ICT Strategy in Higher Education in Syria

Prof. Najib Abdul-Wahed
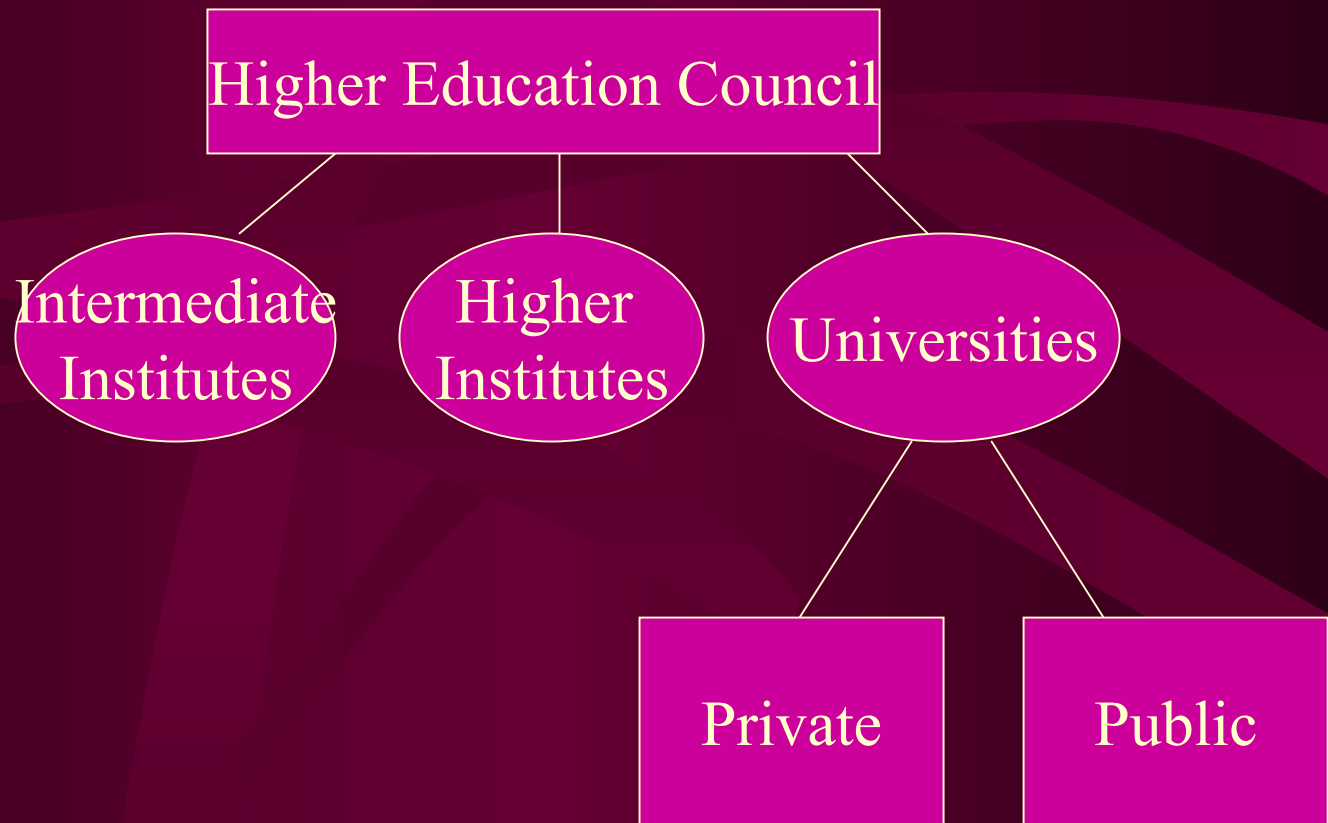
Deputy Minister of Higher Education

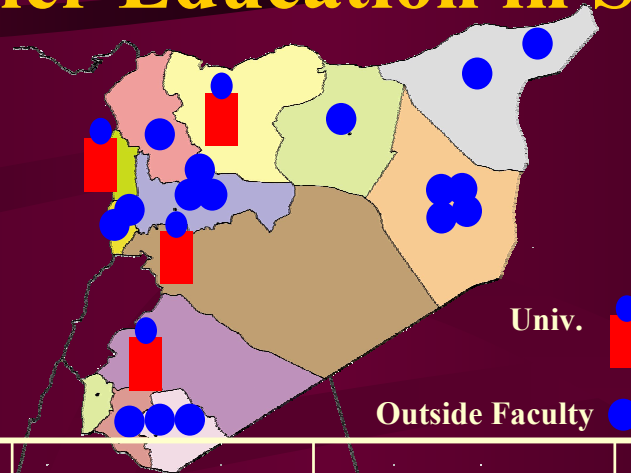## Dr. Nawar Al-Awa

Dean of IT Faculty

Plan

- Higher Education in Syria
- ICT: A Tool for Higher Education
- Human resource development in ICT Sector
- ICT in Higher Education Strategy
- Conclusions and Perspectives

Higher Education in Syria
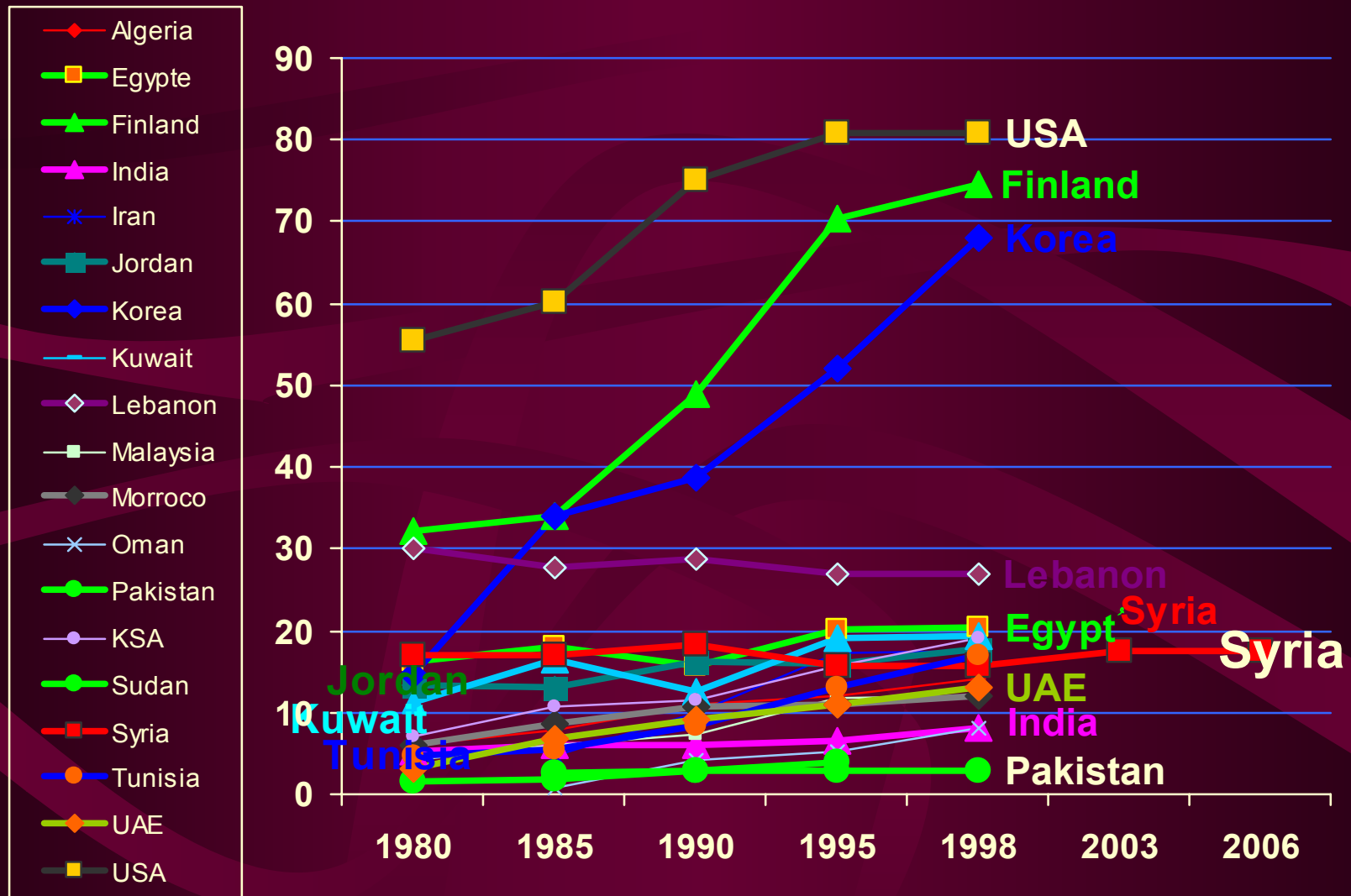
Higher Education in Syria …

