

Research evaluation in a country in transition

Experiences and lessons from Vietnam

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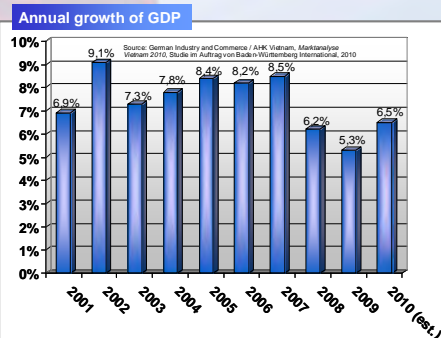
Vietnam has achieved remarkable economic growth a never-ending fairy tale?

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%
- Overall GDP 2009: 94 Bn. US\$ (per capita GDP: 1.095 US\$)
- 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)

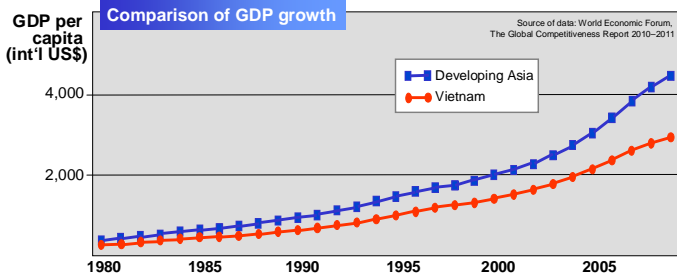


Sources of data:
 German Industry and Commerce / AHK Vietnam, *Marktanalyse Vietnam 2010*,
 Studie im Auftrag von Baden-Württemberg International, 2010
http://www.business-in-asia.com/vietnam/education_system_in_vietnam.html




Vietnam has achieved remarkable economic growth
... a never-ending fairy tale – or a flash in the pan?



Any reasons to worry?



A country comparison

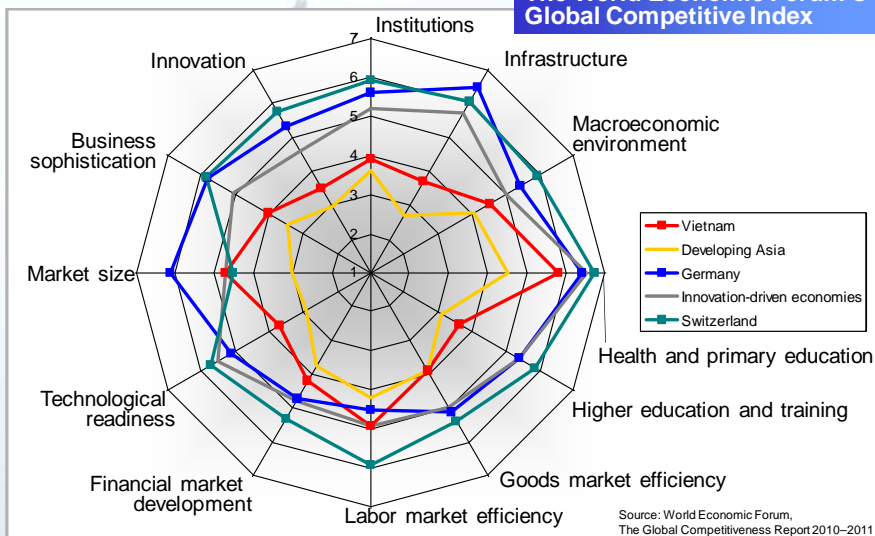
	Vietnam 	Singapore 	Germany 
Real GDP growth 2009	5.3 %	-2 %	-5 %
Real GDP growth 2010(est.)	6.5 %	14 %	3.4 %
Inflation rate (July 2010)	8.2 %	3.1 %	1.2 %
Gross foreign dept (in % of GDP)	39.0 %	11.0 %	153 %
Average age of population	27.4	39.6	44.3

