to achieve objectives.

Thomas D. Nastas of IVI participated in this World Bank mission that started on 9 May and concluded 10 May; the assignment is the assessment of the pipeline of technologies for R&D financing if the Facility is launched. Mr. Nastas met with representatives from the Slovak venture capital community, universities, institutes and incubators, business development agencies, Slovak staff of the State supported Seed Capital Fund and its Science & Technology Assistance Agency, Slovak businessmen and entrepreneurs. Background meetings were held with the World Bank team on 8 & 9 May in Bratislava.

Recommendations

IVI makes the following recommendations to the World Bank and the Slovak Government; to help speed the development of a knowledge-based economy in Slovakia.

1. **Capitalize a US$5 million R&D Facility for co-financing innovation and innovative projects of Slovak SMEs**
   - **A. Goal**: Create a pool of R&D projects by Slovak SMEs as the strategy to generate future venture capital transactions based on new technical solutions and approaches. Seed and early stage Slovak SMEs lack the cash flow to self-finance innovation and are unable to raise equity venture capital due to a combination of structural barriers like the absence of an active equity market in Slovakia, low M&A activity by buyers (trade sale by major corporations), and a lack of angel investors, seed and early stage venture capitalists.
   - **B. Structure**: Co-finance projects with 50% of the capital provided by the R&D facility and the remaining 50% provided by the SME itself (through cash flow, investors and/or bank loan). Monies provided by the Facility are used to reimburse expenses incurred for design, product development, prototype, testing and verification, including the purchase of materials, supplies and components needed to build the prototype, demonstrate technical feasibility and the

performance of the technology. Reimbursement of the Slovak Government's co-financing is made through royalty payments from product/service sales of the financed technology.

C. Target clients: Slovak SMEs developing and commercializing technology based products and services to the Slovak economy, the CEE region and/or international customers.

Comments & Justification: Does Demand Exist for the Facility? Will a Pipeline Develop? Yes, a stream of technology companies with technology projects exist now, and the market has the capacity to increase the quantity and quality of technology projects once the facility is in-place.

While IVI was in-country for only two (2) days, too little time to thoroughly evaluate the existing pipeline, we met with several technology companies and Slovak Government supported institutions that fund/assist the SME sector. We observed a lack of capital for early stage technology development as one barrier to the creation and growth of a Slovak technology sector.

- **The current pipeline & Slovak success stories**
  Technology companies Microstep, Silentel, and Gori Group/Interenergoresurs seek capital to finance their innovation projects, yet few sources of capital exist which they can access for development. These three companies are active in microprocessor, instrumentation, electronic, digital transfer, upstream petroleum and alternative energy technologies. Microstep is an international company selling its electronic numerical control and plasma cutting machines and tools to customers in W. Europe, USA and the Far East. Sales in 2004 were €13 million.

  Eset is a global supplier of anti-virus software and ranks behind Norton, MacAfee and Kaspersky in worldwide sales; Eset is a three (3) time winner of Deloitte's Fastest Growth SMEs in the CEE, and other contest winners include two other Slovak companies, a total of three. Eset's success demonstrates that Slovaks can create world class companies.

  A few years ago an Eset employee resigned and created a new technology start-up; employees of successful technology companies leaving their employer and creating new companies is a common occurrence in the technology field and is one reason for the success of Silicon Valley and Route 128 (Boston). PosAm is a successful Slovak systems integrator (seller of hardware with custom developed software) with sales of about US$20 million and cited the lack of capital as a major barrier for customers and potential customers to upgrade their technology infrastructure thus limiting SMEs' ability to initiate, complete, and commercialize new innovation.

- **There is a lack of capital for financing early stage technology-focused SMEs and technology projects: Existing finance institutions are focused on the academic sector and non-technology SMEs**.
  The Science & Technology Assistance Agency is directed at financing 100% of the cost of research projects of the Slovak Academy of Sciences, universities and institutes; funds provided to SMEs are invested 50/50 with 50% of the project cost financed by the SME and the remaining 50% financed by the Agency. The Agency provided monies to only four technology SMEs in 2004 vs. 100+ projects in the academic sector. The four SMEs that received monies for technology and product development are tied to the academic system in one way or another; either SME founders are former academicians or conduct R&D with a Slovak institute. Slovak technology entrepreneurs are generally unaware of

this Agency as a funding source, or uncertain that they will receive grants, indicators that the Agency is focused on academic institutions vs. the private sector.

The Seed Capital Company (a Slovak Government institution) makes debt, equity and quasi-equity investments in Slovak SMEs, but not technology SMEs nor technology projects of Slovak SMEs. Other venture capital and risk capital institutions like the Slovak-American Enterprise Fund and Genesis Capital are focused on later stage enterprises with established cash flows, depth and breadth of customers and complete management teams.

