
Clinical Engineering and Certification Developing Country Needs (only?) HTM and the way forward (as we see it)

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Credentials

Why was I asked to talk about CE and
Certification in Developing Countries?

...some food for thought...



The situation

- Technicians - what are called basic and medium-level polyvalent technicians
- Few Engineers - in some cases none - are in the public health system (private is slightly different)
- Little support of Health Managers / Governments
- Most of the technical personnel were introduced through externally-supported programmes
- To the best of my knowledge there are only two institutions preparing BMET-equivalents: in Diuorbell, Senegal & Pretoria, South Africa
- A lot of other issues relate to the absence of approved normative, or regulatory bodies, etc.



However...

- There is an increasing acceptance (at least in countries of my experience) of the need for institutionally-trained basic and medium-level medical equipment technicians
- Training should be done locally (brain drain!) with curricula approved by Min of Education & Health
- Technicians and Engineers (where available) are little by little entering in some way into the decision making process (as early fruits of advocacy and lobbying over many years)

Some Basic Needs...from the outside

- Organization/s – IFMBE-CED, AFTH, UCT or ??.. with partners, e.g. WHO - that facilitate/s definition of the basic body of knowledge for these “technical” human resources
- Specifying, based on the above, the structure of a typical set of courses that can be taught – whether face-to-face or via distance-learning + “training the trainers”
- 2-level registration/certification program that can be taken by newly trained technicians after a min. no. of years in practical service
- Advice on what to do with existing personnel
- Design of a minimum continuing certification programme supporting the maintenance of knowledge and skills
- These could serve as stimuli for working in the health system public sector especially if there are attached financial incentives / career paths (e.g. Mozambique)



Thank you, but...

... please no questions yet - Mladen is next



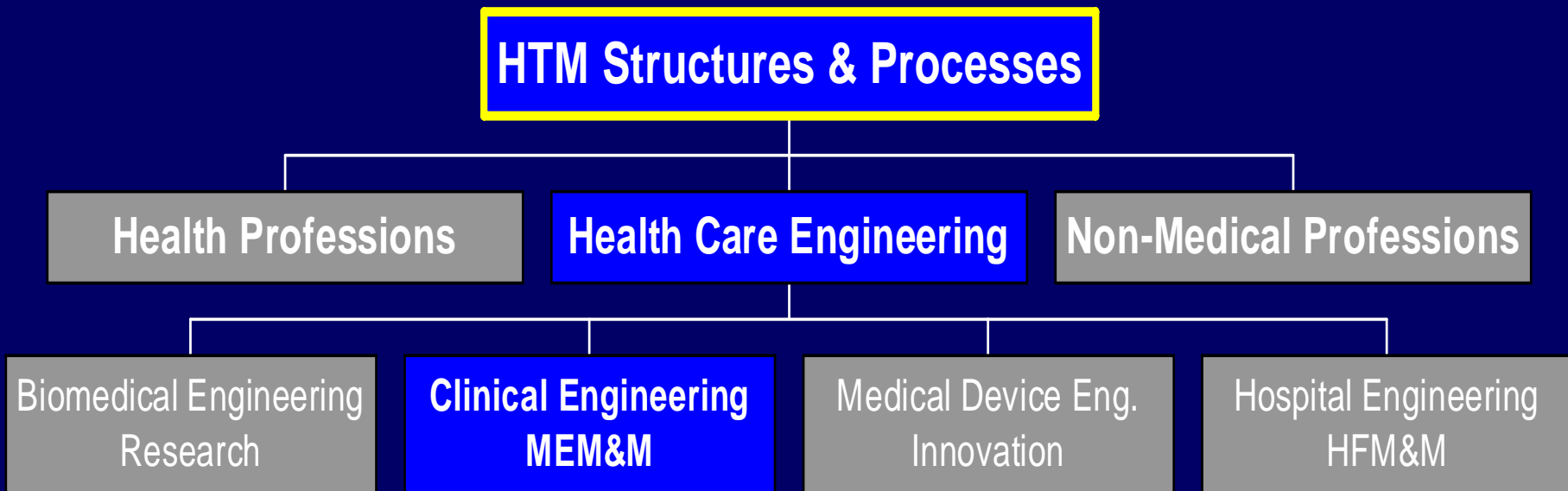
Healthcare Technology Management (HTM)