Univ.

Outside Faculty

University	City	Created	Staff	Students	Open Learning
Damascus	Damascus	1923	2123	110000	37012
Aleppo	Aleppo	1958	1150	65000	26552
Teshreen	Lattakia	1971	892	40000	12145
Al-Baath	Homs	1979	525	30000	11405
Total			4690	245000	87114

Higher Education in Syria …

Intermediate Institutes	Number	Students
Higher Education	34	*34138*
Other Ministries	122	*20913*

Enrolment Rate in Some Countries

Higher Education in Syria…

Private Universities

8 opened Universities ★

2 allowed but not yet opened ●

18 universities with preliminary permission ▮

15 universities pending ▮
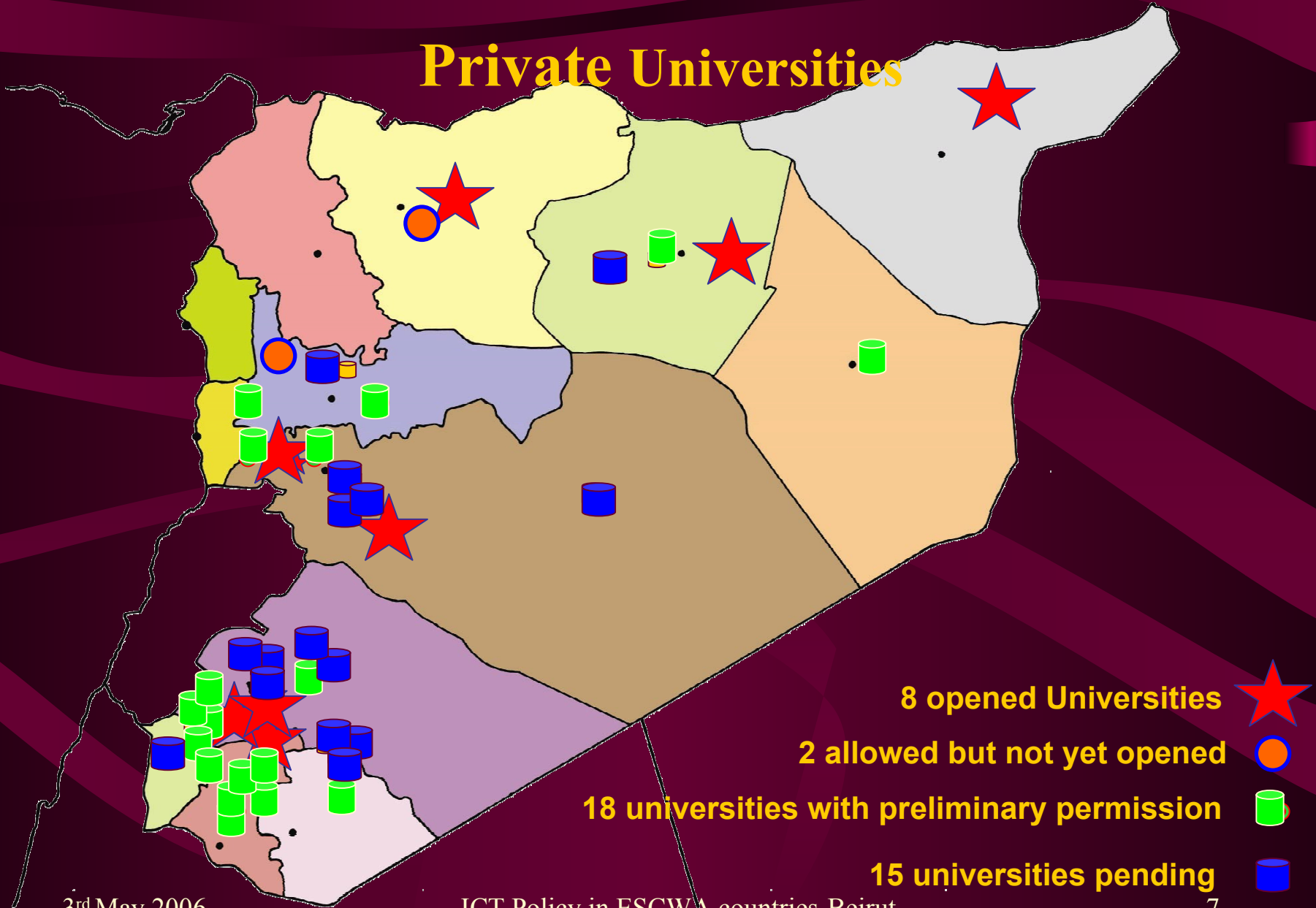
Higher Education in Syria Private Universities

University	City	Students
Kalamoon	Deir-atieh	1766
IUST	Daraa	365
AEU	Daraa	701
Al-Mamoun	Hasaka	2098
Private University for Science and Arts	Aleppo	417
Union (itihad)	Aleppo	956
Syrian International	Daraa	363
Al-Wadi	Homs	148
Total		*6814*

Low Quality of Education (students and Prof)

Migration of "Brains"