- **New money is entering the Slovak economy for project financing of technology & equity for technology SMEs; this capital both builds the pipeline and compliments the strategy of the R&D Facility.**
  New money allocated from the Slovak Government is focused on academic research in the Slovak university system through the Science & Technology Assistance Agency. The Agency's budget was 192 million Slovak Korunas in 2004, 500 million in 2005 and projected at 800 million Korunas in 2006. Likewise Seed Capital received €1.1 million from the Government's National Agency for Development of SMEs as a sub-fund to provide equity to technology companies.

  These investments are another indicator that pent-up demand and a pipeline can and will develop for the funding of technology. As importantly, they generate more technology projects for the Facility; some research projects funded by the Agency are a stream of opportunities for development financing by the Facility with completed projects of the Facility an input for commercialization financing from Seed Capital's technology sub-fund.

- **The R&D Facility fills market and financing gaps in the tech sector to provide SMEs with more financial options and flexibility for exploiting growth opportunities**
  Monies of the Science Agency are directed at academic research, not product/prototype development thru production scale-up, so a market void remains for the target of the R&D Facility. Money provided by the Facility leverages Agency capital for SMEs to create more and better technology projects. Equity through the sub-fund of the Seed Capital Company is not a competitor to the R&D Facility, but instead compliments the Facility as an input to creating more and better capitalized technology projects and technology SMEs with a higher chance of success too.

  Here the whys and the how's.

  The Science Agency's financing program for SMEs is a 50%/50% grant making scheme with half the project monies provided by the Agency and half by an enterprise. A company's amount of free cash flow to co-invest limits the number of technology projects that it can pursue at any one time.

  Microstep stated that it can only initiate one project every two (2) years due to a lack of cash resources to finance its potion of the investment with the Agency; increase Microstep's access to capital, i.e., the R&D Facility, and the number of technology projects increases proportionally. Multiply Microstep's situation to other SMEs in the Slovak economy, and the number of potential projects waiting on the sidelines for financing increases as well.

Equity from the Seed Capital sub-fund is a source of co-financing to money from the R&D Facility, to likewise increase the number of projects for financing and their success rate; enterprises like Microstep will that can raise equity from Seed Capital will have more money for higher cost projects, the cash for co-investment and/or commercialization, a win/win for the Slovak enterprise, the Slovak economy and the Slovak Government.

2. **The R&D Facility should have the flexibility to finance imported technology.**
   - **A. Goal**: Provide capital for the licensing of foreign created patents and technology imported into Slovakia in addition to financing domestically created technologies.
   - **B. Strategy:** An objective of the R&D Facility is to build the capacity of Slovak SMEs to develop and commercialize world class products and services through innovative core technologies and skills. While this is a noble objective, this takes time, and a supporting and complimentary strategy to jump-start technology development is to finance the implementation of foreign patents in Slovakia and/or the import of a foreign technology into Slovakia *so long as Slovak companies and entrepreneurs meet the co-financing requirement and implement for the benefit of the Slovak economy*.

Comments:
Slovakia has a few world class companies as noted by IVI in this document. And IVI is confident that Slovak entrepreneurs will continue to innovative and take a seat at the world technology table. But since we live in a global market, Slovak entrepreneurs should have the flexibility to mix and match the best of their technology solutions with those from other markets to create the total solution. Opportunities exist to implement a foreign technology, reverse engineer to reduce cost (when done w/o infringing on IP) and performance and re-introduce into local, regional or international markets as a Slovak creation. Related skills will develop to improve on an imported technology as a source of value creation from the Slovak SME.

IVI believes that this strategy should be linked to a sector where large foreign multinationals participate in Slovakia, e.g., automotive. Importing technology needed by the automotive supply channel creates new business opportunities for Slovak suppliers to serve this market and localizes product content, a requirement of most countries (Slovakia too?) when multinationals conduct business in a foreign land. As Slovak suppliers demonstrate competencies to the auto manufacturer, new product opportunities will naturally develop that require new technology and/or engineered extensions of existing solutions.

Gori Group/Interenergoresurs is an example of an organization that fits into this model. It has rights to foreign (Ukrainian and Russian) technologies. It is attempting to raise capital to finance the development and commercialization of these technologies from its Bratislava headquarters.

3. **A number of technical assistance programs and resources should be financed and implemented to make the R&D Facility robust and effective in its mission.**
   - **A. Goal**: To ensure that interesting and innovative projects are developed and brought forth to the R&D Facility in sufficient numbers for financing, and provide assistance in commercialization of innovations supported.
   - **B. TA Components**: IVI recommends that the R&D Facility provide monies for 'mini-grants,' engage business development and business outreach staff to 'scout' for opportunities in the Slovak SME community and academia, identify and develop interesting projects for possible

financing by the R&D Facility, and help 'match-make' innovations from academia to SMEs through business mentoring.

