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Schools of Science & Technology

School Research Conference

Investigating The Factors Affecting The Development Of A Sustainable National Accreditation Body For Engineering And Technology Laboratories In Libya

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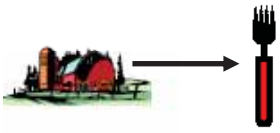
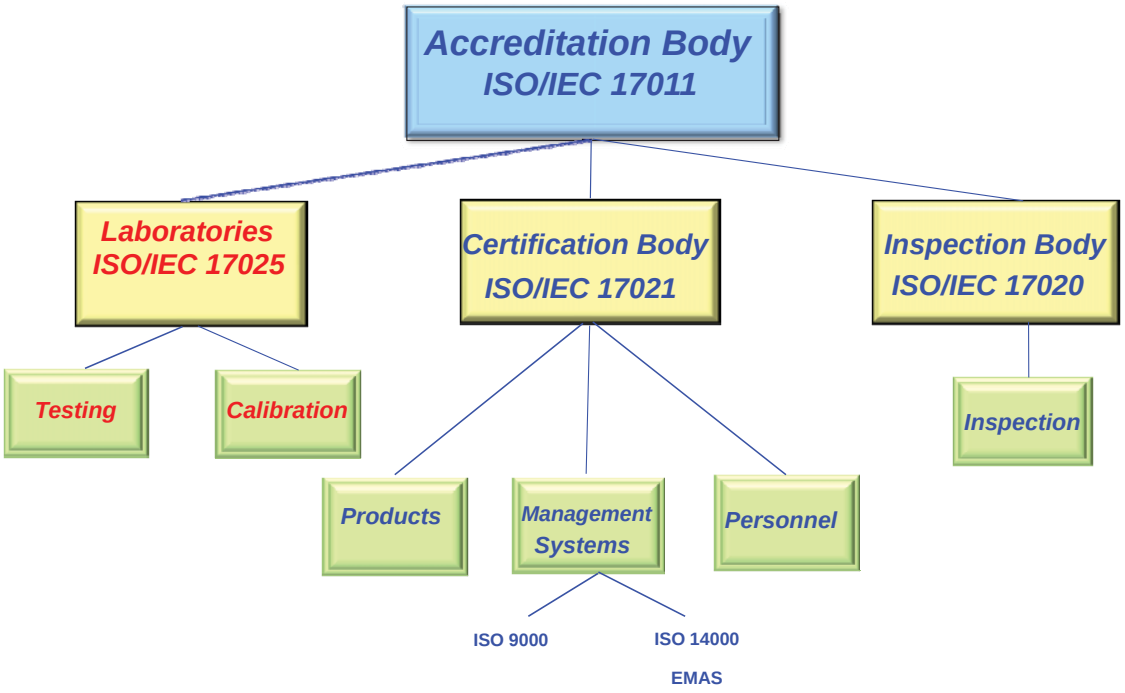
The international providers of accreditation.

Accreditation bodies operating in accordance with ISO/IEC 17011:2004 do not have to offer accreditation to all types of CABs. (ISO/IEC 17011:2004)

Why National Accreditation Body? and why Laboratory accreditation?



	STD. #	Standardisation
1.	ISO/IEC 17011:2004	General requirements for accreditation bodies accrediting conformity assessment bodies
2.	ISO/IEC 17025:2005	General requirements for the competence of testing and calibration laboratories
3.	ISO 15189:2007	Accreditation of Medical Laboratories
4.	ISO/IEC 17020:1998	Inspection Bodies
5.	ISO/IEC 17021:2006	Requirements for bodies providing audit and certification of management systems
6.	ISO/IEC 17024:2003	certification program for individual persons
7.	ISO/IEC Guide 65:1996	bodies operating product certification systems
8.	ISO/IEC 17040:2005	General requirements for peer assessment of conformity assessment bodies and accreditation bodies