Challenges

Huge Number of Students needing Higher Education

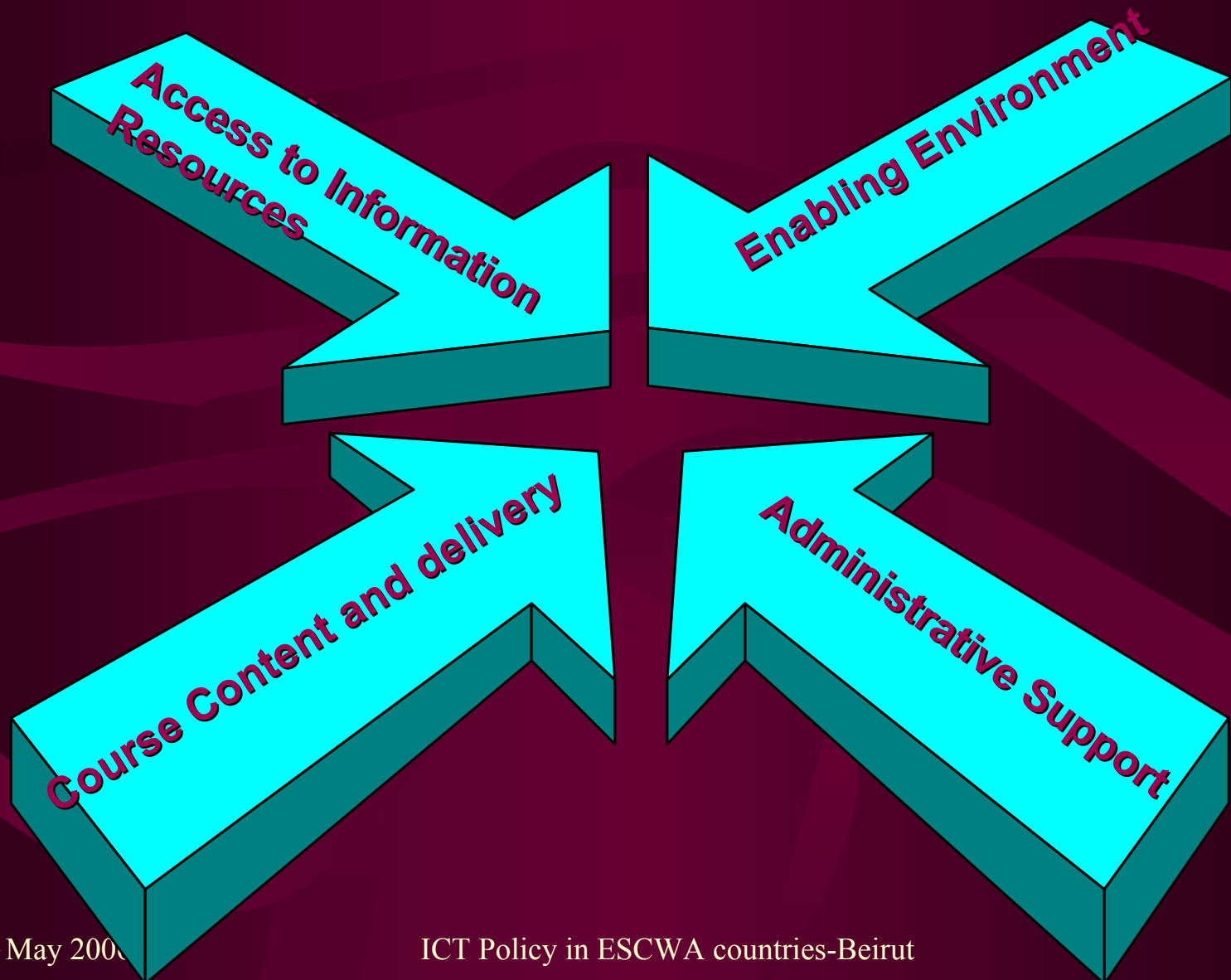Incompatibility with Market Needs

Traditional Style In Teaching

Poor Expenditure on Education

Selection according to student score Not preference

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ICT: A Tool for Higher Education

Access to Information Resources

Enabling Environment

Course Content and delivery

Administrative Support

ICT as a tool...

- Influence on WHAT is learned
  - Access to variety of information sources, types, and forms
  - Learning becomes problem-centered, and inquiry-based
- Influence on HOW is learned
  - Student-centered learning
  - New learning theory: Constructive Principles
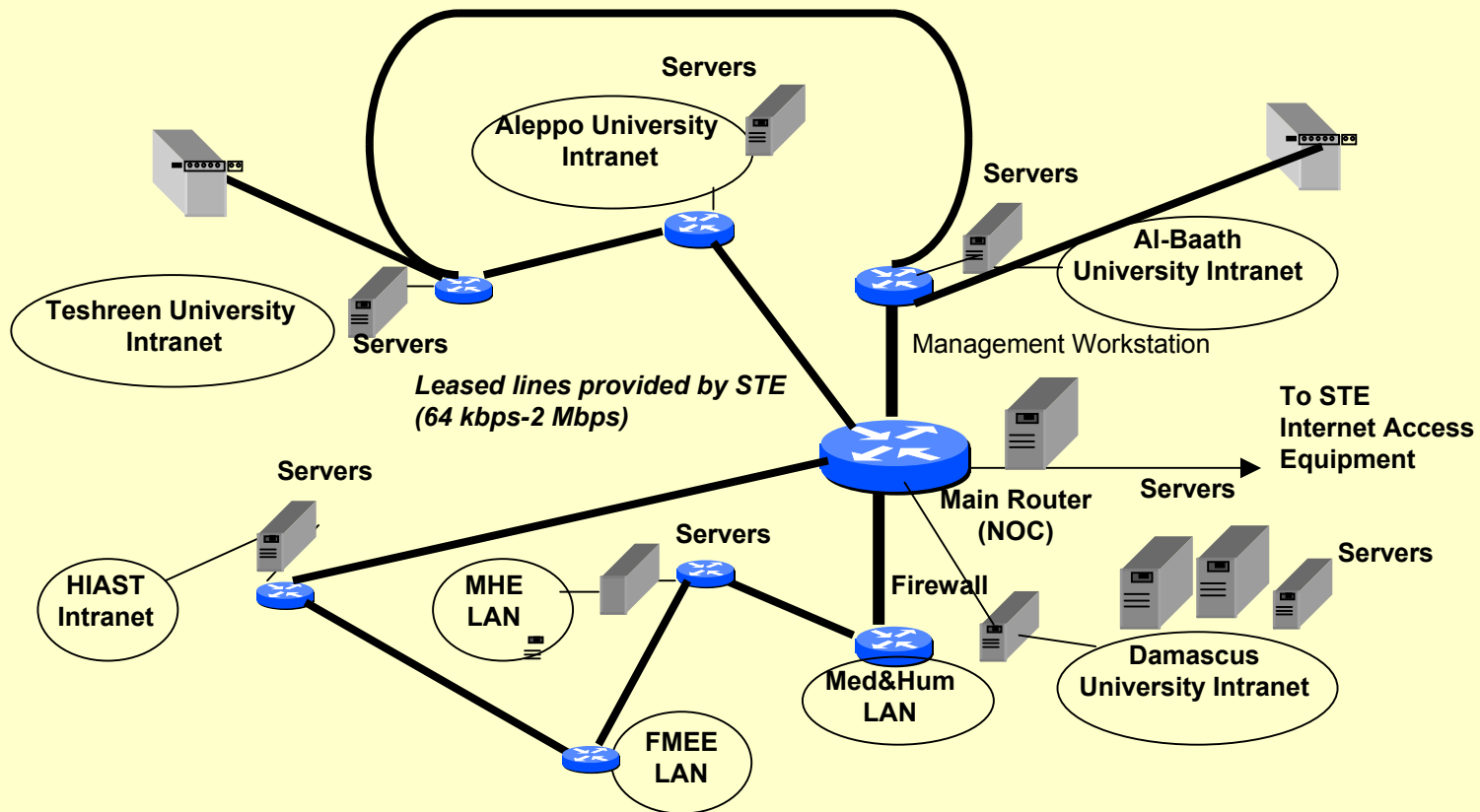   - Construction of meaning instead of memorization of facts.

