Kwame Nkrumah University of Science & Technology
Engineering Week
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Vice President & Chair :
World Federation of Engineering Organisations - Engineering Capacity Building Committee

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“Educating the *next Generation of Engineers for the Global Workplace*"

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What we would prefer ???

- **Our own Universities, Private or Public !**
- **Determining our own curricula !**
- **Our own graduates, who remain in our Countries and contribute to upkeep and development !**

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What is our Modern World like ?

- **Interconnected, through Facebook, UTube etc.**
- **Information flow is real time;**
- **Government investment in Engineering projects is cyclic;**
- **Proliferation of multinational companies, Consultants, Manufacturers & Contractors;**
- **Skilled people that have families to feed become even more mobile;**
- **The Global Village is a reality;**

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Global Industry Player Initiative

- **2006 study commissioned by German Company, Continental AG; (Global Engineering Excellence Initiative)**
- **Included a study of 8 International Universities known for their engineering programs ;**
- **Objective to evaluate global engineering, engineering educations needs and challenges and identify critical factors necessary for educating tomorrows workforce;**

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Findings of the Study

- *Global competence needs to become a key qualification for engineering graduates.* Global preparation must move beyond "add-on" programs; knowledge of the fundamentals and dynamics of globalization as well as opportunities to become immersed in study, work, or research abroad are key elements that should be integrated into engineering programs.

- *Transnational mobility for engineering students, researchers, and professionals needs to become a priority*. Barriers to studying, working, conducting research, and attending international meetings need to be removed and incentives expanded.

- *Global engineering excellence depends critically on a mutual commitment to partnerships, especially those that link engineering education to professional practice.* Industry must take the lead in developing opportunities for students to practice engineering in a global context, whether through on-site employment, virtual involvement in global engineering projects, or other experiential opportunities.

- *There is an urgent need for research on engineering in a global context.* The phenomenon of global engineering is still emerging. There is a need for a theoretical foundation on learning behaviors and models as well as on organizational processes and management methods focused on instilling global competence in engineers.

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Global Industry Player Viewpoint

- **Engineers play a critical role in fueling the global economy. Industry needs highly educated, enterpreneurial engineers to ensure innovation and technological leadership.**
- **Industry needs engineers who strive for the best in a high – performance global market.**
- **Industry needs a new breed of engineer :**
  - **technically broad,**
  - **commercially savvy and**
  - **globally adept**

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Foundations of Transnational Mobility

1. Attributes for engineering graduates

2. Attributes that define engineers

3. Global accreditation of engineering courses

4. Global assessment for licensing of engineers, and

5. On-going training.

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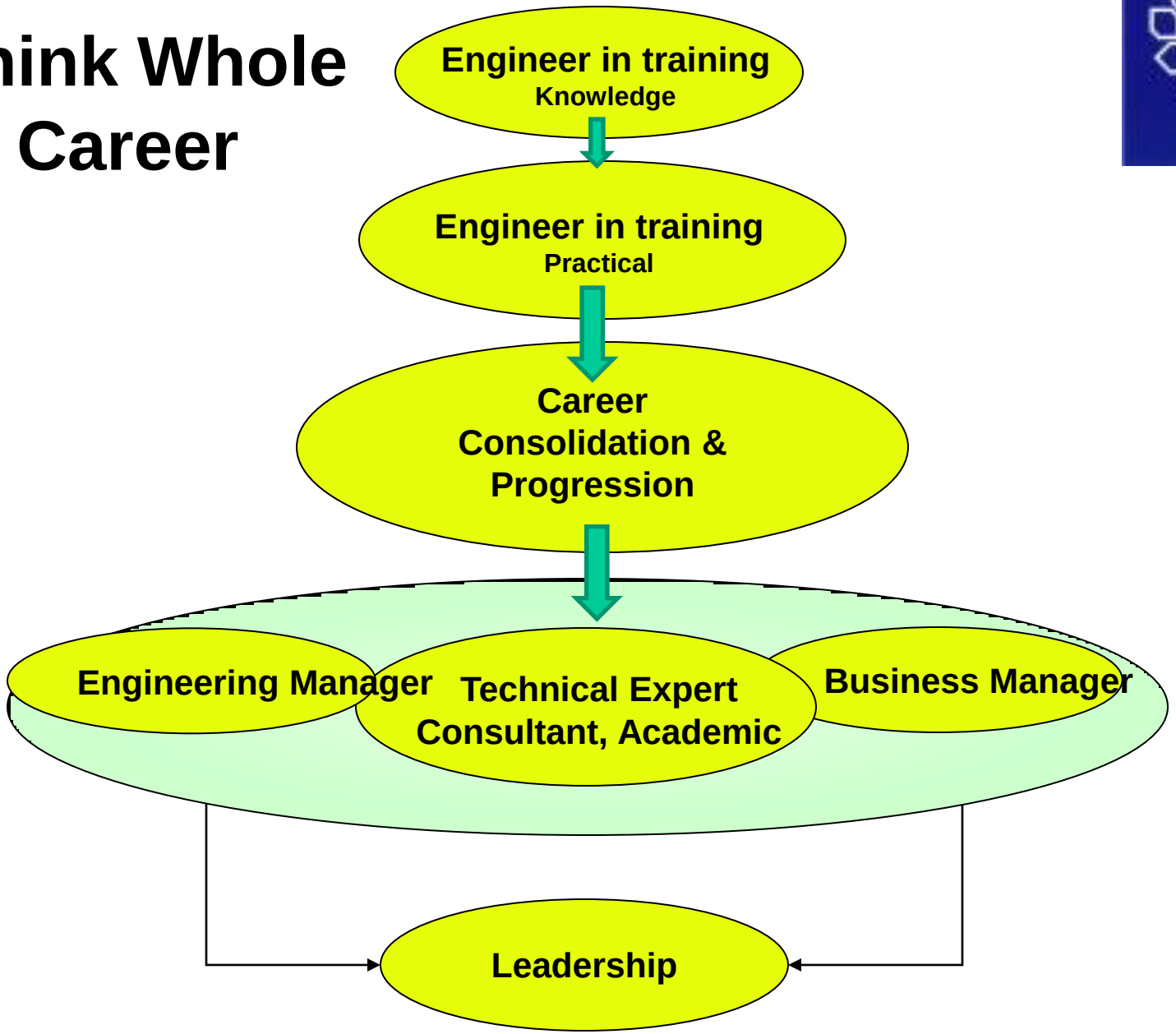
Think Whole of Career



