

## The radiologist in a digitised globalised world: thrive or wither?

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*Question: What is the truest definition of Globalisation?*

*Answer: Princess Diana's death.*

*Question: How come?*

*Answer: An English princess with an Egyptian boyfriend crashes in a French tunnel, driving a German car with a Dutch engine, driven by a Belgian who was drunk on Scottish whisky, followed closely by Italian Paparazzi, on Japanese motorcycles; treated by an American doctor, using Brazilian medicines [1].*

Change, although constant, does not always announce its arrival in the way and form we are all comfortable or happy with, let alone recognise it is happening. The introduction of some new technique or modality is usually clearly visible, but the impact of that change on practice is usually more subtle and gradual until one day we may find ourselves being washed away by a giant Tsunami while we ask what is happening! Globalisation is similar in that the increasing interdependence and interaction among people, companies, and governments of different nations, driven by international trade and made possible by innovations in information technology will also sweep the ill-prepared away.

Good health for all is an accepted international goal

[2] with broad gains in life expectancy over the past century. However, despite these gains, health inequalities between the rich and the poor persist. The prospects for future health increasingly depend on the relatively complicated process of globalisation [3] where health is not only a benefit of development, but is also indispensable to development [4]. Illness leads to "medical poverty traps" [5], creating a vicious circle of poor nutrition, forgone education, and still more illness, undermining the economic growth that is necessary, although not sufficient, for widespread improvements in health status.

The economic aspects of globalisation of health care have been the driving force behind the overall process of globalisation over the last two decades [6]. The accrued benefits of globalisation vary between the developed and less developed nations with the general view that the more developed nations have benefited more from the current form of globalisation. Consequently, for the less developed nations the globalisation of health care raises contentious issues like:

- How can countries deal with globalisation in the context of their existing cultures, beliefs, resources and system?
- How do we deal with the impact of globalisation on the health care delivery systems of the various jurisdictions? [7]
- How does a nation claim a share of the economic activity that the health industries and service sectors represent, which incidentally is the largest global industry on a global scale? [7]

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- How can the developing nations protect the indigenous treatments from being patented in the industrialised nations?
- How can the serious brain drain of the limited health care personnel from the less developed nations to the industrialised West be moderated to ensure the needy in these countries have access to this invaluable resource?
- What mechanisms should be in place to ensure universal access to essential medication and basic imaging facilities?
- Is the promise of technology that is vital for the competitiveness of the developed nations applicable to less developed nations? Or should they choose a more appropriate level of entry considering their limited financial, human and technical resources?

Globally, health care costs have been escalating, more so in the industrialised Western nations with attempts to control spending. In the US, the biggest challenge to their budget is mandatory spending for programmes such as Medicare and Medicaid, and Social Security. If entitlement spending were not brought under control, it has been projected that these programmes would consume 60 percent of the entire federal budget by 2030 [8]. It is estimated that over 80 cents out of every premium dollar goes directly towards paying for medical services, 10 cents of which cover costs of medical liability and defensive medicine [9]. Even though imaging will face the brunt of the cost-cutting, it has also been shown that while imaging costs are rising at approximately the same rate as other hospital costs, it provides benefits such as shorter hospital stays, which actually reduce costs [10].

For organizations or practices to remain competitive in this global environment, they must recognise the new health care marketplace and its effects on their practices. These changes encompass health consumerism, marketing, providership, recruiting [11] and the networks.

#### GLOBAL CONSUMERISM

The consumer of the 21st century is increasingly critical of quality and service, but more importantly they want the consultation, diagnosis and treatment, and if possible, cure right now! In addition, these consumers have educated themselves on their medical condition and are prepared to question their health care provider on the choices available to them [12]. They even come with stacks of printed copies of information downloaded from the Internet for confirmation and clarification. The increased presence of the personal health record [13], centered on consumer, is empowering them with control of their health care. It is not unthinkable for them to insist that their health information is updated into their records for second opinions and safe keeping. They will become their own gatekeepers.

In medicine, irrespective of the state of development, globalisation has resulted in almost immediate

dissemination about new treatments, technologies and strategies for health promotion, or the opportunities for enhanced political participation and social inclusion that are offered by new, potentially widely accessible forms of electronic communication. This has been made possible through increased access to Internet, satellite television, publications as well as the greater ease and cost of travel. Enquiries about some new breakthrough that was just announced half way round the world only a few days ago or why are we not offering a particular treatment even though it is reportedly giving excellent results in publications, are not uncommon.

#### GLOBAL MARKETING

While consumers search the Internet to gain better knowledge about their health and medical conditions, they are also seeking out the most attractive health care provider both locally, regionally and internationally [14]. They look at comments by third-party providers and by the patients themselves on blogs or testimonials.

#### VIRTUAL PROVIDERSHIP

Health care providers must now make their services more readily accessible than was ever physically possible previously and at an amazingly reduced cost. Already, this inevitability has reached the individual clinician where doctors/institutions/service providers recognise that Web-based technologies will inevitably become more central to their work [15]. Health tourism is another consequence of this trend where we will see greater collaboration between services and centres across oceans providing complex care e.g. health insurance companies providing services for their clients in other nations. The rationale being increased speed of care at lower cost with a sea-side holiday thrown in for recovery.