ICT as a tool…

- Influence on WHEN and WHERE is learned
  - Anywhere:
    - On-line material
    - Distance learning
    - Students may enroll in any world-wide program
  - Anytime:
    - No temporal constraints
- Other benefits
  - Expand the pool of teachers and students
  - Reduce the cost of education
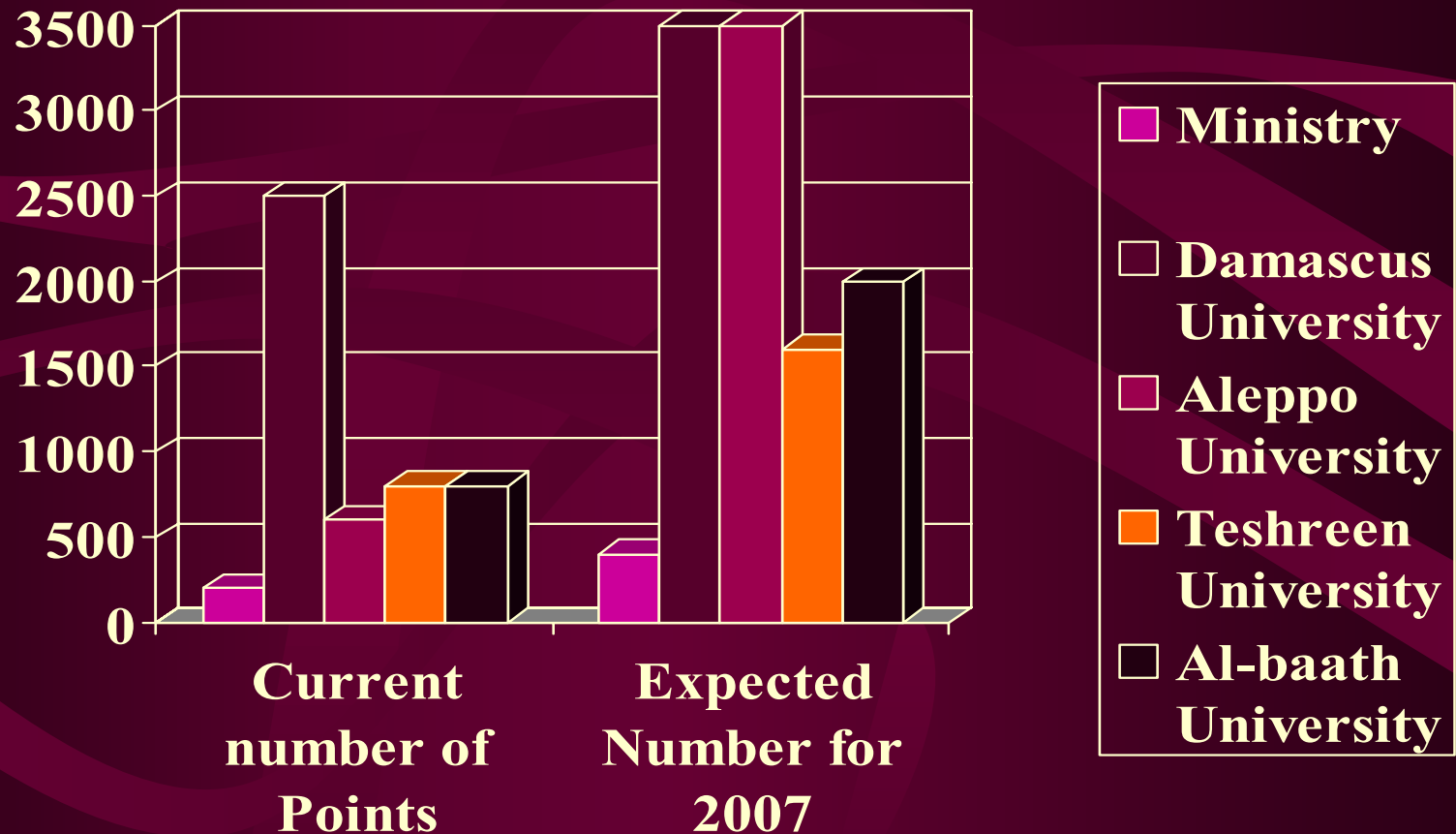
ICT as a tool…
Enabling Infrastructure

- SHERN (Syrian H.E. & Research Network)
  - Collaboration with UNDP and UNESCO
  - Objective:
    - build an advanced network connecting universities. Research centers, and Institutes
    - Promote distant learning and collaborative research
    - Provide students with "easy" access to information resources
  - Operational since 2002

SHERN…

Servers

Aleppo University Intranet

Servers

Al-Baath University Intranet

Teshreen University Intranet

Servers

Management Workstation

Leased lines provided by STE (64 kbps-2 Mbps)

Servers

To STE Internet Access Equipment

Servers

HIAST Intranet

Main Router (NOC)

Servers

MHE LAN

Firewall

Servers

Damascus University Intranet

Med&Hum LAN

FMEE LAN

SHERN… Evolution

Legend:
- Ministry
- Damascus University
- Aleppo University
- Teshreen University
- Al-baath University

