E For Education : Why E-textbooks are

The Government's May 7th decision to liberalize the 'current textbook-market monopoly' by promoting the use of textbooks in digital form i.e. electronic textbooks (e-textbooks) is a 'game changer'. I believe it to be as significant as the 1998 decision to liberalize our telecom market as it enables Hong Kong to fully exploit the internet Intellectual Property (IP) revolution. This revolution in 'free' copyright licences has fundamentally changed the process of how textbooks are written, edited, distributed and monetized. However, if we only see e-textbooks as the answer to saving costs, we would fail to recognize how they can fundamentally change the way we teach! By introducing liberal studies and e-textbooks, we are now changing the process of how we 'study smarter' and how we leverage our education using IP.

So what is the value of IP and why should we care?

The Value of Intellectual Property (IP): Good Growth and Good Jobs

If we look at the current world leader, then according to the United States (U.S.) Chamber of Commerce, 48.4% of total US Gross Domestic Product (GDP) is generated by US intellectual property companies in both the manufacturing and non-manufacturing sectors (i.e. about HK$ 45,000 billion), with 'IP-intensive industries' accounting for some 74% of total US exports. Average pay within these IP-intensive industries is some 30% higher than for similar workers in non-IP-intensive industries. It is no wonder that the US is fiercely protective of its IP rights globally – they provide lucrative commercial opportunities that support good paying jobs. Perhaps it is no surprise that, as far back as 2008, China developed its National Intellectual Property Strategy as part of the 'five-year plans' that influence our own economic development as a 'bridge from China'.

Indeed China's National IP Strategy should be of particular interest to us, as we expect the payoff for our investment in education to be opportunity and fulfilling, well-paying jobs for our kids. Yet we find ourselves squeezed between several giants (US/UK/CN) who are all actively reinventing themselves. How will we prosper? By recognizing, and exploiting, the internet Intellectual Property revolution and creating viable international markets to quickly monetize IP, better known as 'IP Trading' – e.g. for the creation and licencing of e-textbooks.

The Internet IP Revolution: 'Free' Copyright Licences

In the Internet revolution, the property that flows through the fiber-optic cables, and increasingly over the airwaves, is obviously intangible: it is intellectual property (IP). Now, IP can take several forms, namely trademarks, patents, designs and copyrights (whose recent proposed amendments gathering attention as 'Internet Article 23').

The Internet revolution led to great friction between dominant incumbent market players and new entrants, principally in two major IP areas: the first between trust and identity, through trademark infringement and internet domain names (e.g. liberalization of generic top-level domain names (gTLDs)), the second between criminalization and copyright infringement (e.g. Napster, ThePirateBay). For the former, private sector initiatives tried to find new models to resolve differences (e.g. ICANN). For the latter, innovative business models evolved (e.g. Apple's iTunes®) and 'free', open copyright licences were standardized to facilitate legal sharing and searching (e.g. GNU General Public License (GPL) for software and Creative Commons (CC) for everything else). Both were tremendously important initiatives.

The GPL revolutionize legal innovation in writing complex computer software and was central to the 'Free and Open-Source Software' (FOSS) movement. However, in terms of education, it was the introduction of Creative Commons(CC) about 10 years ago that enabled the current revolution in OpenCourseWare(OCW) and Open Educational Resources(OER).

Specifically, CC enabled users, especially educators, to create over 400+ million licenced works that exploit the Internet's ability to exchange digital works and massively collaborate on likeminded projects, without the fear of being sued for copyright infringement. Indeed as long as the licencing terms were adhered to, users didn't even need to ask for prior permission, because some permissions were already granted – for example for non-commercial use. We call this concept 'some rights reserved' and it differs from the copyright default of having 'all rights reserved'.

Given the litigious legal system, this was a key innovative step, as it lowered the cost of production (e.g. by saving time and effort) and legal costs (e.g. of copyright

rights clearance) by reusing, repurposing and building on the work of others – legally.

Perhaps more importantly, it enabled the quality of digital work to be rapidly and systematically improved over time. Incorrect, and initial low quality data, is rapidly and continuously refined into hi-quality information by relying on a community of subject matter 'experts'. Perhaps the best example of this is Wikipedia. This mechanism of innovation, and quality control, helped to solve the fundamental problem of mass customization, while also improving information quality, even as the subject matter becomes more and more complex ... all without exploding your development and maintenance costs. In other words, it is a new production process model that avoids the need to continuously increase investment costs that rise in response to continuously increasing complexity i.e. a common problem in reducing the Research and Development (R&D) expense needed to produce IP. For example ... in producing textbooks!

The other key innovative step was to enable Internet search engines such as Google and Yahoo to automatically be able to find these licenced works. These days if you can't find it, it doesn't exist.

American Liberalization: Open Education

The 'National Education Technology Plan (NETP) 2010' is a seminal document. I suggest you understand it for yourself, but there are some key observations worth summarizing as they reflect how the US is liberalizing their education system to compete with the world. The most important observation is that they believe that access to the teaching team is the most precious resource and not the access, delivery or 'drill' of the teaching material itself – these can be addressed through key innovations in mobile internet technology ('Internet in your pocket'), in delivery and testing (e.g. http://www.khanacademy.org/) and in open copyright licencing. By using their mass customization technology, it appears that focus is moving from the concept of teaching a class, to focus down on an individual student, and his/her mastery of skills – not interim scores. It appears that these skills are carefully planned along a continuum that dismantles the need for all students to progress at the same time, through the same material (i.e. lockstep teaching). This enables a lot of the data/content delivery to be done outside of traditional teaching 'face time', such that class time is focussed on students working in teams to apply their skills to meaningful problems. Teachers' time is repurposed to addressing gaps in skills rather than content delivery. All pretty revolutionary but central to this is the adoption of technology such as e-textbooks, and tablet tools for content development (e.g. Apple's new iBook Author) Bottom line? They are competing assuming teaching materials are free and everyone's a student 24x7!

Thus far, over 32,349 'open educational resources', from kindergarten through to university courses, are available via http://www.oercommons.org/. Many other global repositories exist such as Connexions (20,443 reusable modules in 1221 collections) or the Open Knowledge Repository. Even whole educational courses are available through the OpenCourseWareConsortium.

The Hong Kong E-textbook IP-trading Opportunity

Life's an open book exam! Non-profit making publishers can innovate and rapidly customize the above material for local e-textbooks, e.g. http://www.myoops.org/ There is no need to reinvent the wheel as it should be clear that all students are different, as are their schools, and this variety is a source of our post-industrial strength. Don't put all our kids in one education bureau basket! Hong Kong needs to recognize the importance of 'liberalization' in education and the opportunity cost of not doing so. I suspect that the IP-trading platforms being established in Hong Kong will lead to higher overall e-textbook quality via cross-licencing between for-profit and non-profit publishers.

Within a global context, imagination, creativity and innovation are the keys to drive change in the 'IP-intensive' processes used to differentiate complex services and products – here we must get an 'A' not an 'E'!

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