The traditional borders of the imaging department are fading: Multi site operations, off-site readings and especially teleradiology are changing the way radiology is performed. The jury on off-shoring is still out, since major challenges occur when one looks at issues of cross border transfer of digital image information, whether for purposes of reading or use for management. This is in part due to the highly regulatory environment and national compliance requirements.

The promotion of cost reduction and savings for using off-shore services in health care should not by themselves be solid business grounds for off-shoring. It is essential that organisations consider the use off-shore services as a strategic tool, which must be integrated with their business model e.g. would these off-shore services support and improve the organisation's overall ability to deliver quality services? Would patient safety or care delivery efficiencies and service levels get better?

Closer to home, medical imaging may not be the only productivity driver as digital imaging and information technology (IT) allow providers to better manage vast volumes of data at a lower cost. Only two

elements exist in a connected world; the customer and the information and the key to the former lies in managing the latter. Implementation of health care IT will provide hospital administrators and physicians a competitive advantage in helping them manage their practices akin to that of a business. The better use of technology and inter-operable electronic networks should accelerate integration, standardisation and knowledge transfer of the administrative and clinical information, and especially in the context of the globalisation of health care and efforts in many countries to create a sustainable health system. Ultimately, it is hoped that such use of data-mining would result in better outcomes, more cost-effective processes and overall improved health care.

IT would allow organisations to track a wide array of variable affecting practice e.g. revenues by exams vs. charges; planned vs. actual scheduling; referring physician trends – where are referrals coming from?; referral market trends – measure referrals by zip codes and demographics; staff efficiency – average and individual, track productivity – volume trends; incomplete exam work – unfinished exams affect your bottomline and efficiency; accounts receivables – average payment periods; total patient time – both patient and facility and referring physician report time – how long does it take to get the report to the referring physician?

On the provider side of imaging services, challenges arise when images are accessible to any physician as they are to radiologists. Consequently, referring specialists are increasingly reading imaging exams especially when the images provided are so exquisitely detailed and/or are of textbook quality. This threatens to make radiology, as we know it and as it is being practised, obsolete for certain specialties [16]. The future of radiology will hinge upon building value in the role of the radiologists as a synthesizer of patient information, including images, history, pathology and molecular diagnostics, in an effective bidirectional communication. This must be done in the most cost-effective manner that helps control health care costs. In addition, there are also issues with relation to workstation and what must be done to enhance productivity. What are the characteristics of the ideal workstation of the future to ensure maximization of the potential of digital image management?

Quite simply, the future of radiology is strongly dependent upon the ability of radiologists to add new value to the service they provide, especially as perceived by referring physicians and other specialties. If radiologists don't change their current work flow and provide the value-added diagnostic information in a timely manner to their referring physicians, they will continue to lose control over additional imaging procedures.

## GLOBAL/VIRTUAL RECRUITING

There increasingly much broader and more severe worldwide shortage of health care workers than the periodic shortages over the past four decades. This shortage reflects growing demand, shifting demographics, a change in career expectations and attitudes about work, and worker dissatisfaction within health care [17] as well as greater mobility and international recognition. To meet this demand, providers will be forced to recruit staff worldwide taking into consideration the heterogeneous needs of workers from various cultures [18].

## GLOBAL NETWORKS

Global networks in medicine have allowed individuals, organisational and business linkages in both international health and global medicine. These networks have promoted cooperative relationships in areas such as standards and formulation of practice guidelines, research in multi-centre and multinational trials (the European Institute for Biomedical Imaging Research [EIBIR] [19]), health education e.g. bii online recordings [20], ECR's Digital Preview System [EDIPS] [21]), visitor exchange, humanitarian service as well as medicine and supply donation. Radiology like most other specialties must take further advantage of these networks to promote and enhance the understanding of important issues e.g. control of molecular imaging including cross-training techs in preparation for the continued emergence of hybrid technology.

Globalisation has impacted every other industry, and health care has not been exempt. Globalisation, unfortunately, is not something to react to. A practical approach for leaders would be to look at globalisation not if it can be applied today, but rather, what are the forces moving health care in this direction, and how can leaders prepare their organisations to respond? Practically speaking, there are so many urgent issues currently facing leaders that it seems difficult to find time for things, which are arguably more futuristic. Nevertheless, it will be important for leaders to keep abreast of future issues today and incorporate imminent concepts as a significant part of the future of health care.

Even though it is impossible to predict exactly where new technologies, and social and economic changes will take us, we must nevertheless think about the new order of things in relation to where and what we are now and what we wish to become in the new order of things. Leaders must not react to the future; rather, they must prepare for it. We must prepare organisations for change in the possible futures. And build organisations that can thrive in a shifting environment where "what" changes get done along with "how" they get done and even "where" and by "whom" and "for" how much. Health care leaders must learn to control their destiny or someone else will.

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