Source: Uhde, A., *Blick aus Fernost – Der Preis ist Reis*, Venture Capital Magazin 11/2010, page 28

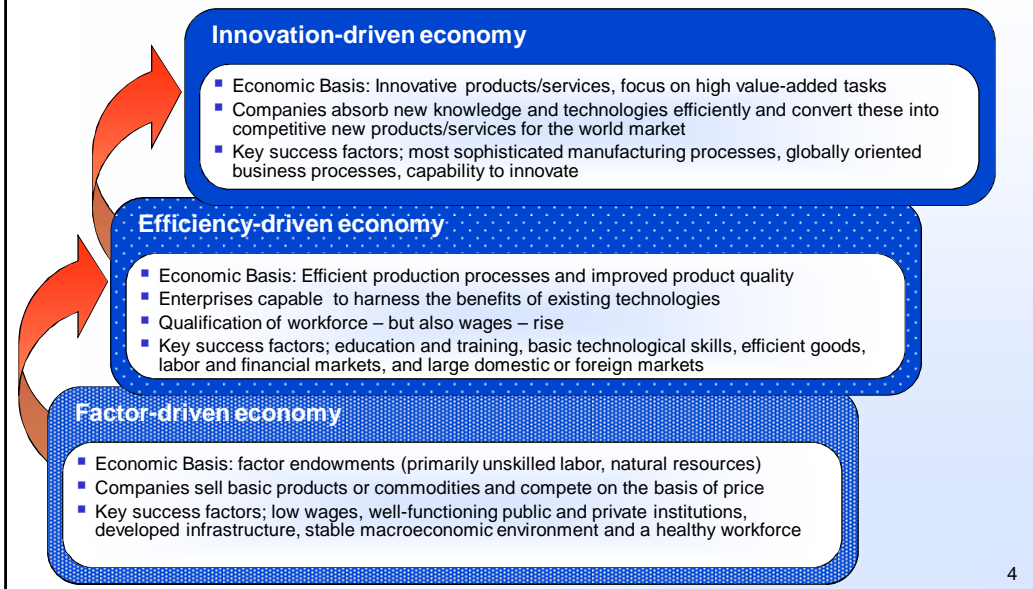
What is happening ...
... any obvious reasons?



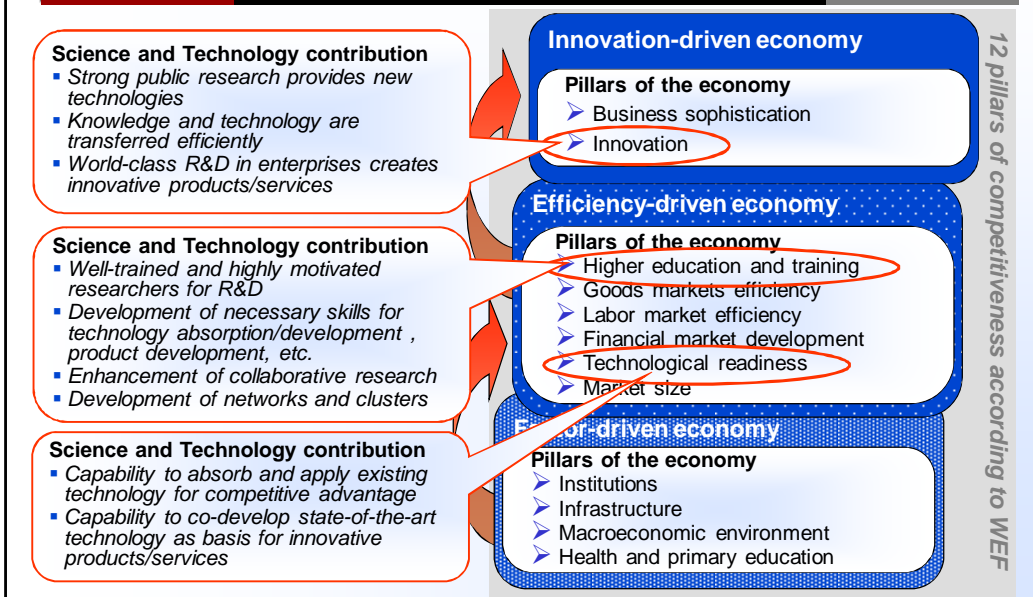
The World Economic Forum's Global Competitiveness Index