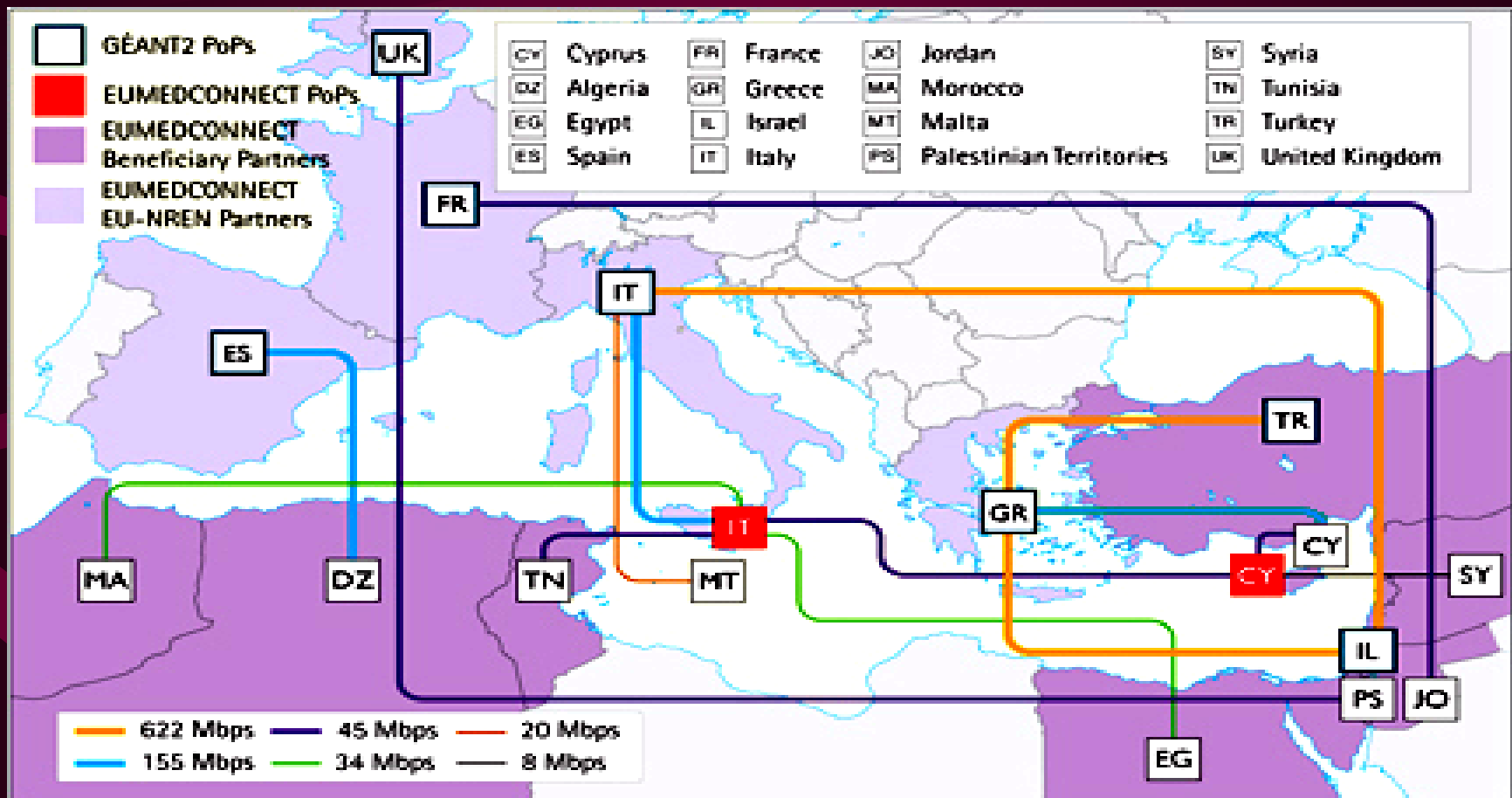Categories: Current number of Points, Expected Number for 2007

SHERN… Evolution

SHERN… EUMEDCONNECT

Connection of 12 Mediterranean countries with 25 European countries

SHERN …
Available services

– Internet Browsing

– E-Mail

– E-Libraries

– E-Learning

– Video Conference

– Multimedia Broadcasting

– Administrative Information Exchange

– Research Data Center

From SHERN to EUMEDEGRID

- Objectives
  - Stimulate the formation of National Grid Infrastructures (NGI) in the Mediterranean Countries.
  - Promote Grid awareness in the region
  - Establish a dialogue regarding policy developments for research and education networking and provide input to the agenda of national funding bodies and if possible governments.
  - Capture local eScience user requirements in terms of resources needed, Grid services, and application software.

From SHERN to EUMEDEGRID…

- ## Objectives…
  - Provide guidelines to regional integration in the Euro-Mediterranean infrastructures.
  - exploit the infrastructure provided by the Gigabit Pan-European Research & Education Network (GEANT) and the Mediterranean Research and Education Networking (EUMEDCONNECT) initiative in the region.
  - support the deployment of applications (High Energy Physics, BioMed,…)

- ## Partners
- INFN (Italy) - CERN (Switzerland) – CYNET (Cyprus)
- DANTE (UK) - Consortium GARR (Italy) - GRNET (Greece)
- RED.ES . (Spain) - University of Malta (Malta) - CERIST (Algeria)
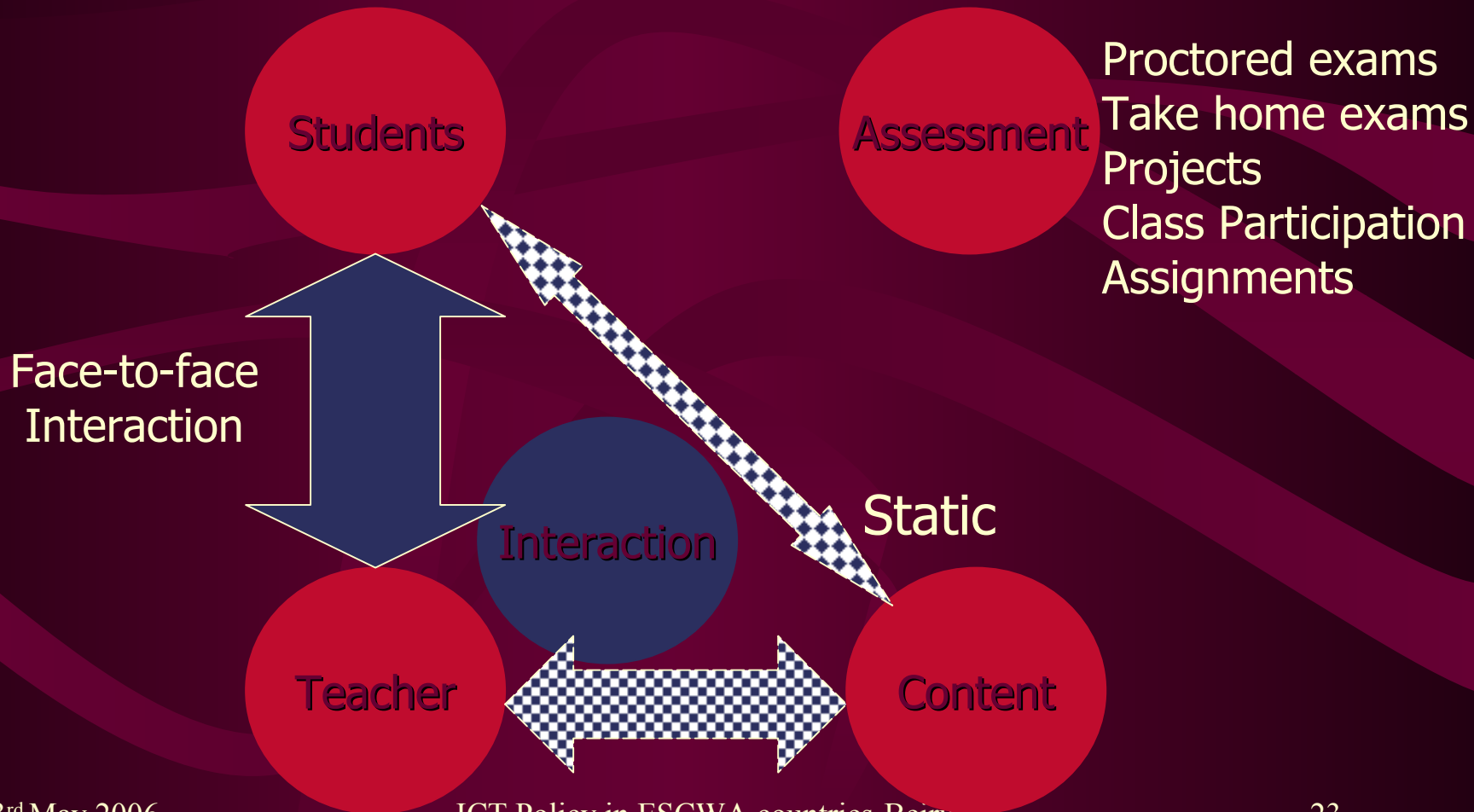- CNRST (Morocco) – HIAST (Syria)

