



European Commission
TEMPUS

An Industry Oriented MSc. Program in Telecommunications Engineering- Towards an EU Approach

(A Joint Project Funded by Tempus)

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Outline

- The Telecomm Engineering Dept. at YU
- Tempus IV
- The Project
 - Partners
 - Project Team
 - Objectives
 - Activities
 - Budget
 - Role of Partners

The Telecommunications Engineering Dept. Yarmouk University

- ❑ Established in 1989
- ❑ Part of Hijjawi Faculty for Engineering Technology
- ❑ Offers B.S. and M.S. degrees
- ❑ 17 highly qualified faculty members
- ❑ 7 labs
- ❑ Students from Jordan and neighboring countries.
- ❑ Annual intake is around 150 students
- ❑ 850 BSc. Students and 40 MSc. students

Offered Programs

□ BSc. Program

- 167 credit hours
- skills in the fundamental concepts of electrical engineering, mathematics, physical sciences, in addition to analog and digital communications.
- Specialized and advanced topics in telecommunications are also offered such as Wireless and Mobile Communications, Satellite Communications, Optical Communications, etc..
- Practical experiences through field training, graduation projects and lab work.

Offered Programs

□ **MSc. Program– Thesis Option**

- Started 2005
- 24 credit hours of course work
- 9 credit hours of thesis work
- More than 20 graduates since 2005
- Thesis resulted in more than 10 publications

□ **MSc. Program– Non-Thesis Option**

- Started 2010 in cooperation with PFC (Jordan Armed Forces)
- 27 credit hours of course work
- 6 credit hours of graduation project

Capabilities

- 18 academic staff members
 - Mostly US graduates (90%)
 - Relatively Young (Average age 35 years)
 - Good publication record (About 25 papers in 2009-2010)
- Research labs will be introduced through Tempus grant
- About 40 MSc. working on theses and graduation projects
 - 32 students - Thesis option
 - 8 students –Non-thesis option
- Good cooperation with Jordan Military Forces through PFC

The Future

- A one Million Euro grant from Tempus
- Includes a number of activities:
 - Reform of our graduate study programs
 - Wireless Communications
 - Introduction of two new tracks
 - Telecommunications Network Management
 - Wireless Networking
 - Lab Equipment (220,000 EUR)
 - Professional development of academic staff at EU
 - 160 Mobilities from and to EU
 - Travel grants for our MSc. Students
 - 30 travel grants for 3 months in EU

The Project

Project Title	An Industry Oriented MSc. Program in Telecommunications Engineering- Towards an EU Approach
Project Acronym	MTE-EUA
Funding Agency	The Education, Audiovisual and Culture Executive Agency (EACEA) - European Union
Programme	TEMPUS
Sub-programme	Joint Projects
Programme guide /Call for proposals	EACEA No. 28/09
Action	Curricular Reform

TEMPUS

- ❑ **Trans-European Mobility Scheme for University Studies (TEMPUS)**
- ❑ A European Union's programme which supports **the modernization of higher education** in the Partner Countries of Eastern Europe, Central Asia, the Western Balkans and the Mediterranean region, mainly through university cooperation projects
- ❑ The Education, Audiovisual and Culture Executive Agency (**EACEA**) is responsible for the management of Tempus

Tempus Themes

❑ **Curricular Reform**

- ❑ Adapt, modernise and restructure existing curricula with a focus on content, structure, teaching methods and the use of new teaching materials