HTM defined as “...the goal of **optimising** the planning, assessment, acquisition and utilisation of technology to achieve maximum beneficial **impact** on health outcomes”

- multi-disciplinary
- highly politicised
- many role-players
- low skills base (in DCs)
- contextual constraints



HTM – Role of Healthcare Engineering



IFHE 2006 Conference (Cape Town) –
Healthcare Engineering in Developing Countries



HTM - Processes

- Planning
- [Health Technology Assessment]
- Adoption
- Utilisation: Asset Management
 Risk Management
 Maintenance

NB: Supporting Role of Clinical Engineering Services



HTM – Activities I

Planning	Situational Analysis (incl. needs assessment) Strategising & Priority Setting Technology Scanning / HTA Option Appraisal Programming & Budgeting
Adoption	Resource Mobilisation & Allocation Evaluation & Selection Life-cycle Costing Procurement (incl. Supply Chain Management) Installation & Commissioning

HTM – Activities II

Utilisation I Asset Management	Classification & Nomenclature Inventory / Asset Registers User-Support & Training Performance Monitoring & Benchmarking Replacement Planning, Decomm'g & Disposal
Utilisation II Risk Management	Risk Profiling & Assessment Post-Market Surveillance / Hazard Notification Inspection / Calibration / Safety Checks Adverse Event Monitoring & Analysis Quality Assurance
Utilisation III Maintenance	Scheduled (Preventive) Maintenance Corrective Maintenance (Repair) Spare Parts Management Personnel Support & Training Service History Documentation