ICT as a tool…
Syrian Virtual University

- Integrated virtual environment

- Similar to conventional universities

- All student activities and tasks can be performed

- Automated electronic administration

- Developed interactive content

- Virtual Classrooms

SVU…
learning process

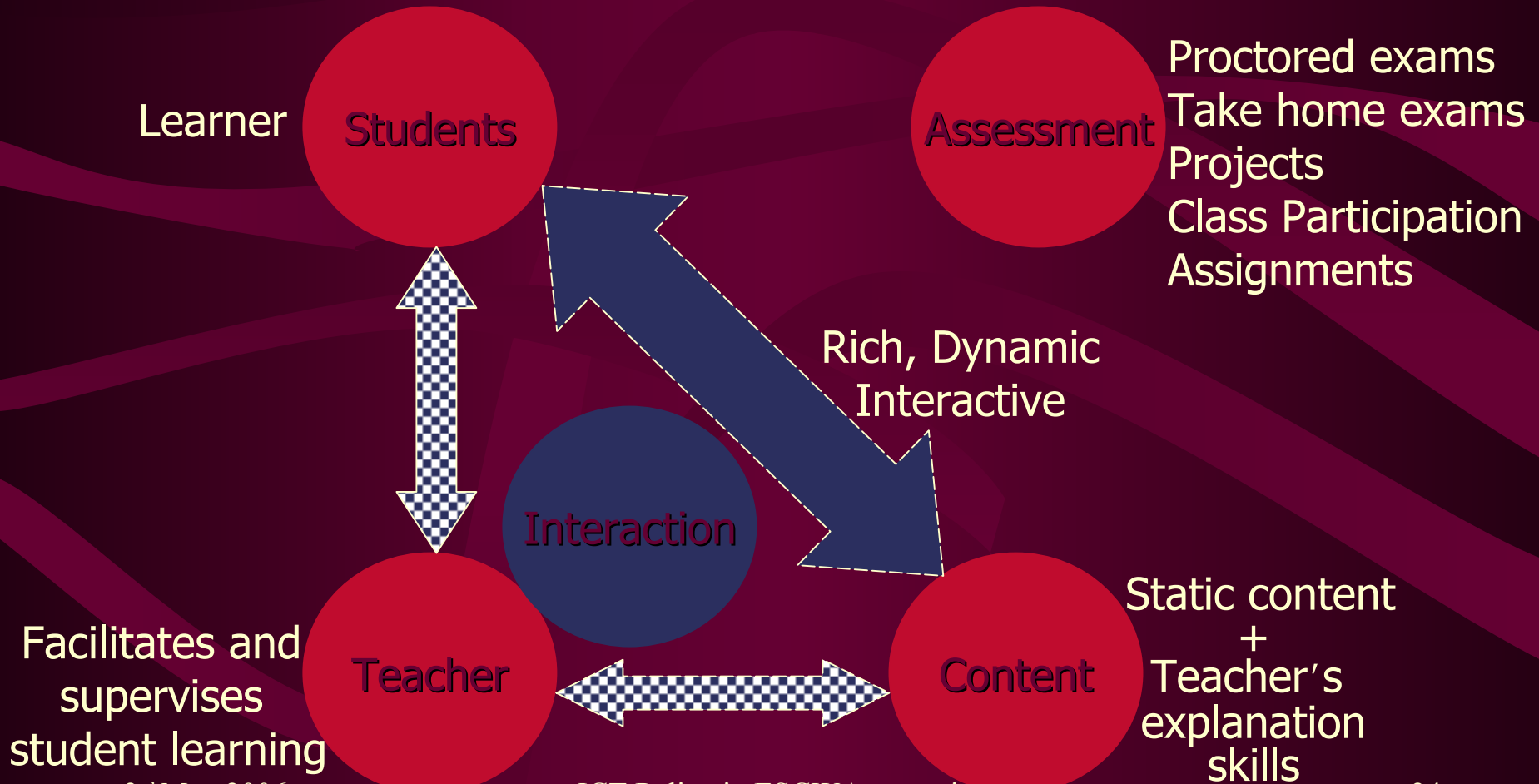- **In a conventional classroom:**

Students

Assessment

Proctored exams
Take home exams
Projects
Class Participation
Assignments

Face-to-face
Interaction

Interaction

Static

Teacher

Content

SVU…
learning process

- **In a virtual classroom:**

Learner

Students

Assessment

Proctored exams
Take home exams
Projects
Class Participation
Assignments

Rich, Dynamic
Interactive

Interaction

Facilitates and supervises student learning

Teacher

Content

Static content
+
Teacher's explanation skills

SVU…
diplomas

- **High National Diploma** (Associate degree)
  - **Internet Studies.**
  - **Web Development and Programming**
  - **Management**
  - **Marketing**
  - **General Business**
- **Business Information Technology** (Bachelor)
  - **IT**
  - **Management.**
  - **Marketing.**
  - **General Business**
  - **English**

- **Information Systems Engineering**
  - **160 credit based engineering degree**
  - **10 different specializations**
  - **4 years (3 semesters/year)**
- **Diploma in Educational Habilitation**
  - **Teaching habilitation**
  - **One year program with 11 courses.**
  - **Practical (In-class teaching course)**
  - **10 courses in education and psychology**

SVU…
Enrolment

| Program	Students
Education	1700
HND	475
Preparatory	75
BIT	330
Engineering	165

ICT: A tool…
Computerization of Administration

- Project phases (2 years)
  - Information gathering
  - Simplification of procedures upon the new proposed Ministry structure
  - Implementation of the new Information System
  - Data input
  - Staff training

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HRD in ICT Sector

SVU

Faculty of IT

Faculty of Electrical Eng.