❑ **Governance Reform**

- ❑ University management and student services

❑ **Higher Education and Society**

- ❑ Training and development of partnerships with enterprises

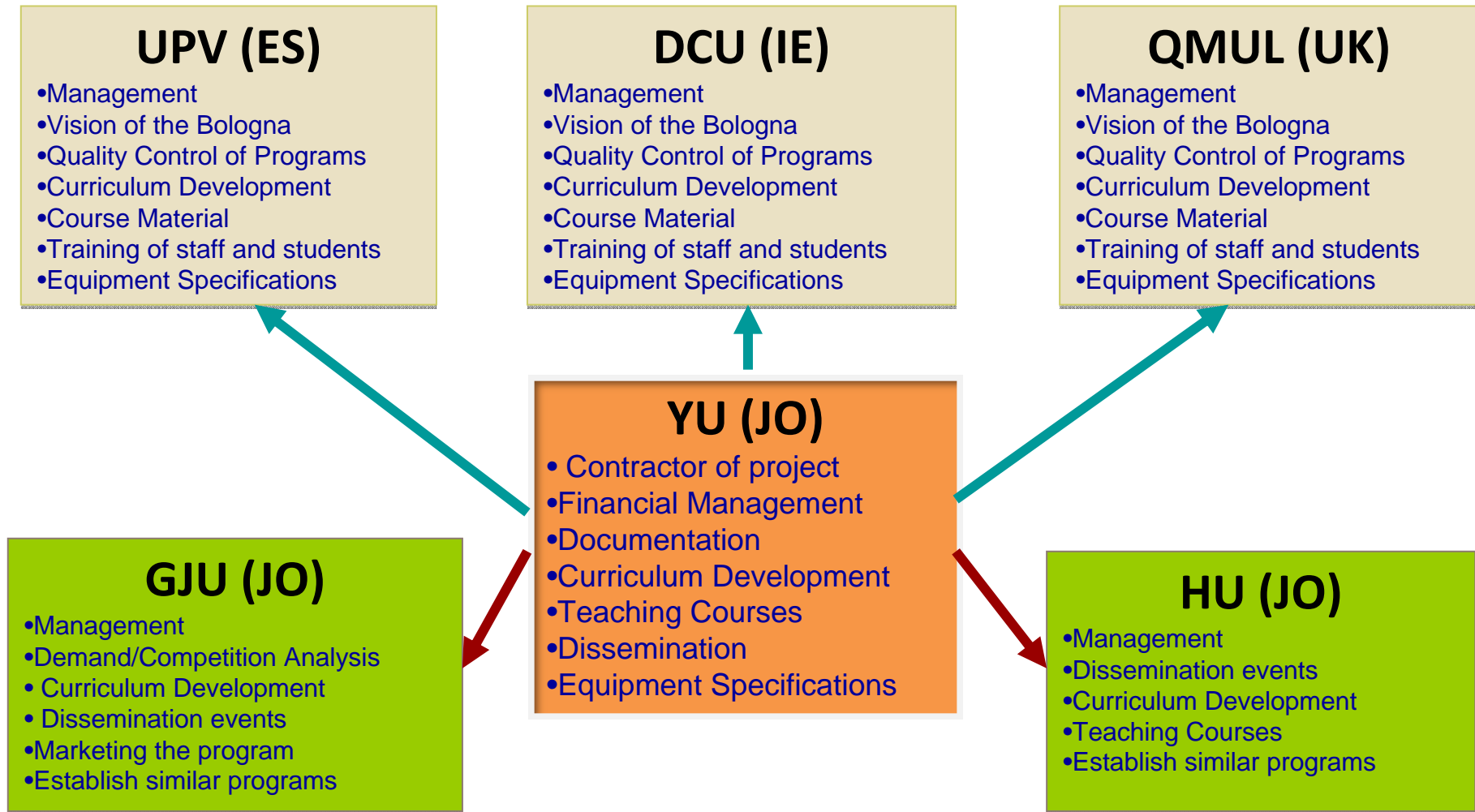
Third Call-Tempus IV

- ❑ Published: July 28, 2010
- ❑ 64 proposals recommended for funding
- ❑ 18 proposals have partner countries as coordinator (28%)
- ❑ 50 Joint Projects
- ❑ 14 Structural measures (22%)
- ❑ 31 proposals are multi-country (48%)

Project Main Objective

- ❑ To modernize the existing Masters program in wireless communications
- ❑ To introduce new study tracks
- ❑ To provide strong linkages to the needs of local and regional industries
- ❑ To provide international recognition for our programs in the area of wireless communications.