HTM - at the intersection of 3 complex & dynamic fields



Healthcare

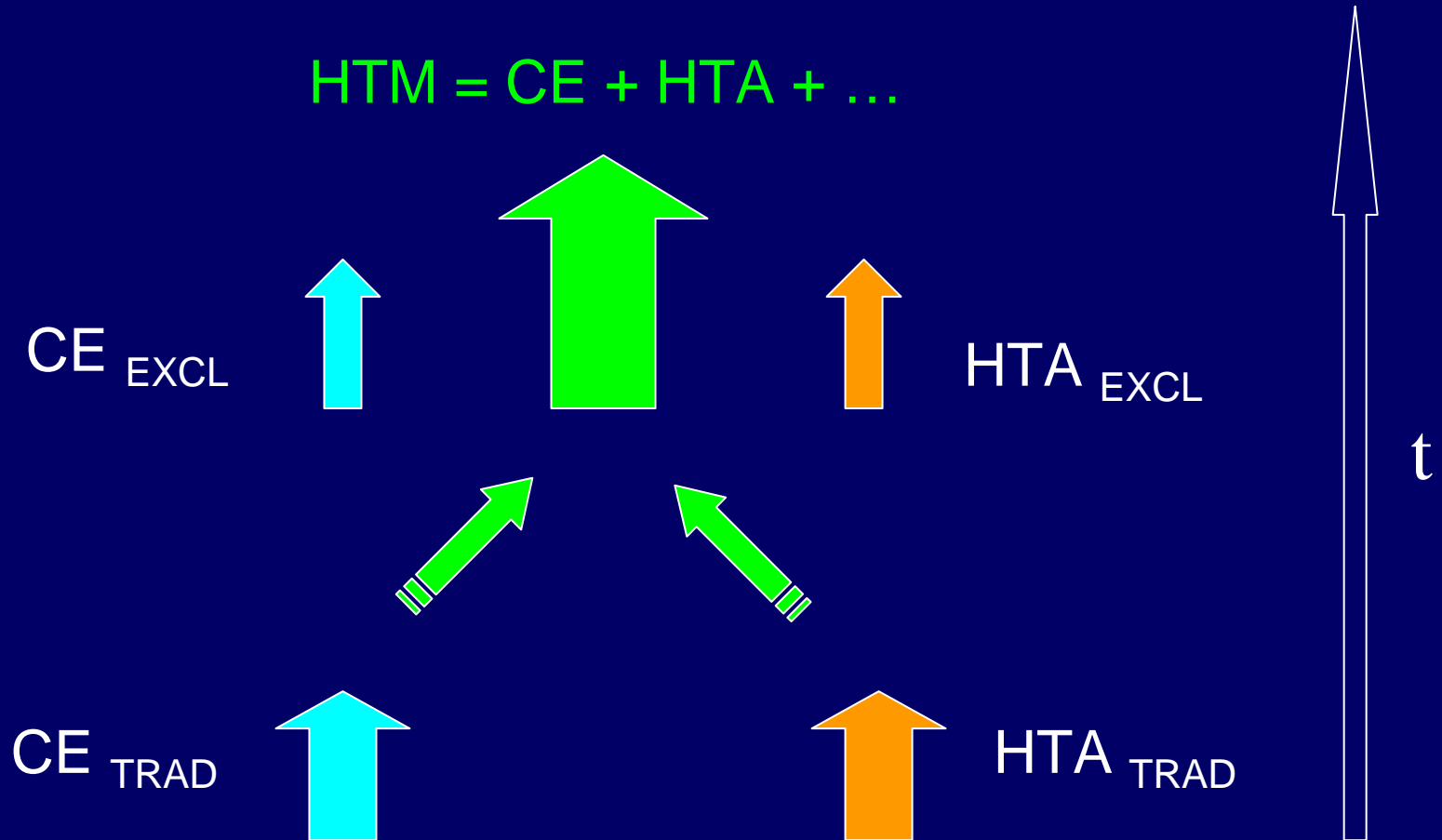


Technology



Management

Evolution of CE & HTA (into HTM)



HTA Evaluative Dimensions

SAFETY

- A **relative** concept with a number of dimensions
 - person/s involved; type of risk; likelihood of harm
- Critically dependent on the **environment** within which health technologies are used and supported and the **skills, knowledge and motivation** of health workers using and maintaining them

EFFICACY

- “*probability* of benefit to individuals in a defined population from health technology applied for a given medical problem under ideal conditions of use”

EFFECTIVENESS

- “efficacy under normal conditions of use”
 - what is “normal” in one environment may be very different from another, even in same region / country
 - role of **HTM/CE practitioners** in assessing and addressing conditions of use



Quality of Care

“ The degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current knowledge”.

Quality healthcare should be:

Safe
Timely

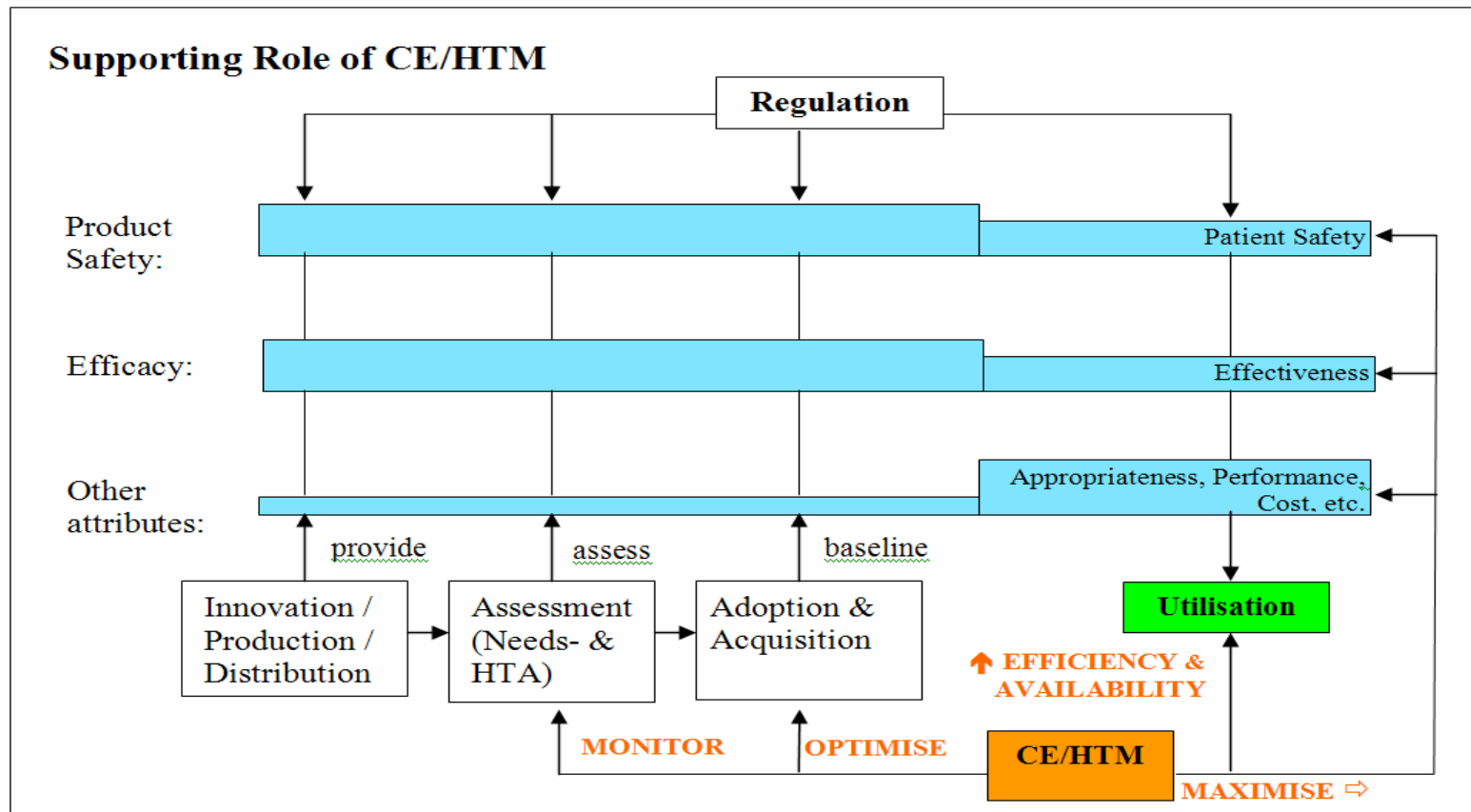
Effective
Efficient

Patient-centered
Equitable

IOM (2001) “Crossing the Quality Chasm: A New Healthcare System for the 21st Century”



Role of HTM/CE in supporting quality healthcare (optimising HTA evaluative dimensions)



Case Study:

A Framework for HTM (South Africa)

- SA **Health Technology Management System**
 - separate but complementary systems for:
 - **Planning**
 - **Assessment** (HTA Agency)
 - **Acquisition & Procurement**
 - **Utilisation**
 - 3 levels of regulation
 - **Global: Innovation / Assessment**
 - **National: Allocation / Financing / Stewardship**
 - **Local: Service Provision**