Computer Institute
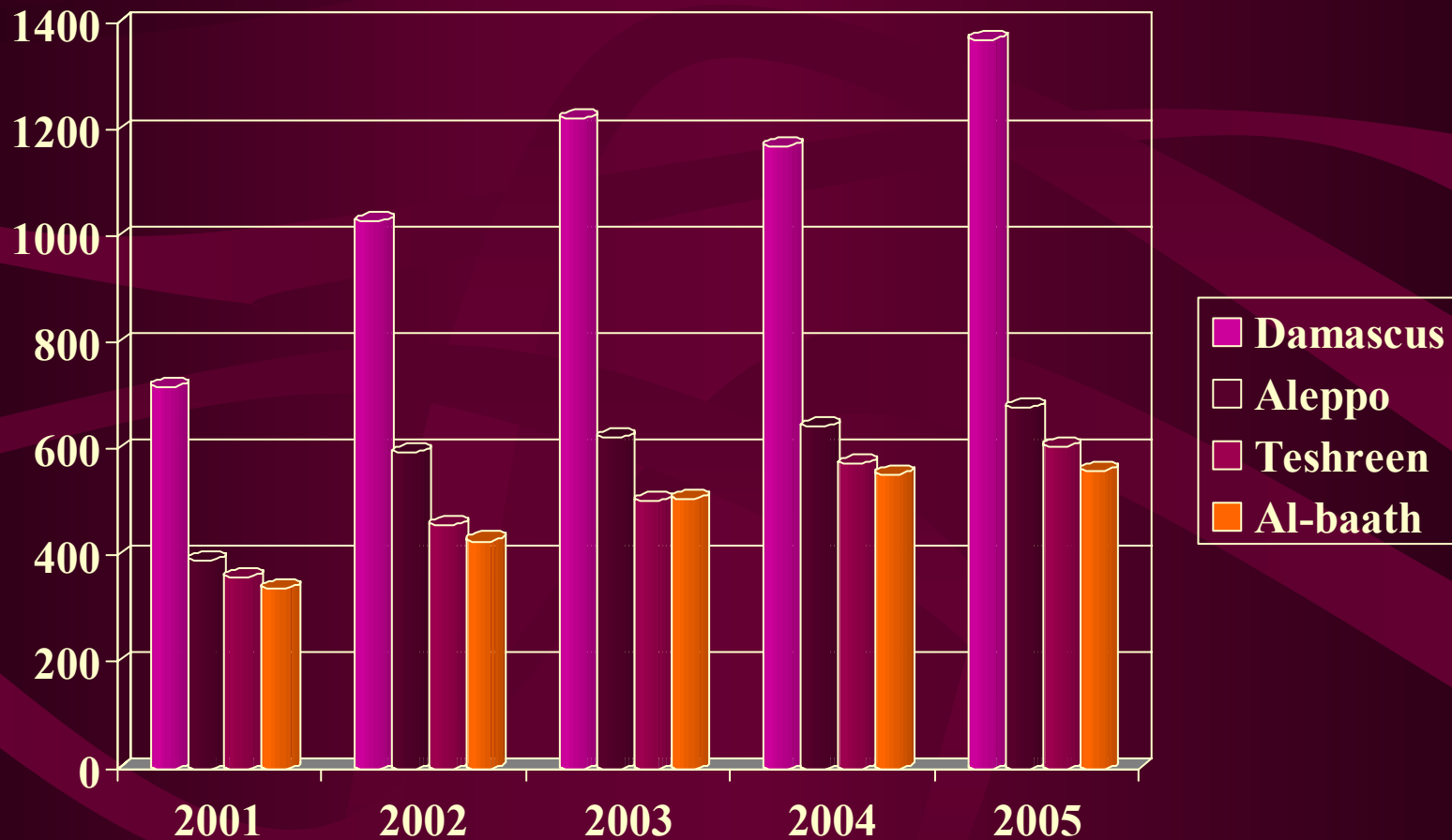
HIAST

Private Univ
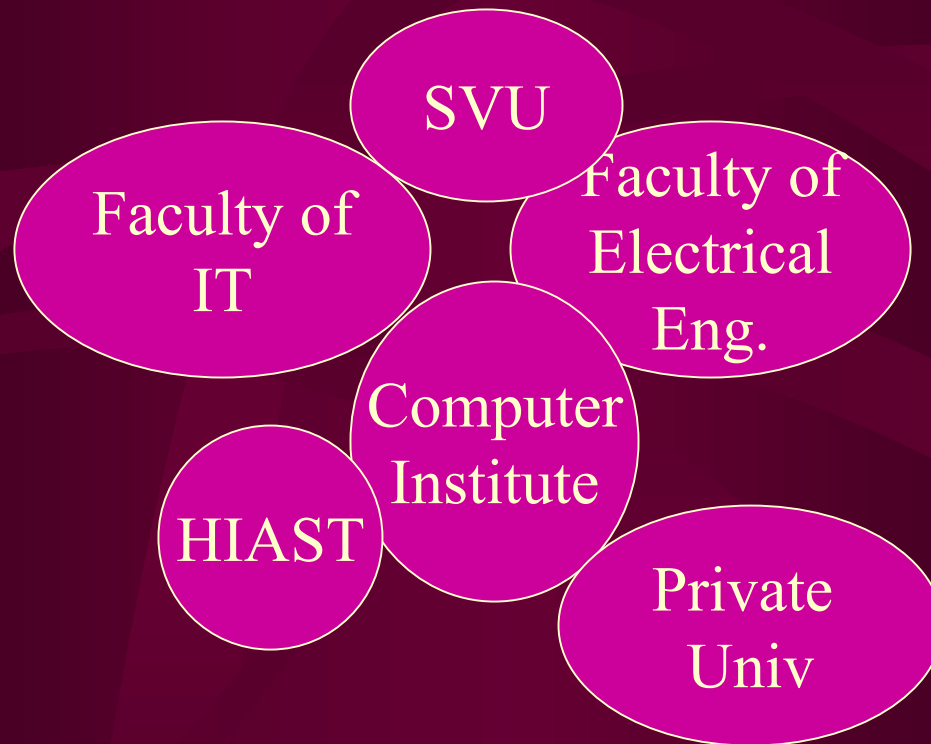
HRD in ICT Sector…
Faculty of IT Engineering

- Established in 2000
- 5-year program
- 3 majors:
  - Computer Systems and Networks
  - Software Engineering and Information Systems
  - Artificial Intelligence
- UNDP assessment 2003: Satisfactory
- Hardworking students: more than 95% in Baccalaureate degree.

