Asia-Pacific Health Industries Newsletter
Keeping you up-to-date with the latest developments

Issue 18, December 2016
News and analysis by PwC industry specialists for pharmaceutical, biotechnology, medical device, diagnostic and healthcare companies and healthcare institutes.
Editor’s note

PwC’s Global Health Industries network is pleased to present you with its 18th issue of the Asia-Pacific Health Industries Newsletter.

This newsletter aims to keep you informed of the latest developments related to the pharmaceutical and medical device industries, as well as healthcare sectors in the region. To mark the end of 2016, we have highlighted a number of recent developments that are of direct interest to pharmaceutical and med tech companies, as well as healthcare organisations.

As Hospital IT has become a major area of interest and focus within the Asia-Pacific healthcare industry, in the first section of this issue we present two articles related to Electronic Medical Record developments, in South East Asia and China.

Our section on Compliance includes an update on China’s recent enforcement of regulation, as well as an update on transparency measurements.

In our section on Pricing developments, we focus on Japan’s pricing guidelines for Health Technology Assessment, and in the M&A section we highlight the growth in deals among pharmaceutical companies in India.

In the Regulatory section, we outline new regulatory developments and changes to bio-tech regulations in Taiwan.

Further, the Tax section covers the most recent Senate enquiry updates and regional trends in Australia.

In the final section we also present our capability and industry insights around Big Data analytics in the pharmaceutical industry in Australia.

We hope that our timely updates and analysis are of use to you and your organisation.

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Welcome to our 18th Edition of the Asia-Pacific Health Industries Newsletter.

In this issue, we highlight important developments around electronic medical records (EMR) in both South East Asia and China—as a special issue in addition to our regular topics around Compliance, Pricing, M&A, Regulatory Affairs and Tax.

In the development of EMR in Asia, there are many challenges to overcome, yet we are certain that the benefits of EMR interoperability and integration will bring remarkable cost savings, that is, by improving productivity, minimising lapses in patient safety, and allowing for optimal and timely delivery of care. In our view, EMR plays an important role in improving care delivery, as well as contributing to long-term cost savings.

In addition to enhanced demand for EMR, within Asia, PwC Australia has just launched the Digital Health Centre of Excellence in Brisbane, having welcomed Mr Richard Royal as a senior-level advisor from the health industry to the Australian national health practice. This will enable us to continue to develop the nations’ eHealth strategy—and help lead the innovation and integration of technology in digital health—in markets across the Asia-Pacific region.

We also provide an update on health technology assessment (HTA) trials in Japan, as the Asia-Pacific region moves toward an era of utilising HTA to demonstrate the cost-effectiveness of innovation—with an ever growing middle class and incremental increases in public medical costs.

HTA primarily focuses on efficiency rather than equity, therefore, we need to be aware of how this system can influence the change of socioeconomic inequalities. It is the responsibility of both private and public sectors in health industries to collaborate and ensure all can access necessary treatment.

As we need to obtain the best outcome for patients with scarce and limited resources, both industry innovation and health care policy need to contribute to maintaining and ameliorating population health issues, and position health care as an asset that increases the productivity of our society.

As this will be my last newsletter, I would like to thank you, our clients and industry colleagues for your feedback and engagement and hope that we have added to, and will continue to add, value to your businesses.

I am delighted to advise that my colleague, Sujay Shetty, a partner in our Indian practice will be taking over as the Asia-Pacific Pharma leader. Many of you will already be familiar with Sujay’s involvement in the sector and I have no doubt that he will continue to be available and bring all of PwC’s health resources to assist you in your businesses.

I would also like to take this opportunity to convey my gratitude to my PwC colleagues across the various territories, for their active engagement and excellent contributions to our newsletter, as well as the support they have given me over the last 16 years.

I trust that you will find the enclosed newsletter of use and interest to your businesses and, as always, we welcome your thoughts or feedback on any of the issues and priorities it raises for your organisation.

Yours sincerely,

John Cannings, OAM
PwC Asia-Pacific
Pharmaceuticals & Life Sciences Leader
The importance of EMR interoperability and integration: a business and clinical perspective

Since the advent of the electronic medical record (EMR), patient data has been transitioning from paper to paperless. The transition has reduced the burden of administrative tasks and unlocked the potential to analyse health trends, from medical notes and doctors’ prescriptions, with greater ease—as well as reduce medical errors in the process. Continuous data collected through wearable technology is further adding to this wealth of patient data.

However, the lack of a single, completely interoperable and integrated EMR remains a challenge, resulting in multiple systems being implemented across providers, even in smaller countries. Depending on the structure of a nation’s healthcare system and government regulations, each provider can choose between various EMR systems available, with each of them having different and distinct functionalities and capabilities. Not only does the consequent lack of interoperability—where health information systems (HIS) are often not linked “within and across organisational boundaries”¹—result in frustration from users (who often work in multiple institutions)—it also prevents the optimal use of patient data. As a result, the maximum benefit to the patient and optimal patient outcomes are not achieved.

In the era we currently live in, chronic diseases have overtaken acute disease and pandemics. An increase in comorbidities has made a single patient, needing to see multiple healthcare professionals, the norm. This only further illustrates the vital importance of ensuring interoperability and integration of EMRs, in order to provide seamless and optimal delivery of workflow across the healthcare continuum.

From a business and clinical perspective, poor EMR interoperability and integration across providers translates to substantial productivity losses for both, as well as stakeholders and patients. Each time a patient visits a new care provider, a history must once again be provided and then re-entered into the EMR, therefore, negating the main benefit of going from paper to paperless. Physicians have estimated a 20-50% loss in productivity with every five minutes spent on data entry.2 Additionally, if interoperability across the platforms is lacking, receiving systems may be unable to interpret the data correctly, risking medical error, such as adverse events from overlooking potential adverse drug-drug interactions. There may also be delays in patient handovers and transitions from care settings, which then lead to reductions in quality of care.³

The inability to maximise aggregation and analyse patient data further results in lost opportunities to use treatment journey insights for improvements in care delivery and operations.

