

A Go-Forward Path to Generating Prosperity

By Thomas A. Nastas

Innovation, small- and medium-sized enterprises, or SMEs, entrepreneurship and venture capital are ingredients in creating knowledge-based economies; witness the successes in California's Silicon Valley. Small economies countries like Israel and Singapore with little domestic demand for technology have developed unique approaches to exporting knowledge creation.

Russia is now investing to try to replicate the strategies that have been so successful for SMEs in Israel, Korea, Singapore and Taiwan — the development of technologies for global markets.

Do these strategies offer the best chances for success? Are there alternatives and, if so, how can Russia tap them to generate new wealth and prosperity?

The government's focus is on the development of SMEs that addresses global needs, so Moscow is spending billions in petrodollars to create new IT, biotech, nanotech and other high-tech companies with the aid of technoparks and incubators. It is opening up a \$500 million fund-of-funds, modeled on Israel's example, to grab a seat at the table of global technology development. Multinationals like Intel, Siemens, Motorola, Microsoft, Boeing, IBM, United Technologies, Cadence and Sun have established Russian R&D centers and incorporated Russian technology. A few U.S. venture capital funds have also invested in Russian innovation.

Yet with all this capital and horsepower invested, something is still amiss in Russia: a critical mass of seed and early-stage SME investment opportunities for domestic or foreign venture investors. This is not because of a lack of capital and investors seeking opportunities, and remains the case despite the advantages Russia enjoys over many other countries: Soviet scientific accomplishments, leading universities and world-class researchers. But turning this foundation into a competitive technology economy is a real challenge.

Over the past seven years, Innovative Ventures Inc., or IVI, and other investors have evaluated hundreds of Russian technologies, with only 20 receiving investment. IVI's experience in evaluating 150 oil exploration and production technologies helps to demonstrate why this number is so small.

Only 2 percent of the proposals we looked at could be called "game-changing," meaning that they represent disruptive technology offering superior performance or high cost-reduction features. Such game-changing benefits are required to attract international customers and investors and compete in global markets. Many of these technologies are still in the research stage and require more development before they are ready to attract venture capital investment.

Our experience runs counter to the common

notion that there are great technologies on offer here and investors are just blind to their potential. There are some great ideas, but customers buy products, not concepts, and investors invest in deals, not conceptual-stage ideas.

Over half of the technologies examined were rejected because of incomplete descriptions of their value, inconclusive performance data and a lack of competitive benchmarking. Many ideas look interesting, but there is no reliable test data available.

These data are essential to demonstrating performance benefits. Smaller enterprises moving into international hi-tech markets position themselves against global competitors, many of which have more money and a solid customer orientation. Even with good performance data, attacking international markets requires disruptive technologies. Game-changing technologies are few and far between, however, as they frequently result from coincidence rather than planned innovation.

The good news is that while few Russian inno-

others exist thanks to natural advantages.

The automobile industry is a tech business experiencing excellent growth in Russia as Ford, General Motors, Toyota, Volkswagen, Peugeot and others increase production. These multinationals must build up the domestic auto-component supply chain to a Western equivalent just as Shell, Chevron and others need more and better oilfield service suppliers. Both industries seek solutions to localize purchasing and satisfy local content regulations.

Russia's plans to build knowledge-based sectors include IT, biotech, nanotech, and so on, but not auto components, oil field services and mineral extraction/processing — sectors with immediate payoffs to catalyze a chain reaction in domestic tech absorption.

Provide "Mini Grants" to Document Business Opportunities. Once domestic industry tech hubs are identified, fund a 'mini-grant' program to de-

3. Performance and cost benchmarked against domestic and international competitors with data generated to international testing standards;

4. Stage of development, meaning R&D, product development, alpha/beta testing, and so on;

5. Product development plan with timetable and milestones, line-item budgets;

6. Patents issued or filed, by country, date and number, and competing technologies of similar form or function.

Offer Targeted Business Development Support. Create a business development office that scouts for opportunities in the SME community and academia. This office identifies and develops projects for financing by the mini-grant and proof of concept programs, and helps to sell innovations from academia/SMEs to customers. Innovations too often remain on the shelf because scientists lack the know-how to make the business case for a technology.

Establish an Intellectual Property Facility to Protect Intellectual Assets. The IP facility pays the legal costs associated with filing domestic or international patents with costs reimbursed through revenues generated from product sales. Such repayments replenish the facility so that it becomes a revolving instrument with a one-time investment.

