



## CONCLUSION

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### ACHIEVEMENTS

The last few decades have been characterised not only by the rapid development of technology but also by its integration into all aspects of society – educational, cultural, social and entertainment. The impact is especially visible in the developing world.

Today, information and communications technology (ICT) plays a major role in the socio-economic development of a country through the provision of timely, accurate information. Almost all nations around the world, both developed and developing, are focusing their ICT infrastructure and human resources on children and young adults to prepare them for today's world with all its challenges and opportunities. Through a skilled and educated generation, well-equipped with both knowledge and ICT tools, a country can play a dynamic role in the global economy and support the building of its information society. Today ICT is changing the way people think, learn and act, just as the tractor dramatically changed farming when it was first introduced. Computers are the means by which students orchestrate the use of ICT to share knowledge and communicate with each other, thereby shaping the future of nations.

The new ICT is considered a “tipping point” in the development of nations. The new communication tool, the Internet, has become a vital source of information dissemination. It has changed all aspects of life: technologically, the Internet empowers people with tools for a more efficient means of living; culturally, the Internet creates opportunities and means to share and exchange ideas across the geographical boundaries; and economically, the Internet helps emerging economies based on innovation. It is the fastest, easiest and richest tool not only as an information provider and knowledge disseminator, but also as a network connector around the world regardless of time, space and difference. The power of the Internet has helped the world to become smaller and to realise the concept of a true “global village,” through eliminating the geographical boundaries between countries. As Kofi Annan, Secretary-General of the United Nations has said, “Information technology is not a magic formula or panacea. But it is a powerful force that can and must be harnessed to our mission of peace and development.”

Realising the importance of the role of ICT, the need for knowledge acquisition and quality education, countries have strived to build their knowledge-based societies. Nations have invested in developing new education policies to ensure the foundation of the knowledge society through having knowledge organisations, knowledge communities and knowledge schools.

To address the challenges of realising these new policies, it became clear that there was a need for the emergence of a new movement — one that would both support the government in achieving its socio-economic and development policies and ensure the fulfilment of Education for All by 2015. To this end civil society has had a great impact in formalising new strategies and initiating new programmes to integrate ICT in education, whether in developed or developing nations. The so-called schoolnet formations have played an instrumental role in shaping the world of education, introducing new directions for the use of technology as a main tool to empower young learners to be critical thinkers. School networking organisations are being looked at as the creators and innovators of ideas and information, and governments have welcomed the active role of NGOs in this arena of education and often empowered them and partnered with them, giving their work more credibility and public acceptance.

School networking organisations have been instrumental in identifying and laying the foundation of the main pillars of integrating ICT in education. This has been done through various initiatives such as training teachers to use ICT in the classroom and for management, online course and content development to ensure the integration of ICT in course delivery, providing an ICT-appropriate environment, adopting and engaging in online collaborative programmes, and basic technology trouble-shooting which will lead to providing a new holistic approach for ICT. Through the role of schoolnets, integral programmes have been formulated which have enabled the institutionalising of ICT in education and encouraged innovative approaches to learning and teaching. This study reflects on the schoolnet developments in various regions of the world and their impact on the education system. For example:

- The emergence of SchoolNet Africa (SNA) in the late 1990s had a significant impact on a number of national policies in education. As a knowledge organisation, SNA has left its fingerprints in shaping ICT in education policy in a number of African countries. This formation led African students to play a role globally in the cyber world and to contribute with their educators in building the African Knowledge Warehouse (SNA's educational portal).
- In Singapore, the work of integrating ICT in education is a true model of partnership efforts, where government, the private sector and NGOs have been instrumental in driving education initiatives. It is obvious that the school networking organisation, in collaboration with the government, has made great strides in using ICT in education and learning. Through their efforts, they have managed to ensure an increase of 30 per cent in the use of ICT in learning due to the high ratio of computers to students. (Based on the latest statistics published on the Ministry of Education Web site, of 302,501 primary students, the ratio of computer to students is 1:6, while of 194,002 secondary students, the ratio is 1:5.) Additionally, computers are now available in the classrooms, libraries and community centres. Thus, access is no longer a challenge, but an empowerment tool for educators and learners, representing creativity, innovation and the best utilisation of ICT in education.
- The efforts of SchoolNet Canada have focused on capacity-building to enable and empower youth to play a role in the global economy and help in growing the Canadian information society. The role of SchoolNet was derived from the country's education priority, and it now helps to foster the socio-economic growth of the country.
- In the Middle East, through a public-private partnership, developing countries managed to leapfrog into the field of integrating ICT in education. In Jordan, the innovative Jordan Education Initiative (JEI) is transforming the public education for

effective and advanced learning deployment. JEI's goal is to accelerate the socio-economic development through application of distance learning, provision of an ICT-appropriate environment, content and curriculum development and capacity-building. The Jordanian government has made great strides in ensuring education is part of and a key factor to accelerating socio-economic development.