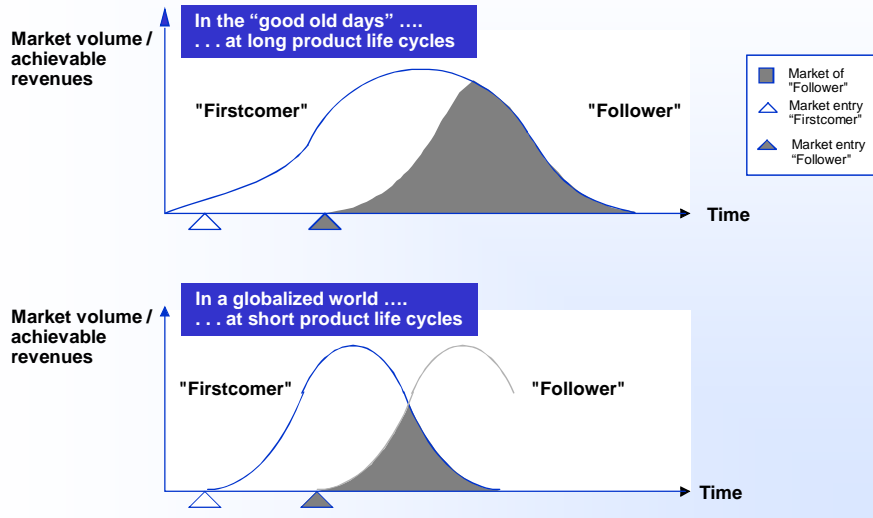
In the WEF's terminology, Vietnam is still a "factor-driven" economy



What has this to do with technology, research and innovation?
... they are cornerstones of a future economic growth mode!



Limited time to build innovation strength ...
... a challenge for a country in transition!

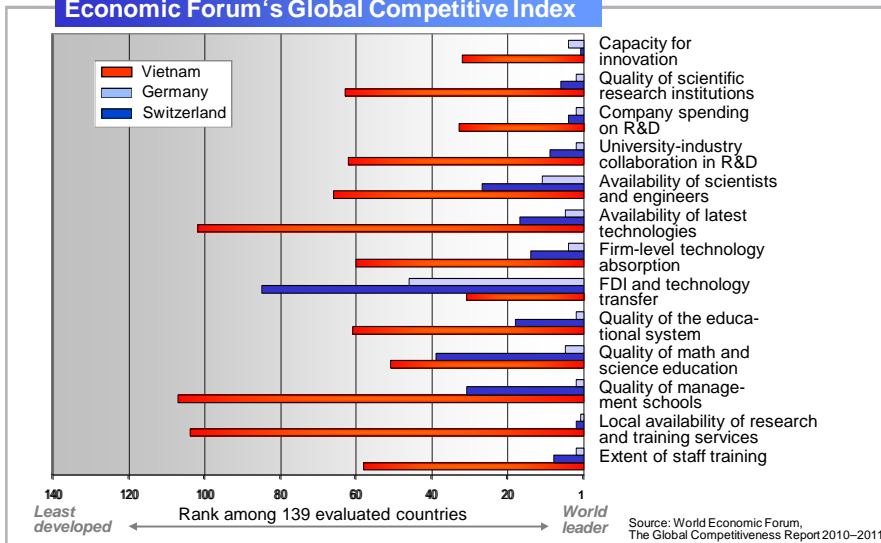


6

Is Vietnam ready for this innovation race?



