Vietnam has achieved remarkable economic growth …
… a never-ending fairy tale?

Vietnam’s way from „after war“ to a knowledge economy – some facts

- **The starting point (1986): Đổi mới**
  - Fundamental reform of the economy
  - Liberalization of the economy and revitalization of private business
  - Internationalization: Joined ASEAN in 1995 and the WTO in January 2007

- **Some achievements**
  - Average annual GDP growth > 6%
  - Mobile Phone penetration rate: 150% (= 133 Mio. mobile user accounts)
  - For comparison: Germany = 130%
  - Number of students in HEI: 893,754 (99/2000) → 1,540,201 (06/07)

Sources of data:
Vietnam has achieved remarkable economic growth… a never-ending fairy tale – or a flash in the pan?

Any reasons to worry?

<table>
<thead>
<tr>
<th>Vietnam</th>
<th>Singapore</th>
<th>Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP growth 2009</td>
<td>5.3 %</td>
<td>-2 %</td>
</tr>
<tr>
<td>Real GDP growth 2010 (est.)</td>
<td>6.5 %</td>
<td>14 %</td>
</tr>
<tr>
<td>Inflation rate (July 2010)</td>
<td>8.2 %</td>
<td>3.1 %</td>
</tr>
<tr>
<td>Gross foreign dept (in % of GDP)</td>
<td>39.0 %</td>
<td>11.0 %</td>
</tr>
<tr>
<td>Average age of population</td>
<td>27.4</td>
<td>39.6</td>
</tr>
</tbody>
</table>


What is happening … … any obvious reasons?

The World Economic Forum’s Global Competitive Index

In the WEF’s terminology, Vietnam is still a “factor-driven” economy

**Efficiency-driven economy**
- Economic Basis: Efficient production processes and improved product quality
- Enterprises capable of harnessing the benefits of existing technologies
- Key success factors: education and training, basic technological skills, efficient goods, labor and financial markets, and large domestic or foreign markets

**Factor driven economy**
- Economic Basis: factor endowments (primarily unskilled labor, natural resources)
- Companies sell basic products or commodities and compete on the basis of price
- Key success factors: low wages, well-functioning public and private institutions, developed infrastructure, stable macroeconomic environment and a healthy workforce

**Innovation-driven economy**
- Economic Basis: Innovative products/services, focus on high value-added tasks
- Companies absorb new knowledge and technologies efficiently and convert these into competitive new products/services for the world market
- Key success factors: most sophisticated manufacturing processes, globally oriented business processes, capability to innovate

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**Science and Technology contribution**
- Strong public research provides new technologies
- Knowledge and technology are transferred efficiently
- World-class R&D in enterprises creates innovative products/services

**Science and Technology contribution**
- Well-trained and highly motivated researchers for R&D
- Development of necessary skills for technology absorption/development, product development, etc.
- Enhancement of collaborative research
- Development of networks and clusters

**Science and Technology contribution**
- Capability to absorb and apply existing technology for competitive advantage
- Capability to co-develop state-of-the-art technology as basis for innovative products/services

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**12 pillars of competitiveness according to WEF**

Innovation-driven economy
- Pillars of the economy
  - Business sophistication
  - Innovation

Efficiency-driven economy
- Pillars of the economy
  - Higher education and training
  - Goods markets efficiency
  - Labor market efficiency
  - Financial market development
  - Technological readiness
  - Market size

Factor-driven economy
- Pillars of the economy
  - Institutions
  - Infrastructure
  - Macroeconomic environment
  - Health and primary education

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What has this to do with technology, research and innovation? … they are cornerstones of a future economic growth model!
Limited time to build innovation strength … … a challenge for a country in transition!

In the “good old days” …. at long product life cycles

“Firstcomer”

“Follower”

Market volume / achievable revenues

In a globalized world …. at short product life cycles

“Firstcomer”

“Follower”

Market volume / achievable revenues

Is Vietnam ready for this innovation race?

Some detailed scores from the World Economic Forum’s Global Competitive Index

The task: Build efficient technology-based innovation chains – already in reach for Vietnam with today’s means?