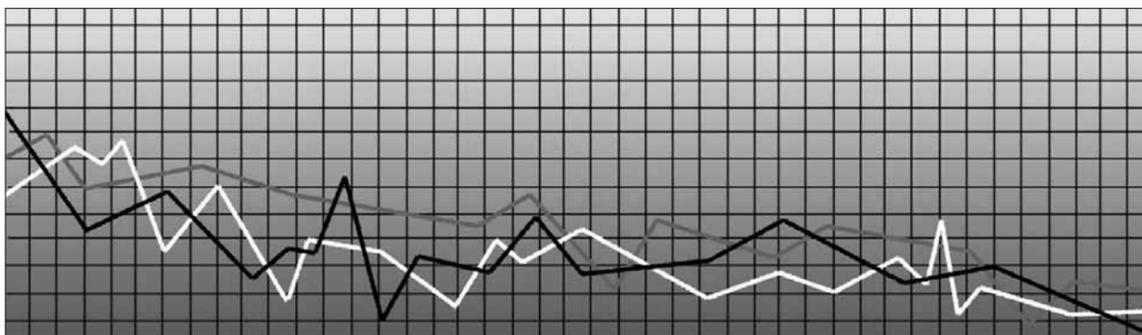
Strange as it might seem, New Zealand offers a fitting model for success. While not a developing country, it is small and remote and its transition strategy from low-tech

to high-tech is illustrative of how a domestic focus helped to create a technology-based SME industry.

In the mid-1990s, New Zealand invested in R&D to create more flavorful and different varieties of wine, cows and lamb with more meat and less fat. The focus was on new solutions for domestic needs in agriculture and animal husbandry, not global hi-tech, where New Zealand had little comparative advantage. Five years later, government initiatives yielded results and venture capital investors helped to commercialize New Zealand innovations.

Today, New Zealand meat and wine are found in Australia, Europe, Japan, Russia and the United States, and its SMEs sell tech products and services to Australian, European and U.S. wine and animal producers; truly a win-win for all. If the deal flow is built first, the customers and investors will follow.

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M A C R O M A N A G I N G

vations have game-changing qualities, IVI identified 63 with value in domestic exploration and production. These are low-cost solutions that give Russian and international oil companies almost world-class performance advantages, but at lower prices compared to Western competitors. Low cost technologies attract price-sensitive customers.

What makes these opportunities so appealing is that they provide an alternative to game-changing strategies. Instead of trying to outperform global competitors, Russia can build a locally competitive technology sector based on SMEs for domestic use. Once this base is established, resources can be invested to develop internationally competitive enterprises.

Given the higher probabilities of local growth, a "go-forward" strategy exists to build technology platforms in and around strategic assets instead of diversifying resources away from natural advantages. A go-forward strategy involves a number of elements:

Target Domestic Users First. Federal and regional government officials cite the low absorption rate of domestic users as the reason for pursuing a game-changing strategy. Yet every country has industries that are knowledge based; some are clusters, while

fine the business opportunity for proposed technologies. A mini-grant of \$3,000 to \$10,000 is not intended to fund a business plan, but a three to four-page document detailing the technology's potential.

Capitalize a "Proof-of-Concept" Fund. Commercialization of new technology starts with R&D and product development to demonstrate "proof of concept" and the value of novel ideas. SMEs are only able to approach customers when they clearly present technology strengths and weaknesses. A proof-of-concept fund finances the costs of testing a technology and benchmarking it to competition and alternatives. To invest capital wisely, there must be a mandate that developers benchmark the technology early and often.

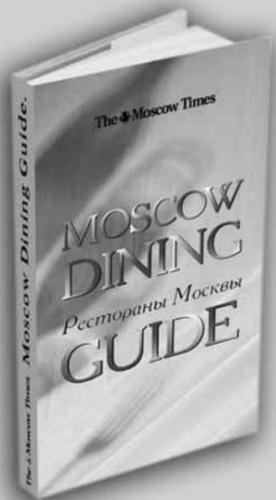
Inventory SME/Institute Technologies and Publish as a Database. Publish an Internet database of the information that customers and investors need to consider Russian technology:

1. SMEs/institutes organized by technology, product and market segment, with full contact information;
2. Benefits of their technology, cost and performance;

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