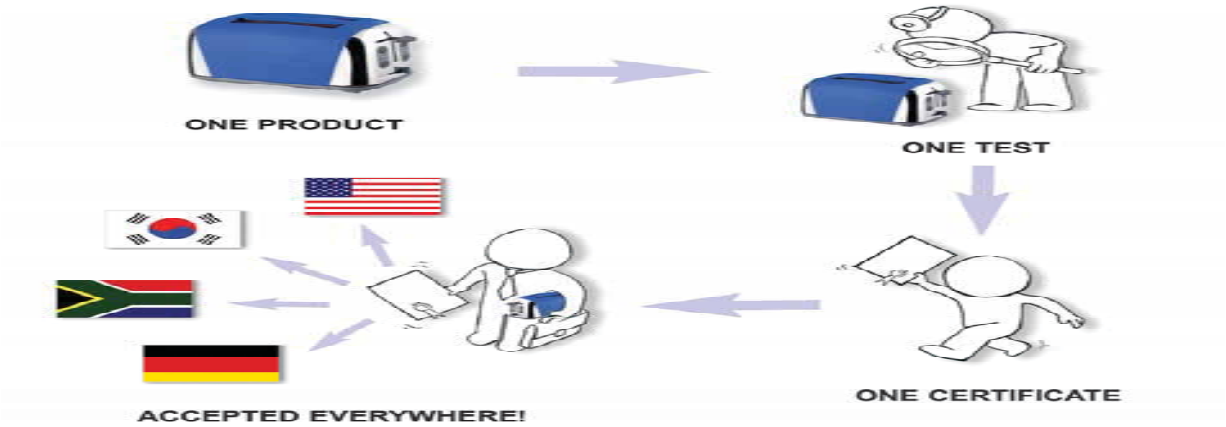


Accreditation in Engineering

- Accreditation is the procedure by which the competence of a calibration or test laboratory to perform a specified range of tests or measurements is assured against national or international standards **(**Hibbert, 2007).
- Through accreditation, an approved external testing institution certifies that a laboratory possesses the ability to carry out certain analysis (Funk, et al, 2007).
- An accreditation body is established primarily to provide its services to its local market and to operate accreditation as a non profit distribution activity free from commercial motivation (Drnovsek, 2008**).**
- Bievre, (2008) believes that an accreditation wave is going over the world: get accreditation or perish.
- Most countries have a single national accreditation body responsible for all areas of accreditation (Guasch, 2007).

How it Works?.

- Governments and industries depending on the results of a test laboratory to direct regulatory and corporate decisions.
- Therefore the data must be accurate and reliable.
- Laboratory testing and calibration, is essential in providing accurate outputs (i.e. measurements and results) to fit their intended use, giving that very important decisions are based on them (Squirrell, 2008).



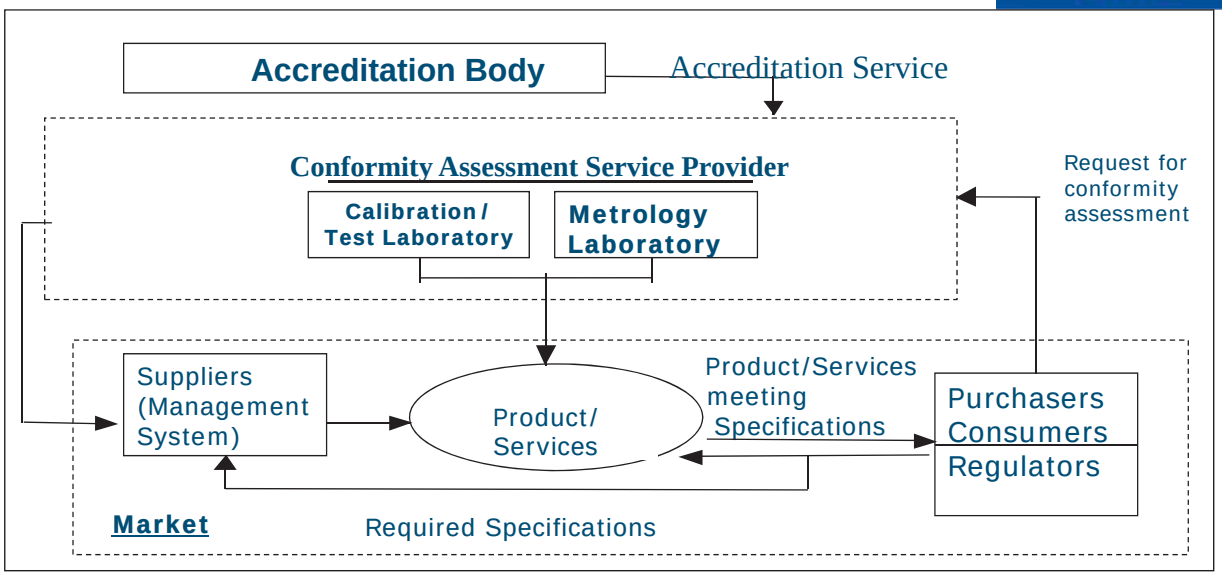
Source: IEC, 2008

"Accreditation Independency"

- Accreditation programmes in both Brazil and Zambia have had significant problems due to overdependence on government involvement (**Bukonda et al. 2002**).
- In both instances accreditation programmes were developed at the request of government bodies, with international assistance.
- It had not achieved independent status before changes in government decreased the support provided to the organisations.
- The continuation of those programmes is in some doubt as a result.