Challenges for knowledge generation
- Ensure scientific performance of research institutions at international scientific level
- Ensure high efficiency of structures and governance of the S+T system
- Unlock the potential of university-based research
- Allocation of limited public funds

Challenges for technology development
- Priority setting:
  - Identify technology domains with highest leverage
  - Technology sourcing: develop nationally vs. acquire from abroad
- Build well-performing transfer mechanisms
- Establish links/cooperation between public sector research & private sector enterprises

Challenges for technology exploitation
- Enhance enterprises’ awareness and capabilities to absorb and exploit new technologies
- Enhance S+T skill base in the private sector
- Ensure availability of appropriate financing for innovation-oriented activities

Facing the knowledge generation challenge: How to enhance Vietnam’s knowledge generation?

Research-intensive economies perform better! ➤ Current R&D intensity insufficient

Research output still too low! ➤ progress achieved, but still far from leaders!

Facing the knowledge generation challenge: The research system needs to be reformed

Status of Vietnam’s research system

Research policies, strategies and governance
- Importance of research and innovation recognized – but strategic framework and policy goals not yet fully developed
- Complex administrative and legal framework
- Limited financial resources, traditional funding mechanisms still predominant

Current status of research institutions and structures
- Complex, intransparent structures with a vast number of institutes
- Large number of researchers – but big structural issues
- Scientific and operational performance of many institutes doubted
- Do structures, processes, resources, governance mechanisms meet standards?

Framework conditions
- Very limited transparency
  - No actual and reliable research statistics
  - No efficient performance assessment and evaluation system
- No experience with evidence-based research policy making

Facing the technology development challenge: Low level of technological activities

Patents granted from 1981 to 2010

Source: IP activity report of the National Office of IP of Vietnam in 2010
Facing the technology exploitation challenge: How to mobilize the potential of enterprises?

The Challenge
- Insufficient S+T skills
  - Low capability to absorb new technologies and S + T knowledge
- Low technology awareness of many Vietnamese enterprises
  - Reluctant to invest in S + T
- Low competitiveness in technology-intensive sectors
- Low value-added products/services predominant
  - Vietnam’s enterprises are vulnerable in the world market!

Possible remedies?
- Stimulate innovation-oriented activities, e.g. funding of collaborative R&D
- Offer skill-building (training & education)
- Stimulate inflow of new academic staff with S+T skills
- Support technology acquisition


Science and technology policy makers face huge challenges

Challenges for Vietnam’s research and innovation policy making

Research policy formulation and implementation
- Definition of research and innovation objectives and priorities
- Allocation of scarce resources
- Formulation and implementation of policy measures

Current status of research institutions and structures
- Complex, intransparent structures with a vast number of institutes
- Scientific and operational performance of many institutes doubted
- Improvement of structures, processes, resources and governance

Framework conditions
- Very limited transparency
  - No actual and reliable research statistics
  - No efficient performance assessment and evaluation system
- No experience with evidence-based research policy making
Issues for policy makers (1): Priority setting for technology policy

Typical questions

- Which sectors need most urgently support to develop their technological basis?
- In which sectors do we get the most return on public S+T investment?
- How much funds to allocate to
  - individual sectors (e.g. biotechnology ↔ materials research ↔ ...)?
  - knowledge development ↔ technology development ↔ product development ↔ support for technology transfer ↔ ...?
  - research/technology areas ↔ application areas?
  - stimulation of / support for acquisition/attraction of foreign technologies?
- Which instruments are most suitable to develop our technological capacities?
- On which target groups should we focus (researchers ↔ private sector enterprises ↔ ...)?

Issues for policy makers (2): Find and implement a feasible development pathway

Technological skills

Technology Readiness
- Technology Awareness
- Create “hunger” for new technology

Technology Acquisition
- Technol. Application skills
- Learn to exploit available technologies

Technology Innovation
- Copy
- Innovate
- Develop own innovations, (start in niches)
- Learn to innovate (copying, marginal imp.)
- Acquire skills through R&D partnerships, networks, etc.
- Technology Partnerships
- Technology Import
- Insourcing through licensing, R&D FDI, etc.
Issues for policy makers (3):
Formulate policy measures to enhance research and innovation

Stimulation of research and development activities
- Funding programmes for application-oriented research (e.g. KC programmes)
- Indirect incentives (e.g. tax benefits)

Improvement of knowledge and technology transfer
- Stimulation of collaborative research, involving both private and public sector actors
- Special technology transfer support (e.g. transfer agencies, specific funding programmes, etc.)

