Strategic Dimension One
Vision and Philosophy

The first strategic dimension is vision and philosophy. The creation of a shared vision and its underlying philosophy provide institution leaders and teacher educators a vehicle for coherent communication about how ICT may be effectively used for teaching, learning and administration in the teacher education institution (TEI). Within this dimension, the strategic foci are:

- Institutional Vision for ICT in Education
- Underlying Philosophy for Teaching and Learning with ICT
- Needs of Schools and Society
- Formulation and Ownership of ICT in Education Vision
- Review of ICT in Education Vision

Institutional Vision for ICT in Education

Churchill and Lim (2007) point out that one barrier to ICT integration in education institutions is the lack of comprehensive vision by their leaders. The establishment of institutional vision is the primary means through which the organization defines its identity, articulates its aspirations, and fosters the commitment among its staff (Abelman & Dalessandro, 2008). The concept of institutional vision is further elaborated by Abelman and Molina (2006, p.5):

> Institutional vision is a philosophical template; it is a conception of a college or university at its very best and the kinds of educated human beings cultivated there. It reflects the nature of the learning community within the college or university and defines the perceived purpose, priorities, and promises of the institution. Institutional vision is grounded in the physical, historical, fiscal, political, and cultural contexts in which that institution exists. However, vision transcends these characteristics— many of which may be shared by other institutions—to give that institution a distinctive function, coherence, direction, and meaning.

Articulating a coherent vision for the TEI in terms of its ICT environments and its ICT-pedagogical foundation is a necessary and meaningful exercise. This involves institution leaders and teacher educators negotiating, constructing and articulating a "vision of how and why changes are being planned and implemented, as well as ensure that changes are being driven by learning and teaching issues" (Gallant, 2000, p.73) rather than by technological advancements alone. The articulation of the institutional vision for ICT in education in turn has to be underpinned by education faculties' philosophy, explicating faculties' beliefs and the co-construction of new philosophy is necessary.

Underlying Philosophy for Teaching and Learning with ICT

An inevitable part of envisioning involves introspection among teacher educators and leaders in the TEI to re-examine their roles in a changing time. Most educational technologists strongly advocate the use of ICT to facilitate the processes of knowledge construction (Sewlyn, 2008). Underpinning such inclination is a strong commitment towards the philosophy of constructivism and social constructivism. Both constructivism and social constructivism are premised on the relativistic epistemological outlook. Knowledge, from the constructivist point of view, are tentative ideas about the world and knowing is a process of

constructing better understanding about some phenomena (Bereiter, 2002). Teaching and learning founded on such philosophy is radically different from the practices that are founded on objectivism. Teacher educators' epistemological positions and their conceptions of teaching and learning may not necessarily be compatible with the constructivist's position (Deng, 2004; Samuelowicz & Bain, 2001; Wong, Khine, & Chai, 2008; Zhou & Xu, 2007). The transformation of teaching practices towards the constructivist oriented practices often involves deep changes that cut across multiple dimensions (Windschitl, 2002).

Therefore, an understanding of the current beliefs and perspectives that teacher educators and leaders hold may serve as a good starting point for discussion about the underlying philosophy of the institutional vision. Based on their qualitative case study, Finley and Hartman (2004) have created a questionnaire that may be used to collect baseline data about the teacher educators' perspectives towards teaching and learning. The constructivist's notion of knowledge and knowing may then be clarified, examined and argued vis-à-vis its competing philosophies and a negotiated stance and understanding may be reached among the teacher educators and leaders. This is essential if the teacher educators are to move in tandem with the TEI vision for ICT in education. In this sense, the envisioning exercise may also be a starting point of professional learning for its teacher educators and leaders.

Needs of Schools and Society

Envisioning is a complex undertaking that requires the examination of various aspects of ICT and other related information. For example, in preparing a new vision for European countries, Punie (2007) considers not only the needs of economic development and the trend in ICT advancements but also the social trends and challenges. A more comprehensive understanding of current and future trends leads to a more robust and relevant institutional vision for ICT in education. Envisioning, in the context of pre-service teacher education, is a process of articulating the profile of future school teachers in terms of how they teach, learn, administer and innovate with ICT.

Together with other government and non-government agencies, TEIs are responsible for equipping pre-service teachers with a set of competencies for the actualization of the envisioned classrooms. As such, the envisioning endeavour of any TEI has to consult relevant policies of the country or the local government. In many countries, numerous policies have been laid out for schools to reference or being held accountable to. These policies usually outline the vision of teaching and learning in the classrooms of the country. For example, the recent articulation of e-Strategy Framework by the government of South Australia allows schools to perform self-assessment in terms of their effort to promote teaching and learning with ICT for better learning outcomes (DECS, 2008). The framework consists of five categories: Vision and Leadership; Teaching and Learning; Professional Learning; Administration; and Resources. The document represents South Australian policymakers' vision of what an ideal school with comprehensive ICT strategies is about.

Other examples are the Baseline ICT Standards of Singapore (http://www3.moe.edu.sg/edumall/mp2/base_stds.htm), the National Educational Technology Standards of the United States (http://www.iste.org/AM/Template.cfm?Section=NETS) and the Framework for ICT in secondary education of the United Kingdom (http://www.standards.dcsf.gov.uk/secondary/framework/ict/). These documents provide detailed descriptions in terms of the ICT and learning skills that students of various age

groups should master. Studying such documents help the TEIs to better meet the needs of schools and society. However, as leaders in education, TEIs have to adopt a critical stance towards the policies and add value to the policies. For example, Deng's (2004) criticism against the paradigm of teacher training vis-à-vis teacher education is a valuable contribution towards the educational reforms in Singapore.