Accreditation" differs from "certification" by adding the concept of a third party (Accreditation Body).

Accreditation by UKAS means that evaluators i.e. testing and calibration laboratories, certification and inspection bodies have been assessed against internationally recognised standards to demonstrate their competence, impartiality and performance capability.



Source: (Bélisle, 2004)

The reason for doing this research

- There is no previous research done to see the factors that affecting on the development of a national accreditation body in the developing countries.
- Absence of an accreditation body in Libya. As a result both the BSI and the TUV doing the accreditation in Libya especially to the chemical and petroleum laboratories that required by international customers.
- The opening of Libyan doors to international markets and the need to widen its markets so the Libyan products can reach international markets and eliminate unnecessary barriers or multiple tests.
- An example, Chinese products which overwhelming international markets (due to the role of the Chinese accreditation system).
- The importance of the supposed Libyan accreditation body and services that may offer to the African countries (possible location + cheaper prices compared with the European prices).
- The importance of accreditation to support the development of the Libyan economy after the lift of the UN sanctions.
- Examples of the accreditations bodies in Europe and Asia should be reviewed to know how the system is working in other countries and what are their deficiencies?

Proposal

- To date there is not any empirical research done in the developing countries to investigate the factors or forces that drive or retrain the development of a national accreditation body.
- There is a gap which currently exists between conformity assessment provider's current status ISO / IEC 17025 (laboratories testing and calibration) and ISO / IEC 17011 (accreditation body) requirements in Libya.
- The purpose of this research is to address the issue of accreditation for Libyan conformity assessment providers and to identify and investigate the factors that affect the establishment of National accreditation Body for engineering sector in Libya.
- Therefore an empirical research is required to identify factors that affect the development of National Accreditation Body in Libya in the context of a country that has just opened its economy to foreign investment after enduring tough international sanctions over an extended period of time.

Methodology

The methodology will include:

- A critical review of the concept of accreditation. A literature review will be conducted to provide an understanding of the complex meaning and application of Accreditation in Libya.
- A case study approach, which will attempt to offer a contextual understanding of accreditation, by comparing and contrasting two different case studies in Libya to identify the factors that affect the development of a national accreditation body.
- By reviewing methodological research approaches, a frame work for the implementation of the accreditation in Libya (who is needs it (bottom) and who would regulate and administrate it (top) is to be developed.
- Building a framework using PESTEL analysis, theory of constraint (TOC), critical success factors (CSFs) Risk analysis (FMECA -problems how companies fail, backup and support) Key process indicator (KPIs) quality function deployment (QFD) customer requirements and other appropriate tools.
- This will then be reviewed and validated using both quantitative and qualitative research methods and appropriate techniques will be used.