One of the outstanding achievements of school networking organisations has been to move the education system towards a student-centred approach, where learners are the focus of the whole system. Empowering them and creating programmes to build their critical learning and thinking abilities have become the main concern of governments. This was very clear with the ThinkQuest Africa programme, which offered a new style of learning to empower young Africans to collaborate on and develop educational Web sites through the use of the new technology. ThinkQuest Africa goes beyond developing content by African students for Africa however; it prepares the learners to be the workforce innovators and active contributors in the knowledge era.

School networking has evolved from different organisations, and as this report makes clear, they vary in nature and types: in Thailand school networking is driven by the ICT industry; in Singapore, Nigeria, Canada, and Europe, it is an integral part of ministries of education; and in parts of Africa and the Middle East, it is part of the civil society. But whatever the organisational differences, school networks have managed to partner and seek support from all key stakeholders in the sphere of ICT and education, from industry and business to government and international organisations. And as a result, a number of organisations and business have been established and formalised, thus contributing not only to the enhancement of education and empowerment of the learners but also to the creation of new jobs, employability and economic development. In fact, it is foreseen that school networking organisations will play a crucial role in the socio-economic development of a country.

How does this evolution take place? Through an educated nation, economies can transform and the different sectors of society can progress. Thus, a new generation, capable of competing globally will transpire, driving nations to a new realm of independence. Achieving this will happen through mobilisation and collaboration of both the public and private sectors. This partnership, with school networking organisations representing the grassroots movements and being a major stakeholder, is one of the key success factors.

## **CHALLENGES AND THE WAY FORWARD**

School networking has been significant in not only introducing ICT into education, but by bringing new ways of thinking, creating a space for public-private collaboration, enhancing skills and supporting employability. Additionally, the efforts of school networking have led to strong alignment and co-operation between the ICT and education sectors and collaboration at both public and private sector levels. This alignment of plans has been clearly reflected in this report in a number of countries in Africa, the Middle East and Asia. This success of school networking lends itself to a clear vision of champion and partnership in development.

However, despite success, questions still exist:

- How will these organisations sustain their operations, especially if they are NGOs or have been established through the support of intergovernmental organisations or programmes?

- How will school networking continue to drive the process, especially after it is integrated in the ICT and education policies of the governments?

These questions of sustainability present a major challenge to school networking organisations.

Sustainability should be looked at from three different perspectives: social, political and economic. From a social perspective, schoolnets have to continue to play a leading role in developing new initiatives and measuring the impact of programmes. The adoption of new programmes and the evolution of existing ones will continue to position schoolnets in the leading role. Schoolnets should ensure that there is a viable plan to address the challenges of enabling infrastructure, capacity-building, teacher development, curricula and content development, technical support and help desks, and management and sustainability. Schoolnets must continuously be learning organisations and institutionalise new ideas to maintain their role of champion in the industry.

From a political perspective, schoolnet plans have to be integrated into the ICT and education country master plans. Schoolnets have to be a member of key structures that determine the future directions in this sphere. Additionally, they have to maintain strong, broad, effective management and be a model for public-private partnerships. The high level “buy-in” and support should always be sustained.

Finally, the economic perspective must be considered. If the social and political aspects are well met, the economic sustainability will be addressed naturally. Three main factors will ensure economic sustainability: maintaining a leading role, keeping in partnership, and effective management. If school networking organisations manage to maintain these three pillars, economic sustainability will be achieved.

With sustainability, we will continue to witness the emergence of school networking formations and programmes in the years to come. These could be called thinking schools, e-schools or something else. Whatever the label, innovation and new initiatives will be the drivers to integrated information technology solutions in education, leading to the creation of unique opportunities for serving the growing information society.

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