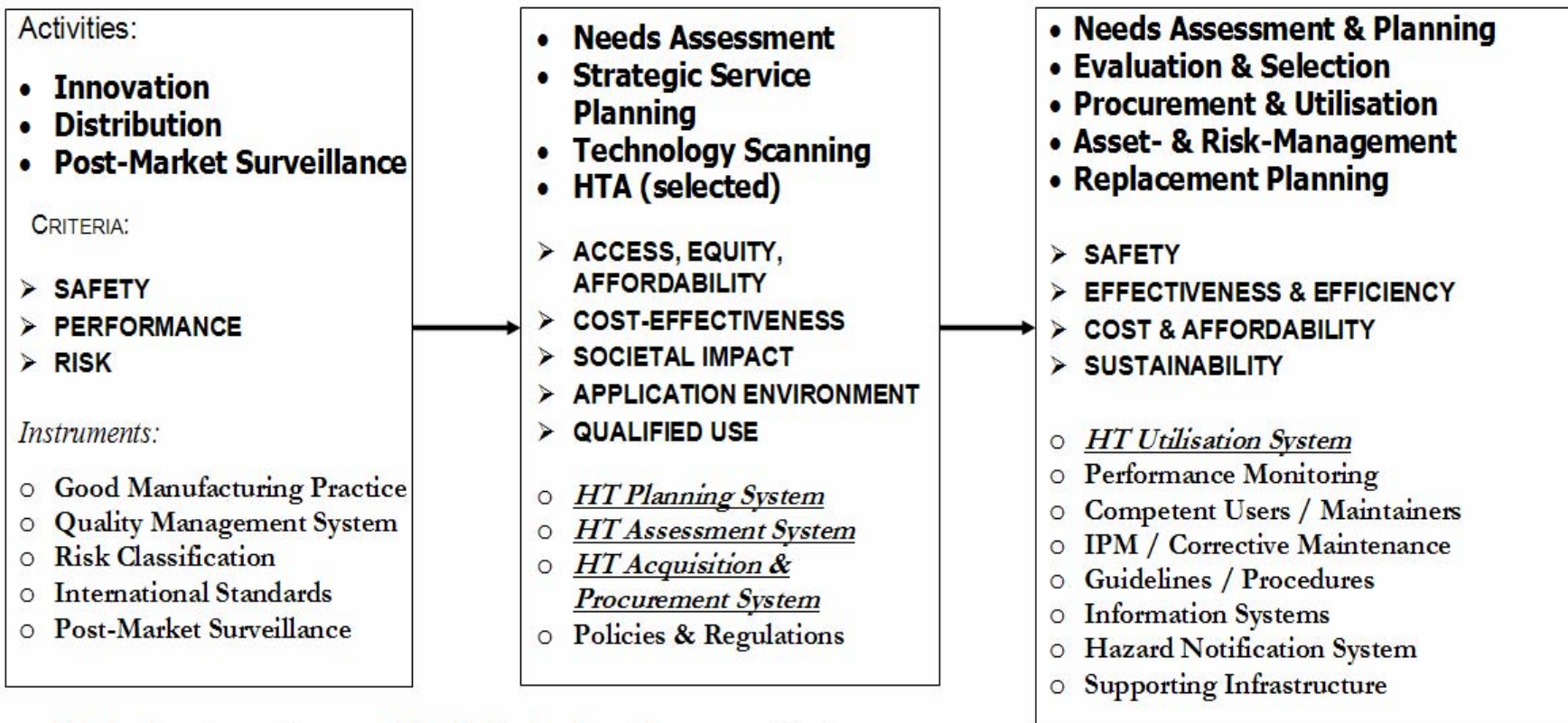


Proposed Regulatory Framework for Medical Devices (South Africa)

Level I: Global

Level II: Societal

Level III: Service Provision



The 4 sub-systems of proposed Health Technology Management System (as per SA HT Policy Framework) are *indicated thus*.