Some detailed scores from the World Economic Forum's Global Competitiveness Index



7

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



Challenges for knowledge generation

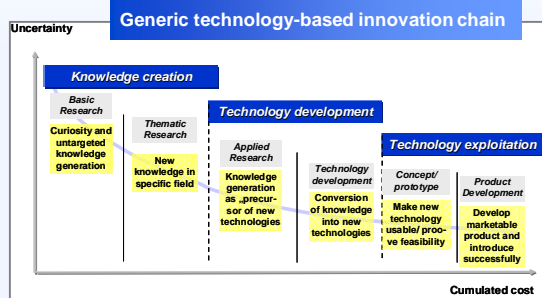
- Ensure scientific performance of research institutions at international scientific level
- Ensure high efficiency of structures and governance of the S+T system
- Unlock the potential of university-based research
- Allocation of limited public funds

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



8

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

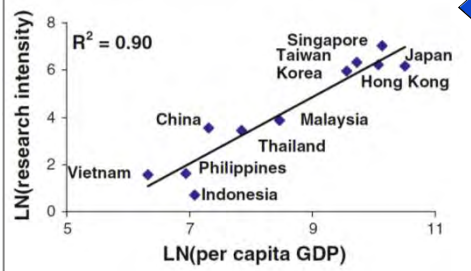
Knowledge creation

Technology development

Technology exploitation



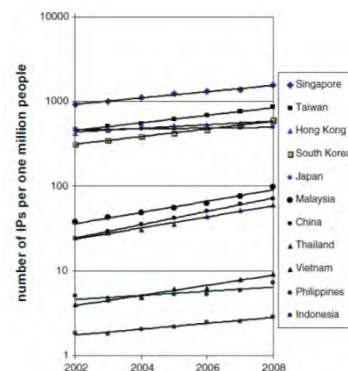
GDP per capita vs. research intensity



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

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

Science output: Publications as proxy



Source of data: P. D. Hien, A comparative study of research capabilities of East Asian countries and implications for Vietnam, High. Educ. DOI 10.1007/s10734-010-9319-5

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

Knowledge creation

Technology development

Technology exploitation



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

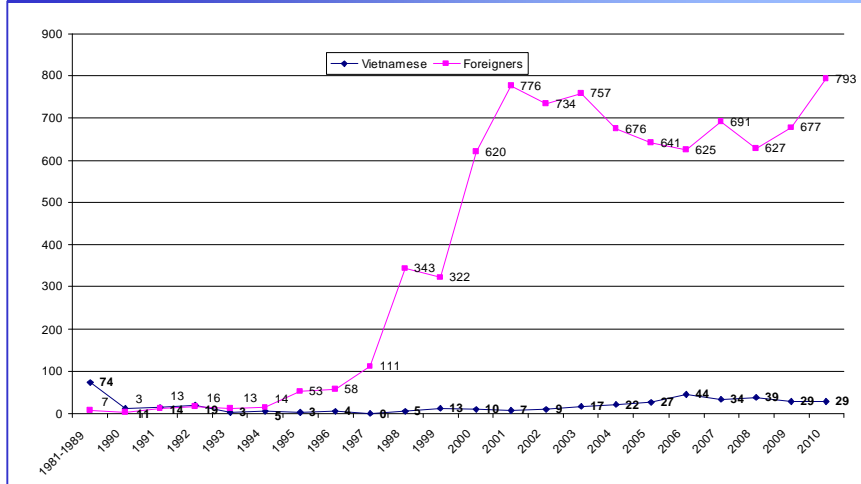
Knowledge creation

Technology development

Technology exploitation



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?