Project Partners



Project Objectives

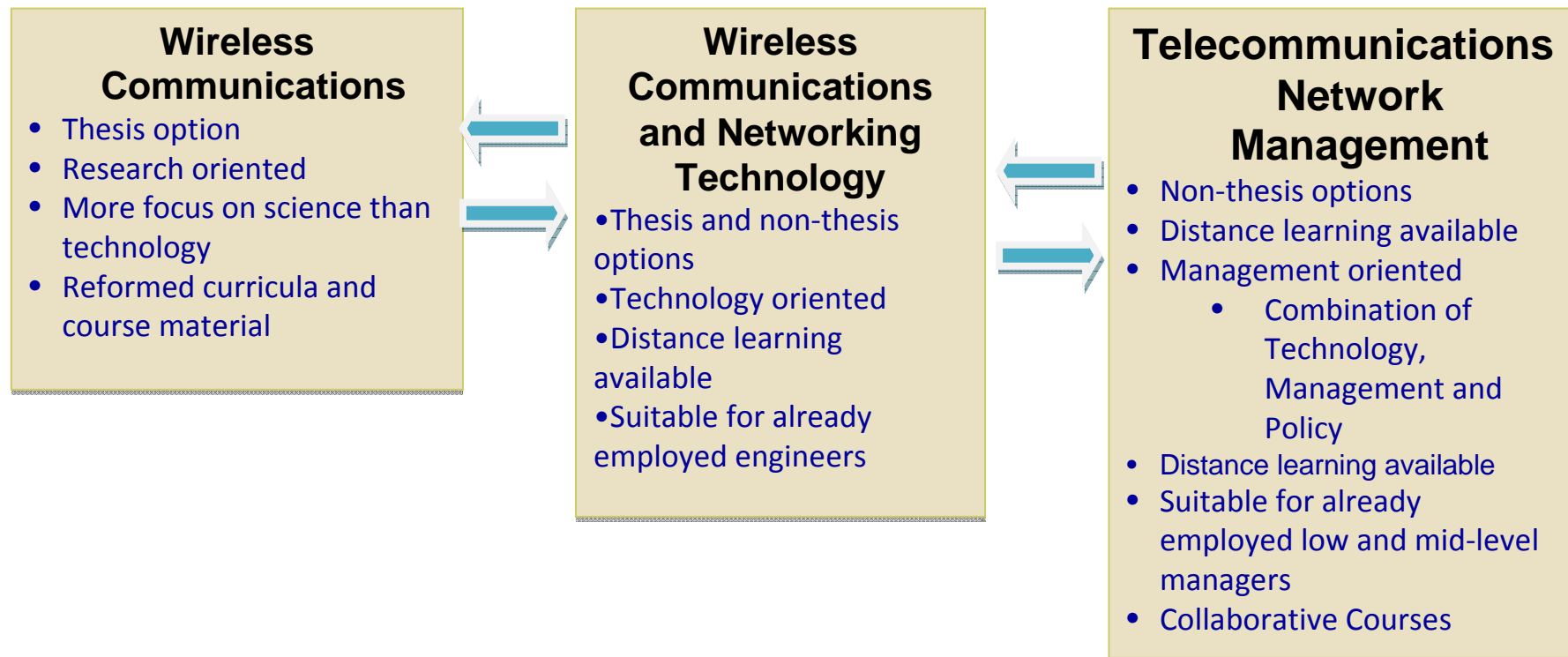
- ❑ To reform and modernize the existing Master program in Wireless Telecommunications at Yarmouk University.
- ❑ To enhance student learning outcomes and skills to meet local market needs.
- ❑ To converge our study programs with the EU educational system
- ❑ To help local project partners establish and implement their MSc. programs in telecommunications engineering at their institutions.
- ❑ To help the EU partners to learn more about the needs, capacities and educational approaches of the partner institutions in Jordan.