Stimulation of knowledge and technology acquisition from abroad
- Two complementary directions
  - Support for participation in international collaborative research and networks
  - Support for Vietn. enterprises willing to acquire, license, etc. foreign technology
- Stimulation of S+T-oriented foreign direct investment in Vietnam (e.g. research centres, joint ventures, etc.)

Enhance S + T skills and awareness
- Provide training, seminars, etc.
- Stimulate network and cluster formation
- Stimulate self-optimization of S + T actors

Issues for policy makers (4):
Reform complex structures
Issues for policy makers (5): Establish a coherent research and innovation policy framework

Broader socio-economic goals
High-level research/innovation policy objectives

S & T policy framework
S & T strategies (e.g. for research areas, sectors, regions, etc.)

National Science & Innovation System

Technology position
Economic development
Technological priorities
Needs of society
Implementation measures

Technological priorities
Technological capabilities of VN R&D
Options for foreign TT and/or FDI

Governance
Structures
Institutions
Infrastructure
etc.

Requirements

Issues for policy makers (5):
Establish a coherent research and innovation policy framework

What is the role of evaluation in this framework? The theory …

Formulate S+T policies and strategies

Ex-post evaluation
Review and revision
Interim evaluation
Implementation of policies and measures

ex-ante evaluation
define policy measures (e.g. research programmes)
continuous monitoring
What is the role of evaluation in such a framework? … and the situation at the starting point

Challenges for building a research evaluation system

Inherited mechanisms and structures
- Before Đổi mới: Clone of the Soviet NIS structures
- Separation of research and universities
- Limited interaction between involved stakeholders
- Large part of enterprises state-owned until today

Governance and transparency
- Hierarchy-oriented Top-down policy and decision making processes
- Evaluation structures, resources and instruments non-existent
- Availability and quality of statistical data limited

Behavioural aspects
- Activity-orientation instead of result-orientation
- Taylorism and lack of autonomy
- Absence of modern management skills and instruments

Resulting attitude vis-à-vis evaluations: “control” ↔ “help to improve”

Vietnam does not yet have experience with evidence-based policy decision making which involves stakeholders appropriately

A reform of the S+T governance system has been launched, including the commitment to build a research evaluation system.

**Recognition of the need to reform the governance of the S+T system**
- Announced in the Conclusion of the 6 Party Conference of IX session, and
- Promulgated in Decree 171/2004/QĐ-TTg of the Prime Minister on the Project to reform S+T management mechanisms:
  
  “S&T management and organizational mechanisms have to be reformed; setting as the main target of S&T activities to enhance the quality, effectiveness and competitiveness of the economy”.

**Reform project of S&T management mechanisms**
- Reform S&T evaluation fundamentally, based on clear criteria which are adequate for relevant types of research
- Improve the regulation on the activities of scientific expert committees;
- Secure the independency and objectiveness of the expert committees’ work
- Building up an expert database
- Prepare establishment of an independent S&T evaluation institution with the following functions: Develop a methodological evaluation base, guide S&T evaluation activities and perform institutional and other evaluations
- Maintain objectiveness and transparency of all evaluation activities to obtain contributions to the improvement of quality and effectiveness of S&T activities.

**Status today: VISTEC established and beginning to have an impact**

**VISTEC establishment**
- First proposals to establish an independent evaluation institution 2004/05
- VISTEC formally established 2005

**VISTEC’s Mission**
- Become the leading independent organization for conducting S+T evaluation activities in Vietnam
- Implement evaluation principles of international standard in Vietnam
- Provide useful recommendations for S+T budget allocation and for policy formulation and implementation

Functions defined by Decision No 2942/QĐ-BKHCN of the Minister of Science and Technology
- assisting the pre-planning survey and analyses prior to national R&D program setting and supporting evaluation activities throughout the whole R&D life cycle;
- carrying out evaluations of R&D organizations;
- supporting the assessment of the national R&D budget allocation
VISTEC's role:
Create transparency and provide inputs for decision making

Decision making

Has to make important decisions, for example:
- strategic S+T priorities
- financial resource allocation
- S+T structures and institutions

VISTEC
Performs evaluations to provide necessary information for decision making

Typical information needs

- **Actual status**
  - Current performance of S+T system, research institutions, etc.;
  - International research and technology trends;
  - etc.