Knowledge creation

Technology development

Technology exploitation

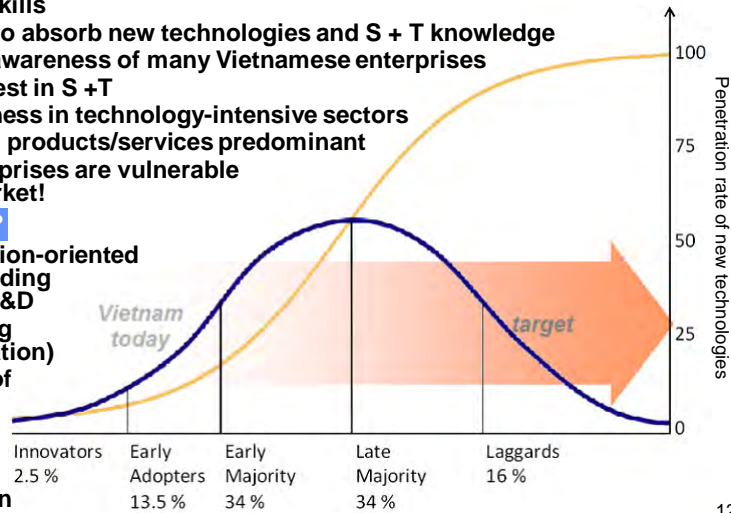


The Challenge

- 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



Source of graphics: Rogers, E. M., *Diffusion of Innovations*. New York: Free Press, 1962

12

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
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Necessary precondition

Transparency

- Appropriateness
- Efficiency
- Effectiveness
- Outcomes
- ...

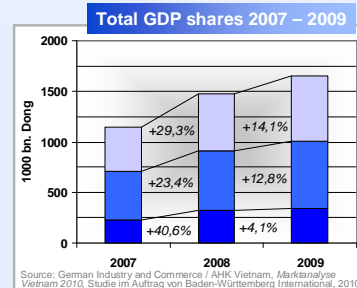
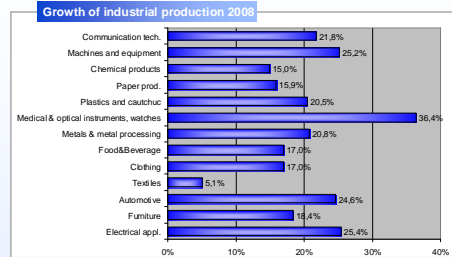


Issues for policy makers (1): Priority setting for technology policy



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 ↔ ...)?

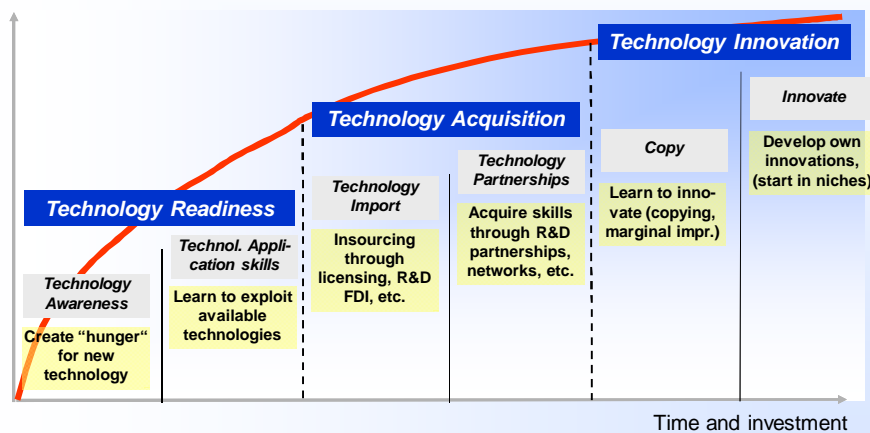


14

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



Technological skills



15

Issues for policy makers (3): Formulate policy measures to enhance research and innovation



Illustrative examples

Stimulation of research and development activities

- Funding programmes for application-oriented research (e.g. KC programmes)
- Indirect incentives (e.x. 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.)