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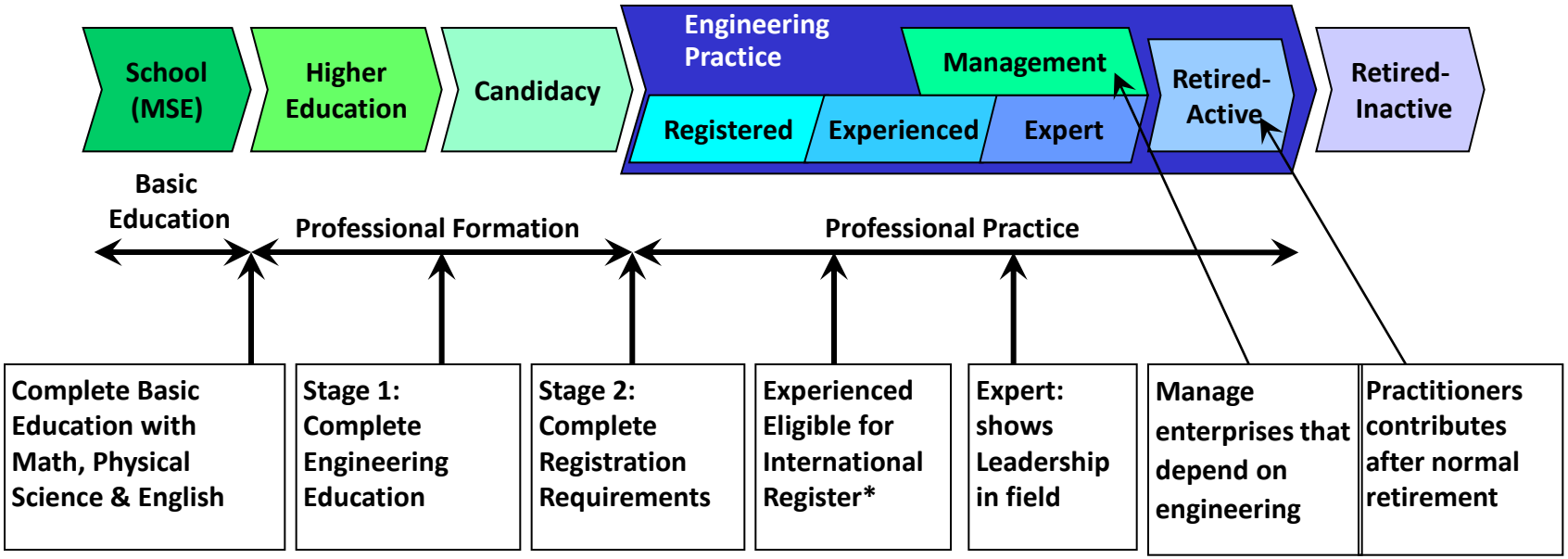
Engineering Practitioner Lifecycle



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Transnational Education Recognition Programmes

- Engineering Education Global Accreditation Programmes;
- International Engineering Alliance
  - Washington Accord – Engineers
  - Dublin Accord – Technologists
  - Sydney Accord – Technicians
  - European Network for Accreditation of Engineering Education (ENAEE)
- Mutual recognition of engineering degrees through establishing and maintaining a common baseline;

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Washington Accord : Mutual Recognition

Agreement states:

- **Accreditation criteria, policies and procedures of the signatories have been verified comparable;**
- **Accreditation decisions made by one signatory are acceptable to the other signatories**
- **Recognition applies only to accreditations conducted within the signatory's national or territorial boundaries, except:**
    - **Offshore programmes offered by university with programs accredited in home territory**
    - **A designated signatory accredits in a developing countries where the is no capacity to operate an accrediting body**

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Transnational Professional Recognition

- Ability to do engineering work in different Countries can be limited by an ability to register with the local professional bodies;
- Initial requirement for registration is accredited Engineering Degree, or Degree that is substantially equivalent to the locally recognised qualification;
- Engineers may be prohibited from practicing in certain Countries if not registered with the local professional bodies;

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Closing Remarks

- **The concept of a Global Engineer is relatively new;**
- **Further research may be required on what exactly the attributes are of a Global Engineer;**
- **Accreditation of Engineering Education globally is a good start;**
- **The Future Engineer is no longer what He/She used to be;**
- **Our challenge is to embrace the future and get on with the job of developing the Global Engineer;**

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Thank You !!!

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