In addition to local government policies, the documents by international organisations and leading nations for the use of ICT in education are worth consulting. For example, working under the leadership of UNESCO, Microsoft, Cisco, Intel, the International Society for Technology in Education (ISTE) and the Virginia Polytechnic Institute and State University has recently crafted the UNESCO ICT Competency Standards for Teachers (ICT-CST) (UNESCO, 2008). Such documents are valuable reference especially for countries that have not formulated their own standards of ICT for teachers. The ICT-CST specifies a continuum of three approaches to education reform, namely the technology literacy, knowledge deepening and the knowledge creation approach. These approaches are mapped across six dimensions of the educational system: the policy and vision; curriculum and assessment, pedagogy; ICT tools; organization and administration and teacher professional learning. The first approach focuses on developing teachers' technological skills, while the second approach emphasizes on applying knowledge to solve complex problems with the aid of complex ICT tools. The third approach focuses on the knowledge creation. These approaches may co-exist in a TEI and serve complimentary roles for each other. Figure 1 is extracted from the UNESCO document. The ICT-CST maps out the major components that envisioning has to consider and the possible development trajectories that a TEI may follow.

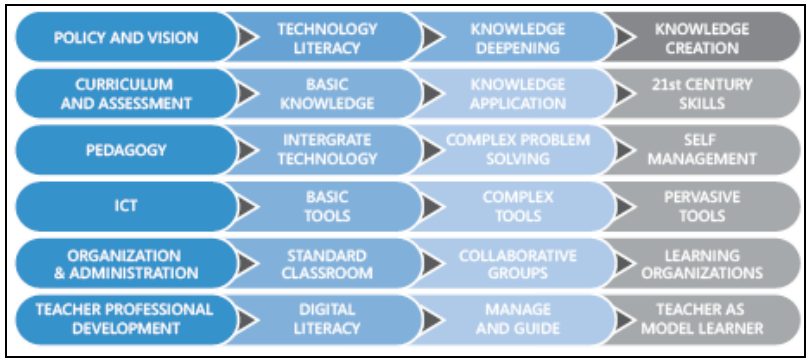

Figure 1: UNESCO ICT-CST Framework (**UNESCO, 2008, p.11, http://cst.unesco-ci.org/sites/projects/cst/The%20Standards/ICT-CST-Policy%20Framework.pdf**)

Formulation and Ownership of ICT in Education Vision

The discussion of the previous three strategic foci have implied that the process of envisioning requires the ownership of the ICT in education vision by all members of the TEI rather than a top down vision imposed by the senior management of the TEI. Finely and Hartman (2004) have reported that university faculties are concerned "with the 'bells and whistles' approach to technology integration" (p. 325). By nature of their profession, university faculties, including teacher educators, are inclined to adopt a critical stance towards innovation (Brantley-Dias, Calandra, Harmon & Schoffner, 2006). The formulation of shared vision and the development of strategic plans are therefore essential in that they

direct the efforts of all staff within the TEI towards that shared vision (Hew & Brush, 2007; Lim & Khine, 2006).

Review of ICT in Education Vision

The vision of a TEI may be based on fundamental values that can last the test of time. However, given the dynamic nature of ICT advancement, the same does not seem to hold true for ICT in education visions. As recent as the early 90s, before the appearance of the Internet, computers could stay as peripherals for teachers. Given the current trends of ubiquitous computing devices and the emergence of Web 2.0 technologies, ICT in education visions have to be constantly revisited to stay relevant. Ministries of education in many countries have been constantly revising and fine-tuning their ICT in education visions and strategic plans. British Educational Communications and Technology Agency**,** for example, has been actively studying the use of ICT in the UK to provide useful information and suggestion of how UK schools should move forward. Similarly, the evolution of the IT Masterplans in Singapore has also reflected a proactive stance of the government towards ICT. As such, the ICT in education vision developed by TEIs may need to be reviewed as the needs of schools and society change with the advancement of ICT. Zhou and Xu (2007) document the case of the University of Alberta in assessing its strategic goals after ten years of implementation. This case may provide some important information on how to collect data for the review process. Given the rate of change of ICT, ten years seems to be too long a timeframe for timely response to external needs. While five years seems to be a reasonable timeframe, responsive and exemplary review should perhaps be a proactive and ongoing process that is based on needs rather than schedule.

The outcomes of the envisioning exercise are usually in the form of a framework not too dissimilar to the e-Strategy Framework or the ICT-CST documents. It should provide a clear blueprint for subsequent works on strategic planning, curriculum design and development, infrastructure and intra-institute policy setting. Shulman and Shulman's (2004) recent model of teacher learning may serve as a good reference in terms of facilitating the ideal pre-service teachers for ICT use in classrooms. Based on their research on preparing teachers to teach in the community of learners approach, they suggest five elements for their new model. They are "Ready (possessing vision), Willing (having motivation), Able (both knowing and being able 'to do'), Reflective (learning from experience), and Communal (acting as a member of a professional community)" (p. 259). Articulating these elements for pre-service teachers is a good start for the design of curriculum and assessment, which will be the focus of the next strategic dimension.