Pedagogical Approach

- ❑ Shift from an input driven system defined by years of study, content catalogues and contact hours, to a system primarily based on learning outcomes.
- ❑ The implementation of a quality control system which proves that intended learning outcomes have been achieved by the provided curricula and teaching /learning approaches.

New Program Tracks

- Three main tracks will be introduced:



Telecommunications Network Management

- ❑ Offers the graduated students with a combination of technology, policy and management knowledge.
- ❑ Useful for those who are already employed and would like to enhance their management skills
- ❑ Help reduce the unemployment rates by producing qualified /experienced engineering professionals.
 - Could contribute to reducing the training cycles of staff working at Telecom companies or governmental agencies (MICT, TRC, Military, etc.)
- ❑ Entrants to the program
 - At least a bachelor's degree in Telecommunications engineering Electrical/Electronics Engineering or IT Engineering.

Similar Programs

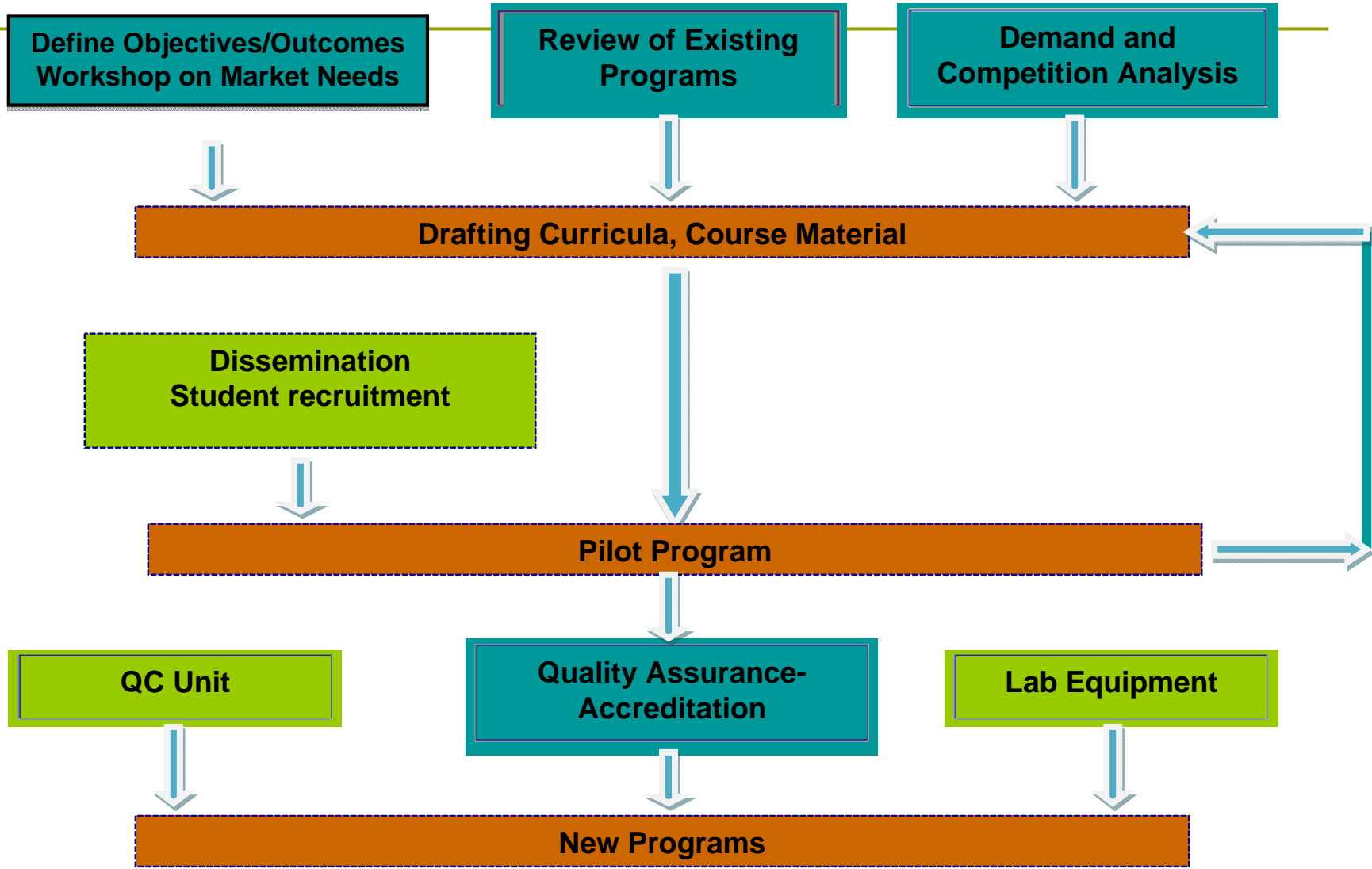
- ❑ Syracuse University—USA
- ❑ Queen Mary University of London- UK
- ❑ Rochester Institute of Technology-USA
- ❑ Buckinghamshire University -UK
- ❑ Bucks New University -UK
- ❑ Champlain College -UK
- ❑ University of Maryland-USA