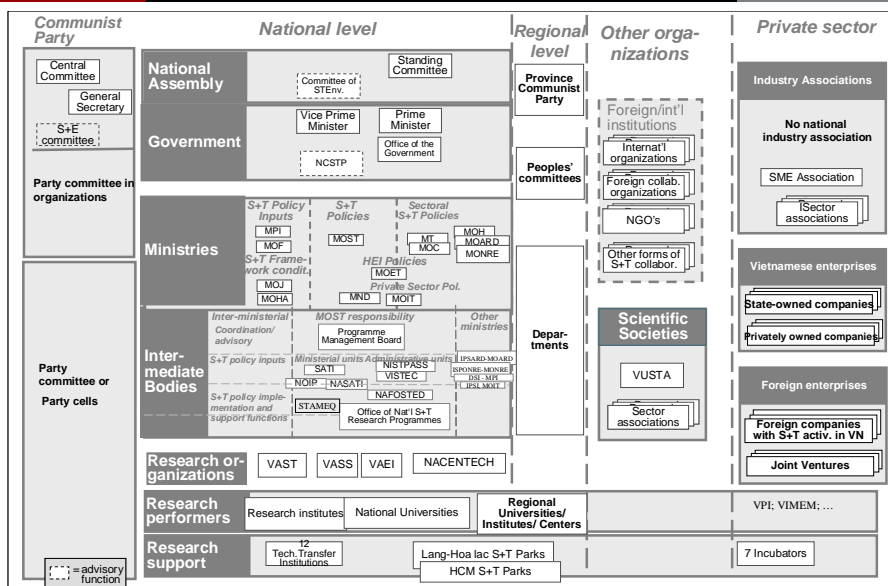
Stimulation of knowledge and technology acquisition from abroad

- 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).