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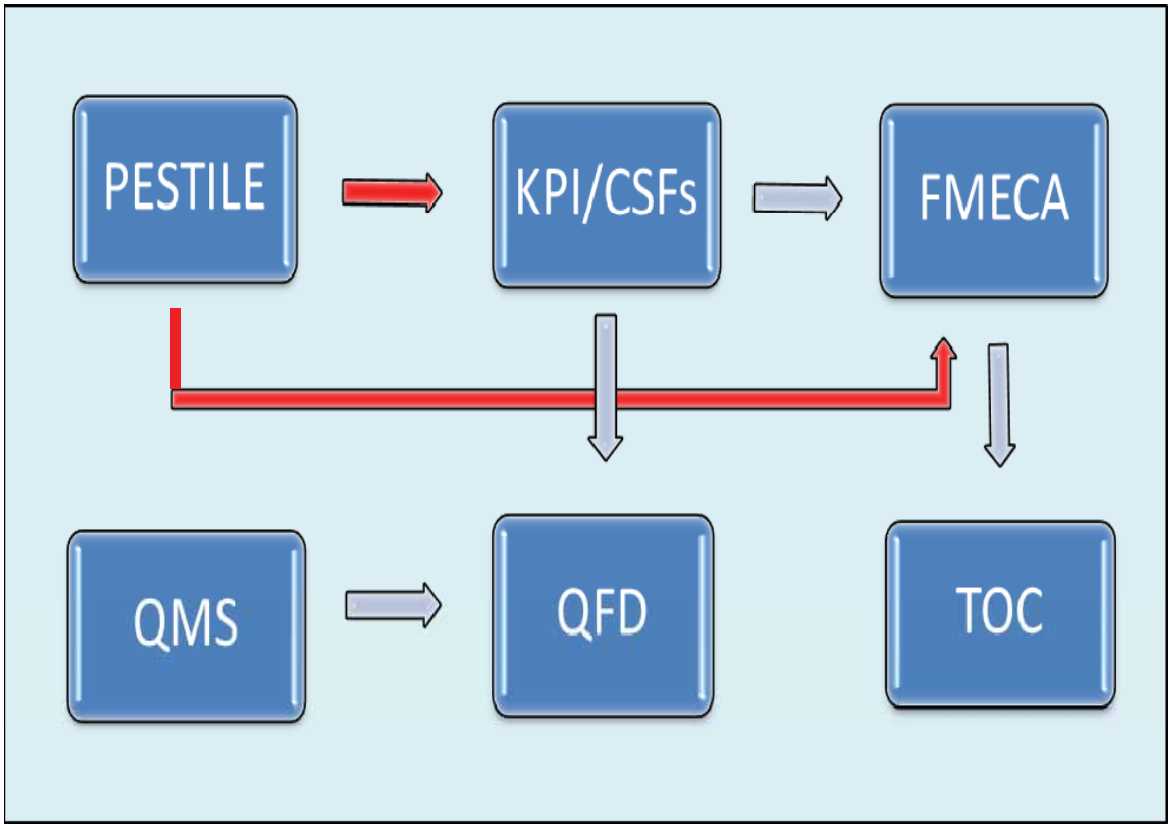

Source of data

The study will rely on the following sources:

- A review of relevant published and unpublished literature on quality and accreditation and the development of accreditation in the West and other countries.
- Both qualitative and quantitative research methods will be used to collect data from the following sources to obtain an understanding of the perceptions and decision-making processes of stakeholders in accreditation.
  - Industrial research centre
  - Libyan National Centre for Standardisation and Metrology
  - Libyan oil Institute
  - Ministry of finance and planning
- Data relating to the quality and accreditation bodies will be collected and analysed.
- A field study data collection will be organised to take place in Libya and a letters from both the University and the Libyan Embassy will be issued for the above mentioned organisations.

RESULTS/Future work

- There is no previous research done to see the factors that affecting on the development of a national accreditation body in the developing countries.
- Absence of an accreditation body in Libya. As a result both the BSI and the TUV (German accreditation) do the accreditation in Libya especially in the chemical and petroleum laboratories that is required by international customers.
- An example of what Chinese products which overwhelm international markets (due to the role of the Chinese accreditation system).
- Field study data collection will take place in two plans (A & B)
- A framework for accreditation body will be established.

Conclusion

To sum up the deliverable of this research will be:

- A framework for the establishment of a national accreditation body for engineering and technology sector.
- It not just for Libya but it can be implemented in all developing countries especially the Arab and African countries which almost have the same characteristics (economy, political, environment, technology and social).

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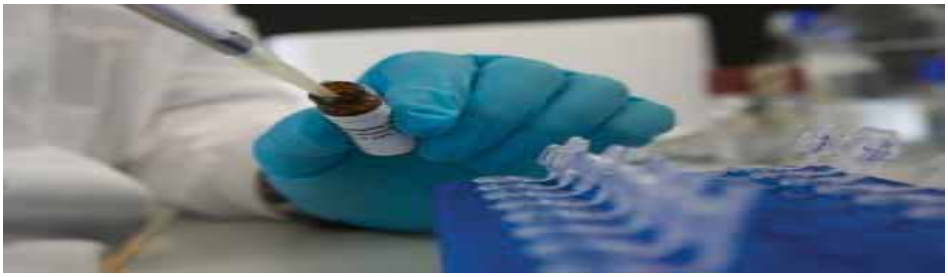

Thank you

Questions