TNM - Topics

- ❑ **Fundamentals of Management**
- ❑ **Strategic Management within Telecommunications.**
- ❑ **Economics for Business**
- ❑ **Professional Applications**
- ❑ **Marketing**
- ❑ **Enterprise Management**
- ❑ **Telecommunications Project Management**
- ❑ **Telecommunication Systems Management**
- ❑ **Telecommunication Policy and Regulation**
- ❑ **National and International Telecommunications Policies**

- ❑ **Software Tools for Telecom. Engineers**
- ❑ **Telecommunications and Information Network Technology**
- ❑ **Networking Technologies**
- ❑ **Advanced Telecommunications and Network Management**
- ❑ **Data Administration Concepts and Database Management**
- ❑ **Research Techniques for Telecommunications Management**

The Process



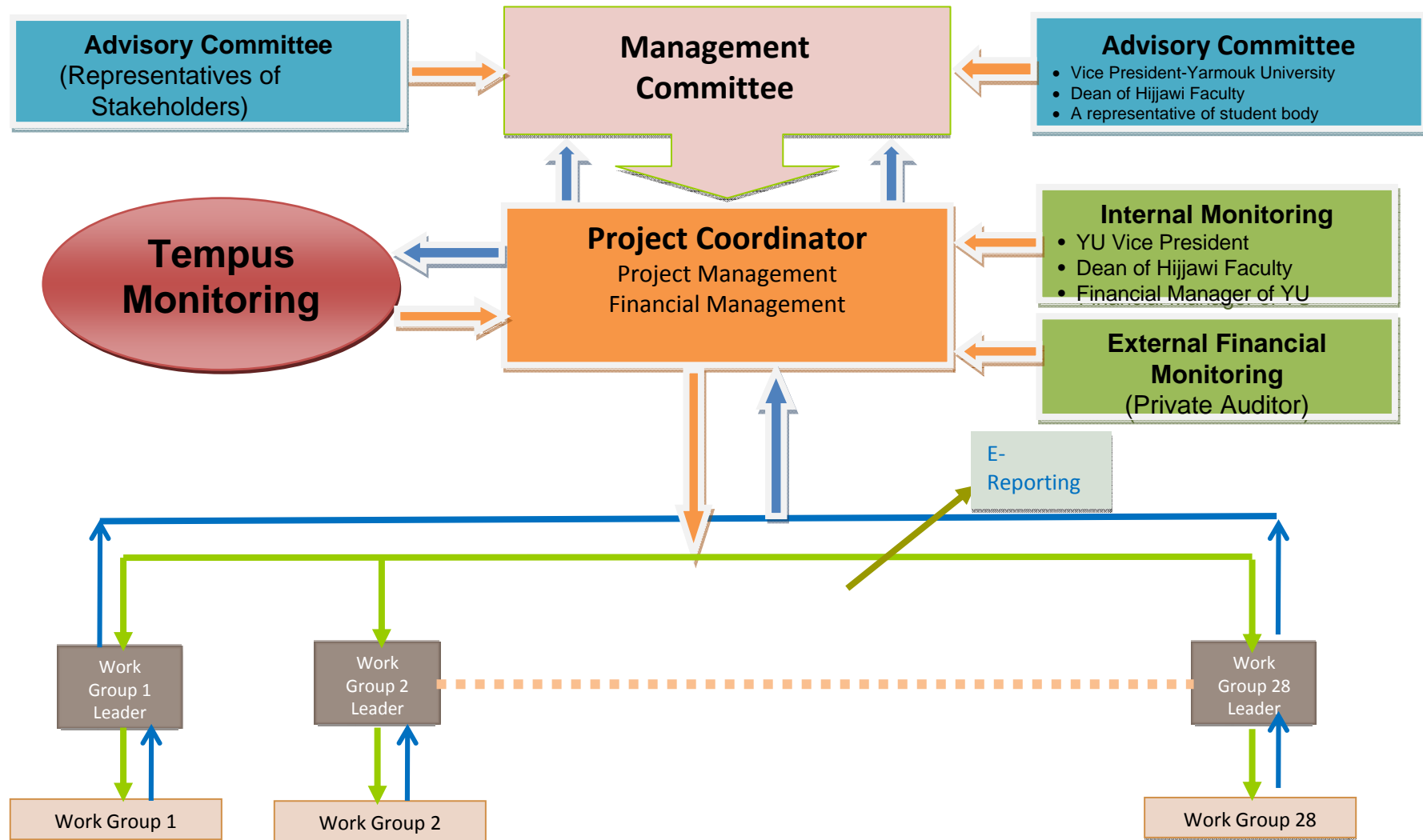
Sustainability

- A network of collaboration with local industries
- A QC unit will be established at YU
- Training opportunities for our academic staff.

Role of Industry

- ❑ Be part of the advisory committee to the project management committee.
- ❑ Be part of the curriculum revision process
- ❑ Be part of the curriculum development process
- ❑ Participate in surveys that measure the local industrial needs relating to the proposed program.
- ❑ Participate in dissemination events such as seminars, workshops, etc.

Management of the Project



WP.1: Review of Existing Curriculum

Del. No. 1: Review of Existing Curriculum

- Title: Review of Existing Curriculum
- Type or nature of deliverable: Report
- Delivery Date: 01/04/2011
- Dissemination level: International level
- Target group (s):
 - Teachers
 - Administrative and other non-teaching staff
 - Other: Representatives of local telecommunication companies

Description

- Review on the problems associated with the existing curriculum and existing program process includes statistical data on
 - the benefits of the program to target audience
 - employability of graduates
 - relevance of course material to the needs of industries
 - quality of graduates and teaching methodologies, etc.
- The review process will be conducted by academic staff at YU and EU and will result in a report which will be used at the curriculum development process



Thank You

TNM - Topics

□ **Economics for Business**

- explains how firms, consumers and government interact in markets and how business decision-making is shaped by internal factors such as costs and by external market conditions.

□ **Professional Applications**

- Public speaking skills
- Written communication
- Learning how to learn
- Personal and Professional Development
- Presentation Skills

□ **Marketing**

- the concepts of marketing and specific decision-making activities performed by marketing managers in organizational settings.

TNM - Topics

□ **Enterprise Management**

- management concepts in a Telecom. engineering/technology context.
- The Business Environment, Financial Management, Risk Management, Marketing, Operations Management, International Business, Corporate Responsibility, Human Resource Management and Business Strategy.

□ **Software Tools for Telecom. Engineers**

- software tools which students will be expected to use in development and design of engineering systems.

□ **Telecommunication Systems Management**

- issues in the design, implementation and deployment of real-world telecom. technology