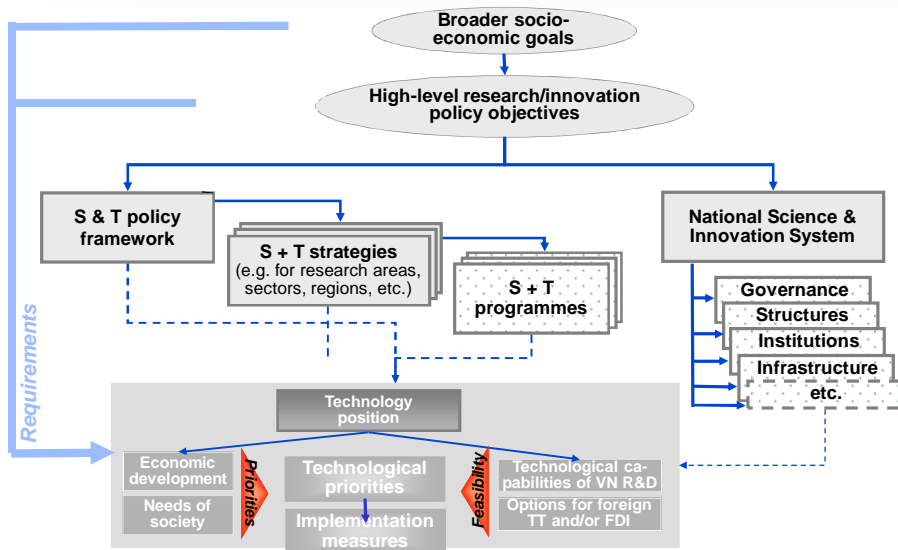
Enhance S + T skills and awareness

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

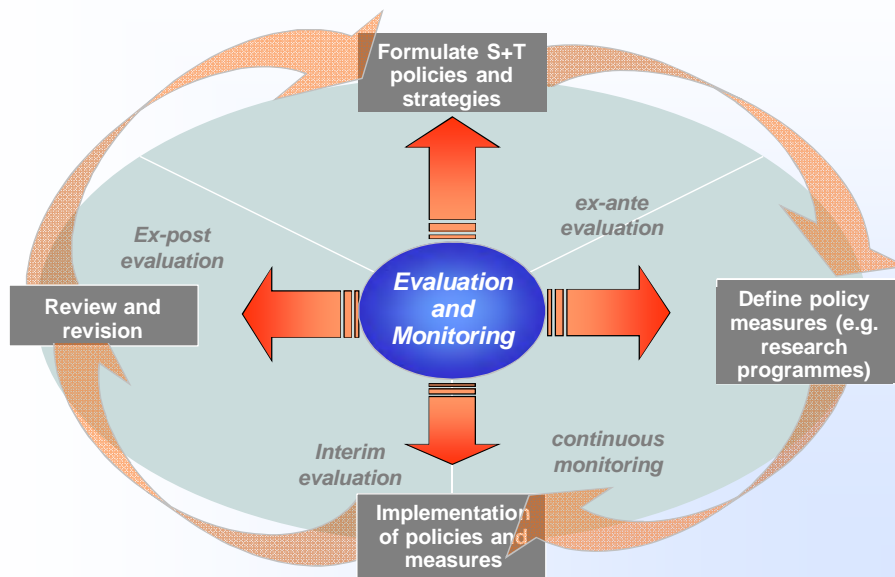
Issues for policy makers (4): Reform complex structures



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



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



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

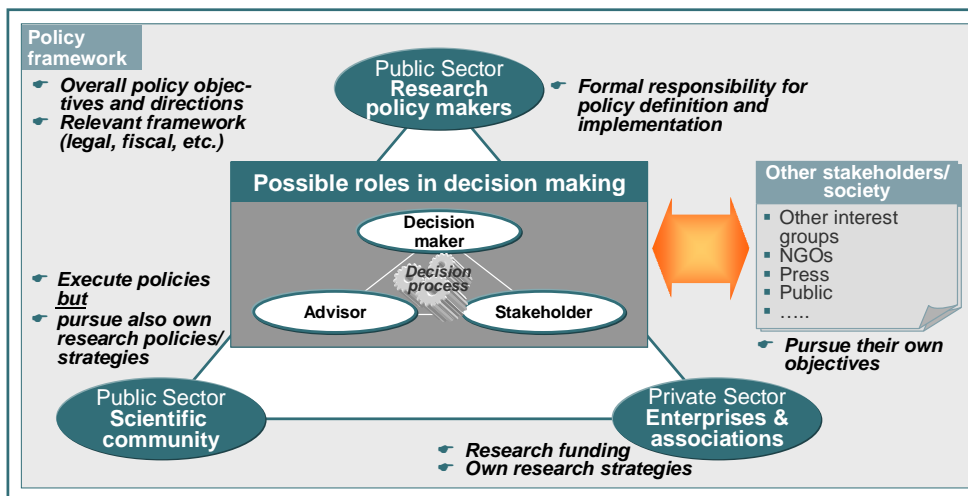
- Hierarchy-oriented Top-down policy and decision making processes
- Evaluation structures, resources and instruments non-existent
- Availability and quality of statistical data limited

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



Source: Proneos GmbH, Private Sector Interaction in the Decision Making Processes of Public Research Policies, Study for the European Commission, Research Directorate General, August 2006

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.²²




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

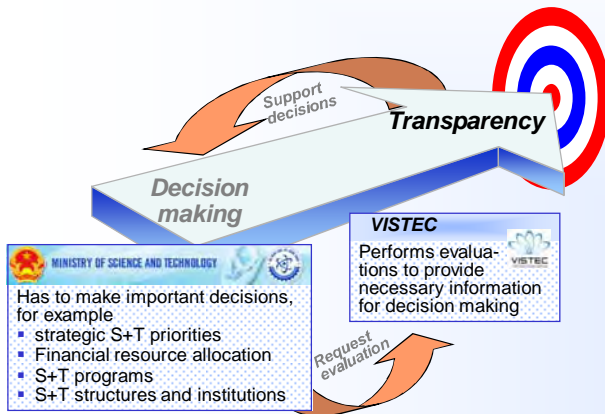
-  **Become the leading independent organization for conducting S + T evaluation activities in Vietnam**
-  **Implement evaluation principles of international standard in Vietnam**
-  **Provide useful recommendations for S + T budget allocation and for policy formulation and implementation**

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
- evaluating R&D Human Resources in Vietnam.