- **Assessment**
  - Strengths, weaknesses, opportunities threats (SWOT);
  - Improvement needs;
  - Improvement priorities;

- **Strategic options**
  - Attractiveness and feasibility of possible new programs/initiatives;
  - Priorities;
  - Requirements for future policies/programs;
  - etc.

- **Recommendations**

VISTEC overview – Mission and tasks

**Mission**
VISTEC supports the decisions which Science and Technology (S + T) policy makers and research managers have to make by providing
- state-of-the-art analyses and evaluations of Vietnam’s S + T system; and
- recommendations for improvement and further development.

**Tasks**
To fulfill this mission, VISTEC
- performs evaluations, strategic studies and technology valuations;
- develops and disseminates evaluation knowledge and methodologies;
- develops a national evaluation framework and an expert network.

**Clients**
- VISTEC’s primary clients are MOST and its institutions.
- VISTEC’s services are also available to all other stakeholders of Vietnam’s S+T system, for example other ministries, provinces and their DOSTs, research institutions, associations and enterprises.

**Service areas**
VISTEC’s portfolio of evaluation services focuses on
- the evaluation of S+T policies and their implementation and of S+T programmes, projects and institutions;
- related strategic studies in the field of S+T;
- technology valuation.

**Promulgation**
VISTEC supports the dissemination and application of S+T evaluation through
- dissemination of evaluation knowledge and methodologies;
- evaluation skill building (e.g. training) for other stakeholders;
- development of a network of national evaluation experts and practitioners;
- collaboration with international evaluation experts and practitioners.
VISTEC focuses on priority tasks with a range of current and planned activities

### Typical projects
- Evaluation of selected research programs
- Evaluation of research institutions and S+T structures
- Evaluation of regional/provincial S+T investment and/or technology position
- Contributions to major national initiatives, for example the development of sectorial S+T strategies or technology foresight
- etc.

- Proposals and support for MOST and other policy makers for the development of the legal framework for S+T evaluation
- Contributions to the development of other S+T regulations and procedures (e.g. for program management)

### Own evaluation and study activities
- VISTEC skill development
  - Internal training;
  - Own research on evaluation methodologies;
  - Participation in international training events.
- Development of stakeholders’ S+T evaluation skills:
  - Delivery of first training elements (e.g. in cooperation with MTI)

### Evaluation framework development
- Identify evaluation experts as network partners in Vietnam
- Launch first national network activities
- Start to integrate in international S+T evaluation networks (e.g. submitted two papers for AEA annual conference 2011)

### Skill building
- VISTEC skill development
- Preparation of S+T evaluation standards and evaluation tools
- Conduct evaluations of R&D organizations and human resources
- Conduct technology valuation and assessment in Vietnam
- Conduct surveys and create the database for S+T evaluation activities in Vietnam
- Perform research on evaluation criteria, methodologies and related issues
- Initiate and pursue international cooperation activities in the field of S+T evaluation
- Provide relevant training and consulting services
- Build up an R&D evaluation network in Vietnam.

VISTEC’s work has taken momentum …

### Some of the tasks actual pursued
- Prepare Ministerial regulations and evaluation standards for S&T evaluation activities in Vietnam
- Evaluate national S+T programs and S+T activities of provinces
- Conduct evaluations of R&D organizations and human resources
- Conduct technology valuation and assessment in Vietnam
- Survey, analyze and create the database for S+T evaluation activities in Vietnam
- Perform research on evaluation criteria, methodologies and related issues
- Initiate and pursue international cooperation activities in the field of S+T evaluation
- Provide relevant training and consulting services
- Build up an R&D evaluation network in Vietnam.
... but we encounter also limitations

