

**INTERNATIONAL FORUM ON
“THE MAKKAH DECLARATION :
IMPLEMENTING THE ECONOMIC
AGENDA OF THE MUSLIM WORLD”
1 – 3 SEPTEMBER 2007,
KUALA LUMPUR, MALAYSIA**

**PANEL DISCUSSION ON SCIENCE
AND TECHNOLOGY
DEVELOPMENT**

3rd SEPTEMBER 2007

**WHAT IS THE STATUS OF
SCIENTIFIC RESEARCH AND
DEVELOPMENT IN THE MUSLIM
WORLD?**

THE ANSWER : NOT SATISFACTORY

- **OIC countries' expenditure on R&D as a proportion of GDP – about one tenth that expended by most developed nations; OIC Average : 0.36%, World Average: 2.36%, Malaysia: 0.69%**
- **Number of researchers, scientists and engineers in the OIC engaged in R & D is one tenth that found in the developed world;**
- **The number of patents filed by OIC nationals in 1997 accounted for only 0.3% of the world average;**
- **Scientific publications in international journals by scientists and engineers from member countries accounted for only about 3% of the world's total.**

*Source: OIC Conference on S&T,
October – 7 to 10, 2003, Kuala Lumpur*

GLOBAL SCIENCE, TECHNOLOGY & INNOVATION CAPACITY

- **STRONG – 25 COUNTRIES, MAINLY OECD**
- **MODERATE – ABOUT 100 COUNTRIES, INCLUDING CHINA, INDIA, BRAZIL, MALAYSIA, TURKEY**
- **WEAK – 79 COUNTRIES, MAINLY SUB-SAHARAN AFRICA AND ISLAMIC REGION**

Source: Mohamed H.A. Hassan, TWAS Newsletter 1, 2007

**WILL EMPHASIS ON R&D INCREASE AS
MUSLIM COUNTRIES SEEK TO
DIVERSIFY THEIR ECONOMIES?**

**Not necessarily so unless
there is realization, acceptance
and commitment**

**OIC VISION 1441 ON S&T
OIC CONFERENCE ON S&T, 7 - 10
OCTOBER, 2003 IN KUALA LUMPUR**

***“OIC member states are committed to
become a community that values
knowledge and is competent in utilizing
and advancing S&T to enhance the
socio-economic well-being of the
Ummah”***

OIC VISION 1441 – STRATEGIC THRUSTS:

- ❖ **Commitment**
- ❖ **Capabilities and capacity**
- ❖ **Collaboration**
- ❖ **Concentration**
- ❖ **Culture**
- ❖ **Community**
- ❖ **Compassion**

26 recommendation covering all above thrust areas.

WHAT STEPS ARE NEEDED TO MOVE FORWARD?

- ✓ **Realization of the importance of S&T in the K-Economy**
- ✓ **Doing good science is not good enough**
- ✓ **Good science must be translated into innovative technologies which deliver; new product; new services and productivity increases AT THE MARKET PLACE**
- ✓ **Promoting and managing the total value chain:**
Science → Technology → Innovation → Utilization / Commercialization
- ✓ **Developing a National Innovation System**

KNOWLEDGE-DRIVEN ECONOMY (K-ECONOMY)

- **There is increasing urgency for capacity to harness Science and Technology in the K-Economy;**
- **Because K-Economy is about increased application of K (Science & Technology)**
 - **In traditional sectors, using various enabling of technologies (ICT, Biotechnology, nanotechnology, new materials etc.)**
 - **In new economic sectors which are ICT-based ie: e- or i- or multimedia businesses**
 - **In governance (ie. Application of relevant technologies in public and corporate governance)**
 - **“K-governance”**