**VISTEC's role:
Create transparency and provide inputs 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	<p>VISTEC supports the decisions which Science and Technology (S + T) policy makers and research managers have to make by providing</p> <ul style="list-style-type: none"> ▪ state-of-the art analyses and evaluations of Vietnam's S + T system; and ▪ recommendations for improvement and further development.
Tasks	<p>To fulfill this mission, VISTEC</p> <ul style="list-style-type: none"> ▪ performs evaluations, strategic studies and technology valuations; ▪ develops and disseminates evaluation knowledge and methodologies; ▪ develops a national evaluation framework and an expert network.
Clients	<ul style="list-style-type: none"> ▪ 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	<p>VISTEC's portfolio of evaluation services focuses on</p> <ul style="list-style-type: none"> ▪ 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	<p>VISTEC supports the dissemination and application of S+T evaluation through</p> <ul style="list-style-type: none"> ▪ 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




Selected examples










<p>Own evaluation and study activities</p>	<p>Typical projects</p> <ul style="list-style-type: none"> ▪ 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.
<p>Evaluation framework development</p>	<ul style="list-style-type: none"> ▪ 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)
<p>Skill building</p>	<ul style="list-style-type: none"> ▪ VISTEC skill development <ul style="list-style-type: none"> - 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)
<p>Network development</p>	<ul style="list-style-type: none"> ▪ 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)


26

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 → 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 → adapt approach/tools*



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 evaluatees and users of evaluation results
- Training and documentation
- Gain acceptance through successful evaluations

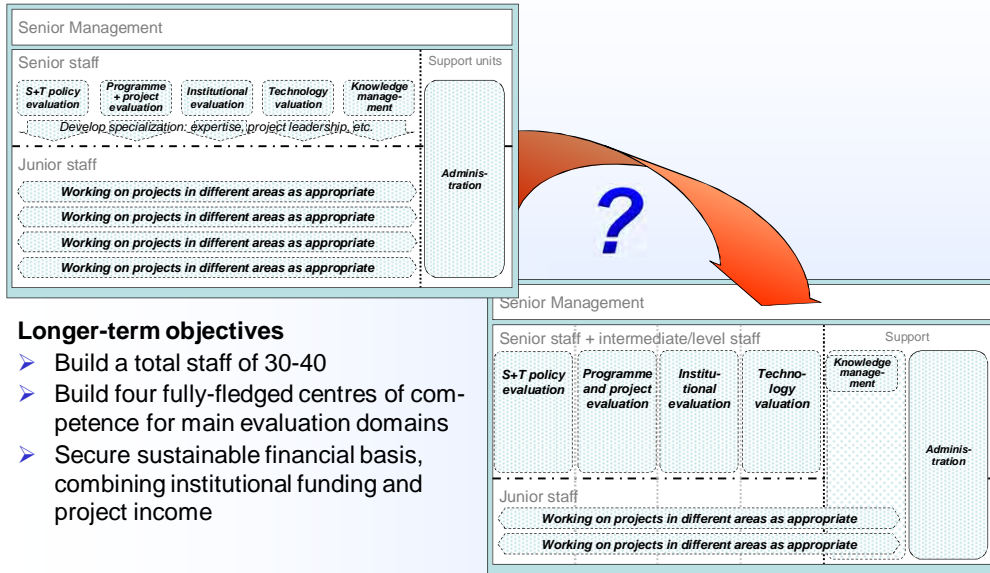
Development of the network

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

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Development path for organization and resources



Collaborative capacity building example: The *EvaCap* project

Initiation



Project partners



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 know how, 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 know how 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 pre-conditions, e.g. better science statistics and program/project reporting*

32

Questions? Suggestions?
Please do not hesitate to contact us



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