Poluta (2004)

Issues and Challenges

- HTM “buy-in” / political **will**
- **delineation** of fields of activity and accountability
- appropriately **skilled** human resources
- HTM practitioner **profiling**
- certification vs **registration**
- decision-making / management **support tools** & associated **information systems**
- national, regional and international **networking & collaboration**
- role of **international & regional** players (credibility, capability, capacity)



Role Definition within Technology Life-Cycle

	Global (Level I)	National (Level II)	Local (Level III)	Comment
Focus:	Innovation / Assess ^t .	Allocation / Financing	Service Provision	
CE Role:	*	**	***	Level I role growing
HTA Role:	***	**	*	Level III the next frontier
HTM Role:	*	***	***	
International	***	***	***	(Potential) Structure, Processes

HTM Programme at UCT

- Launched in 1998 in response to current & anticipated needs of developing countries
- teaching, research, advocacy, consulting, networking
- P/Grad Diploma: Healthcare Orientation; HT Assessment; HT Planning & Acquisition; Clinical Engineering Practice; Health Facilities Management; Health Informatics & MIS;
- Project Management
- MSc, MPhil & PhD programmes
- context-sensitive capacity building / lifelong-learning
- support of national, regional and international stakeholders
- increasing collaboration (Italy, USA, Germany, ...)



HTM Programme at UCT - II


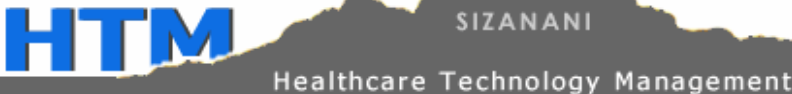
Research projects include:

- HTM Body of Knowledge
- HTM Practitioner Competency Profiling / Unit Standards / NQF
- Performance & Sustainability of HTM-related services
- HTM Information & Decision-Support Systems
- Integrated Healthcare Resource Management
- Reduced Healthcare Asset Nomenclature Systems
- HTM Coverage, Efficiency and Impact



Sizanani Resource Centre

<http://sizanani.uct.ac.za/rc>



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Sizanani Resource Centre

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Note that if you post news, it will only be displayed after the site moderator has approved your news message.

Welcome to the Sizanani Resource Centre!

The Sizanani Resource Centre is in the final stages of development. This resource aims to provide a wealth of information for the [Healthcare Technology Management \(HTM\) Programme](#) at the [University of Cape Town](#), as well as HTM practitioners generally (with a special focus on the African Region).

Please use the menu on the left-hand side of the screen to explore the Resource Centre. We hope that the site will provide you with a great deal of useful information and trust that you will make use of it often.

Published Feb 25, 2003 - 08:43 AM

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Votes: 2 | Comments: 0

Building Capacity - Building Community

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International Centre for HTM

<http://www.ichtm.net>

The screenshot displays the ICHTM website interface within a browser window. The browser's address bar shows the URL <http://www.ichtm.net>. The website header features the "GLOBAL VILLAGE" logo on the left and the "ICHTM" logo on the right. Below the header is a navigation menu with tabs for "FOYER", "MEMBERS LOUNGE", "NEWS ROOM", "ICHTM ONLINE", "GLOBAL VILLAGE", "HEALTHCARE CENTRE", and "RESOURCE CENTRE". A secondary navigation bar includes links for "Links", "Exhibition Hall", "Classifieds", and "Feedback".

The main content area is titled "View resources by category" and includes a "Keyword Search" field and a "Make a Submission" link. On the left, a category list is shown in a scrollable box:

- Discussions Groups
- Events
- Funding/Development
- HCT Planning & Acquisition
- HCT Utilisations & Maintenance
- Health Economics
- Health Facilities
- Health Informatics & Computing
- Health Systems
- Health Technology Policy

Below the category list is a "Show Category" button with a cube icon. The main text area contains the following instructions:

Here you can search for HTM related links by category or by [keyword](#).

Simply click on the option that best suits you from the tools above or the category manager on your left.

If you would like to submit a link [click here](#).

In the bottom left corner, there is a "LINKS" icon consisting of several 3D cubes. The footer of the page reads "Indalo Internet Solutions ::".





Thank you !

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