Comments:
Too often innovations developed in academia remain on the shelf since scientists lack the knowledge to make the business case for the technology, the energy and drive to move them into the market; too often scientists and (some) businesses lack the skills to make the transition from development to commercialization and growth.

The job of the business development scouts and outreach staff are to minimize these disconnects from the market so more projects are identified for financing and those that receive financing have a good chance commercial success. The purpose of the 'mini-grant' is to provide small amounts of money (e.g., US$5,000) to define the business opportunity if the proposed technology can be commercialized. The mini-grant is not intended to fund an entire business plan, but a 3-4 page document of the potential of the proposed technology.

4. **Engage a venture capital advisor to determine if real potential exists with Slovak technologies and attract international corporate investors/technology focused investors to help evaluate the global applications for the technology (when and where appropriate).**
   A. Goal: To determine where Slovak has value-added technologies with global and/or domestic application, and demonstrate that it is a country for venture capital. This helps develop the domestic venture capital industry.
   B. Mechanism: This venture capitalist will screen investment opportunities to international standards of venture capital due diligence and request developers (institutes/SMEs) to provide information needed for decision making like performance data on the technology compared to competing technologies, user benefits of the technology, IP status and specifying additional development required to commercialize the technology. If and when appropriate, technologies that pass this screen are sent to international venture investors (corporate investors or technology focused funds) to determine if the technology has merit for world markets, is world class and a possibility for global application, a technology that is not world class, but suitable for use in domestic markets like Slovakia, the region (i.e., Czech Republic, Germany, Austria, Ukraine, Russia) and international, etc., or simply not interesting when compared to alternatives.

   Comments: This venture capitalist would also advise entrepreneurs to structure their project and amount of funding needed to accomplish the absolute minimum required to demonstrate performance of the technology (to reduce risk and uncertainty) vs. a plan and budget that attempts to do everything (which increases risk and uncertainty). In a developing market like Slovakia with a limited track record and recognition in creating successful technology companies, the Government must help Slovak entrepreneurs make plans and budget with limited objectives to build investor confidence that they can accomplish what they say they can accomplish to cost, timing, performance, and quality objectives. If they can do that, then they can raise more capital in a second round of financing to take the project to its next stage of development.

5. **Create a US$2 million IP fund that finances the cost of filing domestic or international patents, with the cost paid back by royalties generated from sales of the IP.**
   A. Goal: To protect the IP of technology created by the R&D Facility
   B. Structure: The Facility pays legal and related costs, and receives money advanced as sales are made of the patented technologies (related and spin-offs as well). Repayment replenishes the

Fund so it becomes a revolving instrument with a one-time investment by the Slovak Government through the World Bank loan and/or EU structural funds.

Comments: Scientists and businessmen are rightfully proud when they create new innovations, and they frequently announce their solutions to others prematurely and inadvertently, before protecting the IP. Such announcements expose the technology to infringement from others, especially when it has global application. One responsibility of the business development staff (recommendation # 4) is to identify IP early in the development cycle and work with legal council to protect the technology. Another responsibility of the business developer is to educate and sensitize scientists and SMEs management to the issues in IP protection, what can and cannot be disclosed, when and where.

6. **Create a database of technology projects with the data that investors need to make due diligence decisions**
   - **A. Goal**: Provide information on technologies in where Slovak has distinctive competencies.
   - **B. Mechanism**: An inventory of technologies of existing technologies is needed to provide potential investors and customers with accurate and reliable data on user benefits of the technology, its performance characteristics benchmarked against domestic and international competitors with performance data generated to international testing standards and their stage of development. A database of just technologies, amount of monies needed, info on the developer, etc., is not the right information that investors need to make investment decisions.

Comments: Without performance data benchmarked to competing technologies, investors, customers, users and potential partners cannot invest in technologies that interest them, nor will they take the time, effort or spend the cost to fund the effort to benchmark Slovak innovations to competing technologies. But with this information in a database, Slovakia can attract more investors and partners to consider Slovak innovation for development, commercialization and investment.

IVI implemented a project in Russia with Shell Oil and its venture capital unit Shell Technology Ventures to identify oil/gas technologies for commercialization to global markets through a transfer of IP, or the venture capital investment in an existing Russian enterprise or the creation of a new Russian enterprise. It would have been of great value to have a database of oil/gas technologies that included performance data, benchmarked to competition with English translations of Russian patents, etc., since we could have gone directly to the developer, spent time, money and energy in technical due diligence, structuring and negotiating investments vs. building the database.

Potential investors could use a database of technologies in these industries to search for investment opportunities, and more quickly make investment decisions to the benefit of Slovak companies, institutes and the country as a whole. Additionally, there are very few corporations and venture capital funds that are willing to invest dollars, time and personnel to create such a database.