**Some of our actual challenges**

- **Resources**: Lack of qualified candidates
  - Invest in training + enhance collaboration with academia
- **Methods and instruments**: Need to develop tailor-made
  - Standard tools used in developed NIS do not fit for Vietnam
- **Interaction**: Gain stakeholder trust and commitment
  - Invest in information + build trust through success stories
- **Impact**: Improve policy makers’ and stakeholders’ use of results
  - Not yet there \(\rightarrow\) improve acceptance of and skills in evidence-based policy making and implementation
- **Inputs**: Lack of reliable and actual data hinders efficient evaluation
  - Stimulate and support reforms of S+T statistics, program/project reporting, etc.
- **Experience**: Start with straightforward first generation methods
  - Focus on ‘learning by doing’
- **Cultural context**: Example use of questionnaires
  - Different behavior of Asian respondents \(\rightarrow\) adapt approach/tools

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**The way forward:**
**Development pathways**

- **Development of organization and resources**
  - Growing VISTEC staff to a critical mass
  - Building a core of experienced senior evaluation experts
  - Building a continuous influx of new talent

- **Development of evaluation tools and skills**
  - Pragmatic first generation approaches and tools for specific Vietnamese conditions
  - Learning by doing + international collaboration
  - Incremental extension of scope and sophistication

- **Acceptance and dissemination**
  - Information and communication, especially with potential evaluees and users of evaluation results
  - Training and documentation
  - Gain acceptance through successful evaluations

- **Development of the network**
  - Building a national network of evaluation experts
  - Dissemination of skills through training
  - Cooperation with research and academic institutions

- **Development of the network**
  - Building a national network of evaluation experts
  - Dissemination of skills through training
  - Cooperation with research and academic institutions
Development path for organization and resources

Longer-term objectives
- Build a total staff of 30-40
- Build four fully-fledged centres of competence for main evaluation domains
- Secure sustainable financial basis, combining institutional funding and project income

Collaborative capacity building

example: The EvaCap project

Module 1: International conference on research evaluation
Two day conference, providing state-of-the-art information about approaches to selected priority evaluation areas; stimulate new initiatives and cooperation in key areas of research evaluation

Module 2: Development of foundations for the evaluation of Vietnam’s research institutions
Collaborative project to build knowledge, capacities and methodological base for the evaluation of research and development institutions in Vietnam through two joint pilot studies

Module 3: Knowledge and capacity building
Development of evaluation knowledge and capacities of Vietnamese experts and stakeholders; pilot event to initiate a systematic dissemination of evaluation knowledge in Vietnam (Evaluation Summer School)

Module 4: Confirmation and deepening of VISTEC’s capacities in advanced evaluation methodologies
Transfer of state-of-the-art methodological and application knowledge in modern evaluation techniques in a joint project on an advanced evaluation research topic in Vietnam (career paths of young researchers)
Some lessons learned

Do’s

✓ Full commitment and support of high-level leaders is crucial for establishing evaluation systems and culture
✓ Establish a dedicated institution which assumes responsibility for building and maintaining the evaluation system
✓ Invest in capacity building and development of skills to perform evaluations and to use their results for improvements
✓ Build acceptance and trust → successful evaluation requires stakeholder collaboration

Dont’s

❖ Accept alibi function and/or ‘pro forma’ assignments without impact
❖ Attempt to beyond your limits: Start with pragmatic assignments, go for more sophisticated approaches as experience and skills grow
❖ Become tired of requesting improvements of the necessary preconditions, e.g. better science statistics and program/project reporting

Questions? Suggestions?
Please do not hesitate to contact us

Corresponding author:
Dr. Michael Braun
Vietnam Science & Technology Evaluation Center
Viện Đánh giá Khoa học và Đánh giá Công nghệ
113 Tran Duy Hung Street, Cau Giay District,
Hanoi, Vietnam
Phone: +84 1244427960
Fax: +84 (0) 4 39365112
Email: michael@most.gov.vn
http://www.vistec.org.vn

Co-authors:
Mrs. Nguyễn Thị Thu Oanh: ntoanh@most.gov.vn
Dr. Tạ Đoàn Trịnh: tdtrinh@most.gov.vn