THE PLAYERS IN K-ECONOMY

**GOVERNMENT
RESEARCH
INSTITUTES**

UNIVERSITIES

**INDUSTRY
RESEARCH
INSTITUTES**

**NEW
PRODUCTS**

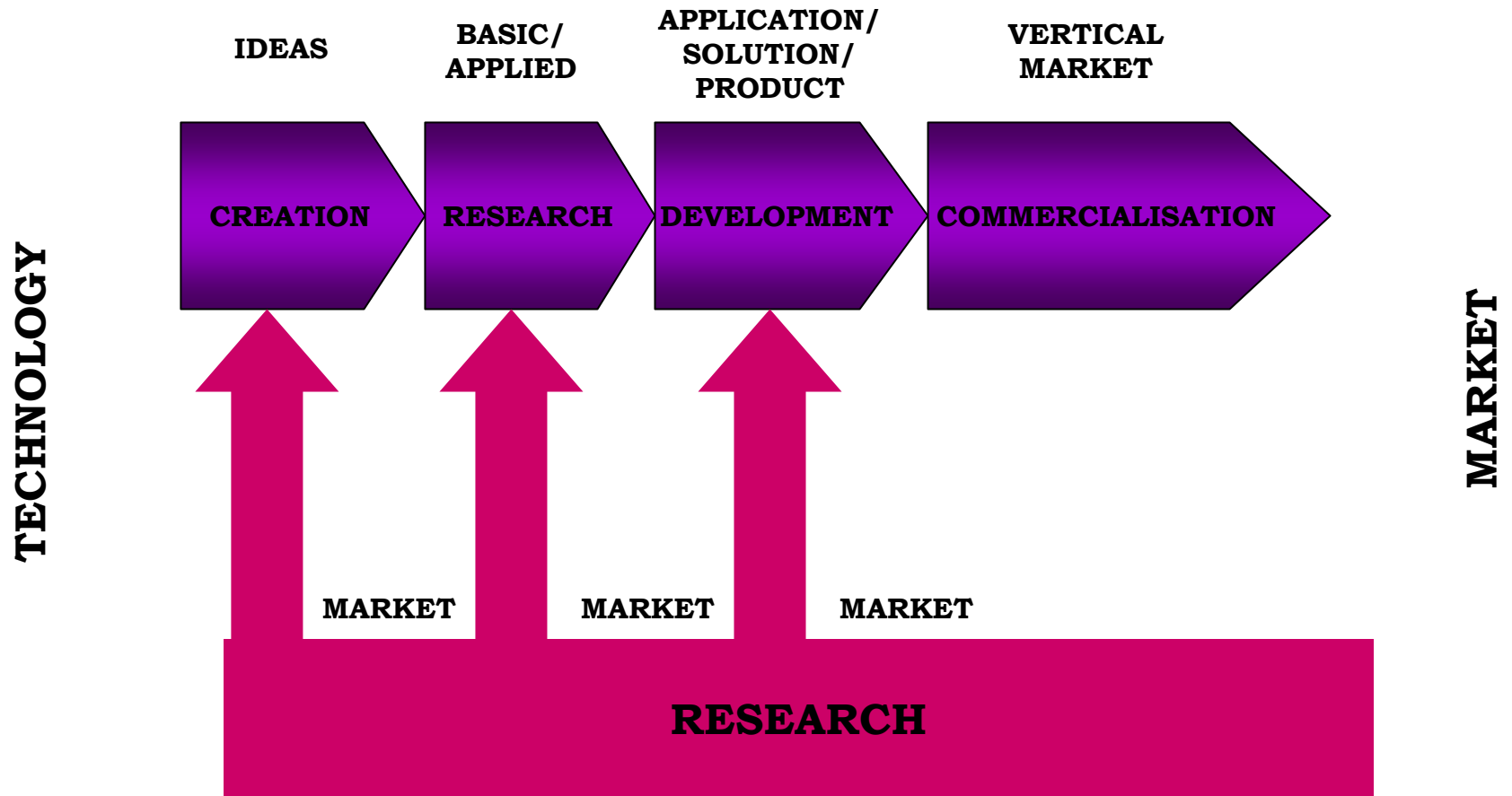
NEW SERVICES

**PRODUCTIVITY
INCREASES**

GOVERNMENT

INDUSTRY

S&T VALUE CHAIN – MANUFACTURING ECONOMY



AGRO – BASED ECONOMY

OLD

PLANT

HARVEST

MIDDLEMAN

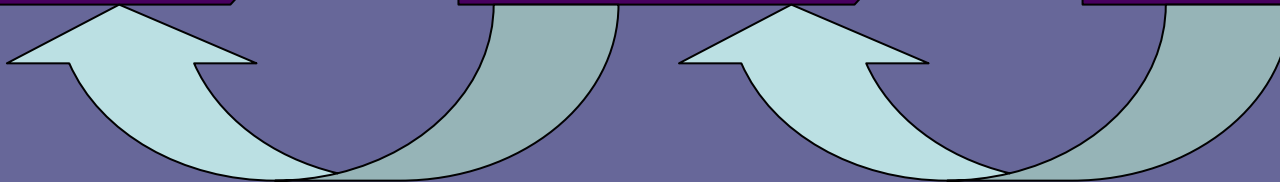
MARKET

NEW

***K – INTENSIVE
AGRICULTURE***

***COLLECT /
PROCESS /
PACKAGE /
STORE / DELIVER***

CUSTOMERS



S&T VALUE CHAIN – TRADING ECONOMY



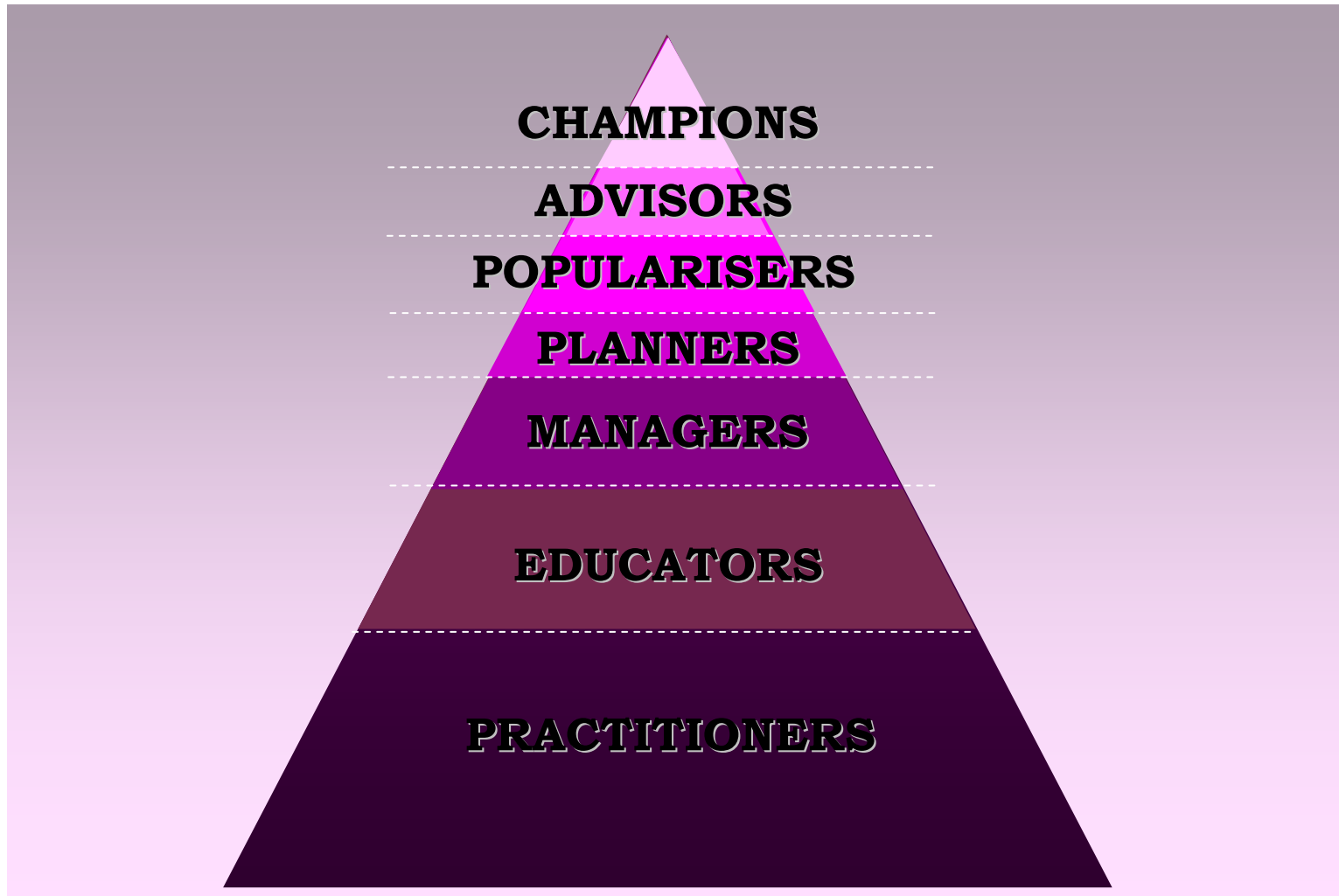
THE FIVE ISLAMIC WORLDS

1. SOUTH EAST ASIA – TRADING
2. CENTRAL ASIA – LAND-BOURNE
TRADING – SILK
ROUTE
3. MIDDLE EAST – TRADING – SEA & LAND
4. NORTH AFRICA – SEA BOURNE TRADING –
MEDITERRANEAN
SYSTEM
5. SUB-SAHARAN AFRICA – BASICALLY TRADING –
LIMITED SCALE

GETTING STARTED

- **Total S&T Human Resource**
- **Technology Management Best Practice Framework**
- **National Innovation System**

S&T HUMAN RESOURCE PYRAMID



TECHNOLOGY MANAGEMENT FRAMEWORK

- **Political Commitment**
- **Policy integration**
- **S&T Advisory System**
- **S&T Development Planning and Coordination**
- **S&T Infrastructure**
- **Funding & Management of R&D**
- **Mechanism for Commercialization of Research & Technology**
- **Integrated Human Resource Development**
- **Mechanism for S&T Enculturation**
- **Smart Partnership Practices**

NATIONAL INNOVATION SYSTEM FRAMEWORK