HRD in ICT sector…
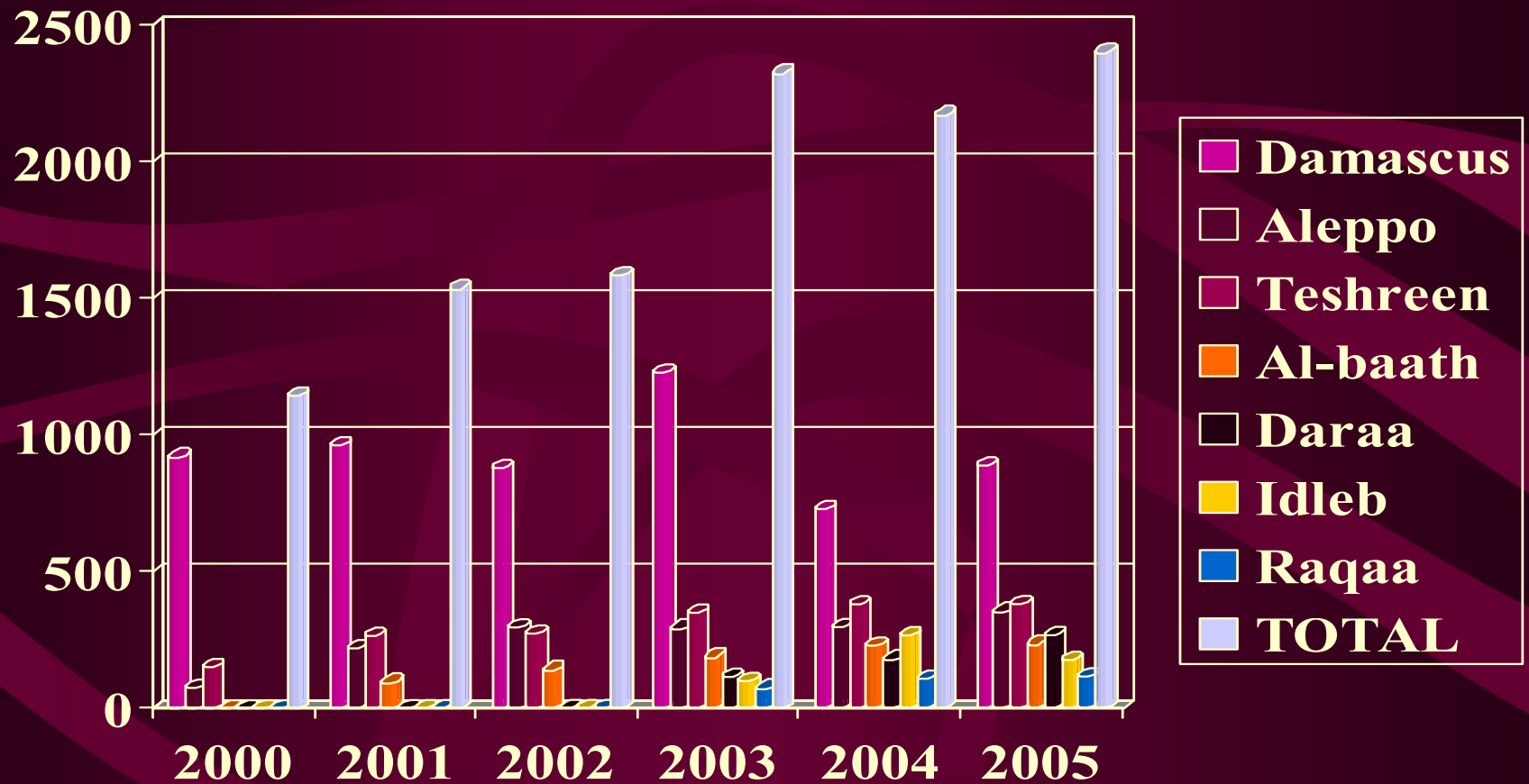# Enrolment in Faculty of IT

HRD in ICT Sector…
Computer Intermediate Institutes

- 2-year program
- 3 disciplines:
  - IT
  - E-Business
  - Computer engineering
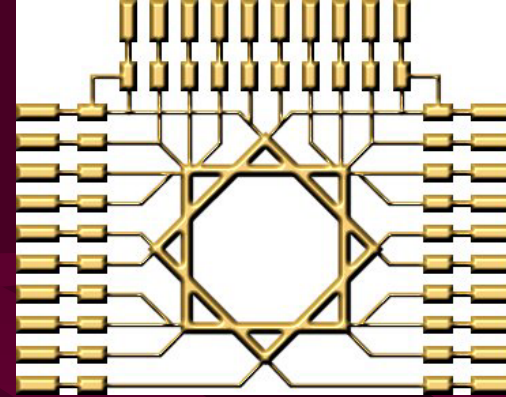
HRD in ICT Sector…
Enrolment in Computer Institutes

HRD in ICT sector…
Higher Institute for Applied Sciences and Technology

- established in 1983 in Damascus
- Academic programs
  - Software engineering
  - Communication engineering
  - Electronic Systems Engineering
  - Mechanical Engineering
- Students:
  - 213 students,
- Research & development projects for local market especially in IT

HRD in ICT Sector…
Higher Studies and Research

- Few Master and Phd Studies
  - In Faculties of Electrical and Mechanical Engineering

	2000	2005
Academic Staff	4833	5311
Students in Higher studies	8195	8765

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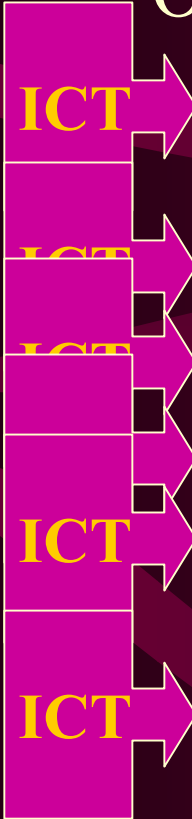- ICT in Higher Education Strategy
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شريحة الملخص

- ICT in Higher Education Strategy

ICT in Higher Education Strategy

Reference: 10th national plan for Higher Education

Objectives

ICT →

1. Develop high-quality study plan, curricula , and academic activities

ICT →

2. Enhance Institutional and Individual capacities

ICT →

3. Provide the enabling structure for courses and research

4. Promote Scientific research environment

ICT →

5. Encourage cooperation between local universities and international organizations

ICT →

6. Modernize Intermediate Institutes

ICT in Higher Education Strategy

Policies

1. Develop new learning styles (i.e. Virtual learning)
2. Annually, increase the number of IT students by 9%, and Engineering students by 25%
3. Modernize IT courses in universities
4. Re-structure IT specializations in universities
5. Periodic review of courses and curricula
6. Achieve the professor/student rate 1:20 in Eng. faculties

ICT in Higher Education Strategy

Policies

7. Develop IT equipment and connect labs with universal databases
8. Use of ICT techniques in learning , administrative support.
9. Develop web sites to provide students with the necessary information
10. Re-habilitation of researchers in ICT
11. Develop new research programs according to emerging technologies
12. Participation in International activities
13. Open new disciplines for intermediate institutes

ICT in Higher Education Strategy

- *First-priority programs*
  - Re-structure HE
  - Enhance teaching and research capacity
  - National capacity building
  - Support the scientific research
  - Encourage SVU programs
  - Development of S&T policy

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Conclusions & Perspectives

- Current difficulties:
    - Huge number of students
    - Low Enrolment rate (relatively)
    - Insufficient infrastructure
    - Information, textbooks,…unavailable
    - Traditional teaching styles
    - Incompatibility with market needs

Conclusions & Perspectives…

- ICT strategy:
  - Capacity building in Universities
    - Granted Assistant Program
  - Capacity building for Public Sector
    - Program of Scientific scholarship
  - National capacity building
    - Faculties if IT Engineering
    - Indian-Syrian University (Aleppo)
    - Private universities
    - IT Education in all faculties
    - ICT (IT for all) students (2006/2007)
    - SICTI: Syrian ICT Incubator
  - Enabling Infrastructure
    - Extending SHERN capacity
    - EUMEDCONNECT (GEANT)
    - EUMEDGRID
  - New Styles in learning
    - SVU support
    - MEDNET'U (online courses)
    - Avicenna Project: online interactive modules
  - Administrative reform
    - Re-structuring HE & Computerization of Universities
  - Curricula reform
    - Update curricula in ICT academic establishments
    - meet the market needs

Thank you !

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