PwC observations

With healthcare systems constrained by growing expenditure, a shift towards EMR interoperability and integration will bring about significant cost savings by improving productivity, minimising lapses in patient safety and allowing for optimal, timely care delivery. Adoption of interoperable EMR solutions have been expected to generate US$142-371 billion in savings from greater efficiency and safety, in the USA alone.⁴ Encouraging collaboration across providers, payers and platforms—and enabling data sharing to build patient data reserves for research—will facilitate improvements in evidence-based medicine and bring about further cost savings to the patient, provider and payer across the care continuum.

As investment in the public and private hospital sectors grows across APAC, efforts to build and implement connected patient records, across different public and private providers—such as the National Electronic Health Record (NEHR) in Singapore—will gain traction. With global expertise in these efforts, PwC’s Healthcare consulting practices across the region are equipped to assist client needs, such as development and implementation strategy, maturity assessment of current systems and predicted cost-savings analyses.

Sources
1. HIMMS. “What is interoperability”; http://www.himss.org/library/interoperability-standards/what-is-interoperability

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China
The evolution of the EMR: information technology innovation, and health service reform

Technology continues to innovate at great speeds with enormous potential to change the Chinese healthcare landscape. Research indicates that China currently has over 500 million smartphone users, and data shows 94% of online users use mobile devices—clearly enjoying the benefits of high portability and accessibility. In the future, as reliance on on-demand, real-time access to information becomes the norm, EMR developers will continue to expand their solutions to meet the needs of both patients and providers. Consequently, systems and data will continue to shift toward ‘the cloud’. In fact, HIMSS Analytics predicts that by 2020, 80% of all healthcare information will be flowing through the cloud.

Upgrading China’s EMR industry within an environment of challenges and opportunities

1. The core EMR
The electronic medical system serves as a source and repository for medical data in the delivery of care and treatment to patients, and supports the clinical workflow and activities of staff in hospitals or provider offices. Various components include clinical documentation systems, examination systems and order entry systems.

2. The smart EMR
Cognitive capabilities will transform the EMR into a smart knowledge database that supports consultations, examinations, symptoms coverage, diagnosis, decision support, treatment, and other clinical activities, to improve the quality of medical services. Examples include clinical decision support systems (CDSS), rational drug use, and antibiotics management databases.

3. The interconnected EMR
The open exchange and sharing of information between EMRs, including referrals, consultations and reports, will greatly increase the range of health services and care coordination for patients. While the accurate and complete collection of data is important, the value of the EMR can be fully realised when its information is capable of being shared.

4. An integrated Health System
Healthcare is not bound within the four walls of one facility. Throughout an individual’s lifetime, encounters ranging from routine physical exams to hospitalisations, produce data from different sources that are consolidated into a patient-centric electronic health record. A centralised source of abstracted information will be both useful and purposeful across many applications, and have potential commercial value.

5. Health Service platform
At the center of the next step in the EMR evolution is a new healthcare service-focused platform that will act as a collaborative exchange for a wide variety of players, including financial institutions, insurance companies, public health bureaus, local communities, and genomics sequencing companies. Benefitting from this system and its services will not only be traditional healthcare service providers, such as hospitals, but also individual consumers, new healthcare entrants, health insurance companies, pharmaceutical companies, and many more.

PwC observations
With China’s rapid economic development and rising income levels, people’s expectations for healthcare have changed tremendously. Today, many are willing to pay a premium for higher quality medical products and services, and this diversity across patient demographics and disease profiles has become a strong driver of horizontal and vertical development across the industry. Furthermore, many domestic and foreign enterprises have begun to realise the importance and significance of medical data, and have made heavy investments. As a core component of health information technology systems, EMRs continue to be the focus of attention for future development and investment.

Healthcare providers and payers need to adjust their business models in order to change from those based on a single product, to an entire ecosystem supported by a platform of healthcare services.

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Countering commercial bribery

Amongst the trend of deregulation to revitalise the economy, the Chinese Government has been quietly shifting from ex ante market entry control to ex post competition behaviour monitoring. It is against this backdrop that efforts have been stepped up on changing the regulatory framework towards bribery and corruption. Legislation initiatives can be expected to bring significant impacts to Pharmaceuticals & Life Sciences companies, who are frequent investigation targets in China.

On February 25, 2016, the Chinese State Council released the long awaited draft Anti-Unfair Competition Law (“AUCL”) amendment (“Draft Amendment”) to seek public comments. The existing AUCL governs the government regulation over corruptive practices and the administrative liabilities facing the infringers. The Draft Amendment aims to further deter bribery in the business sector.

(1) **Widened scope of commercial bribery behaviours:** Where economic benefits are given without being properly recorded in contracts and accounting documents; and where economic benefits are given or promised to third parties who may influence a transaction, the relevant companies will be held liable for commercial bribery.

(2) **Corporate accountabilities:** Where an employee gives bribes to obtain or maintain business opportunity or competitive advantage for the company, the company will be held accountable for the commercial bribery. No defence has been given in the Draft Amendment.

(3) **More aggressive investigative power:** The authorities will be able to engage in on-site inspection, carry out seizure and seal-up, check on relevant bank accounts and apply to judicial bodies for freezing funds. The Draft Amendment also intends to give the green light to inspections on sites beyond the investigated company’s place of business, and information request to personnel other than those affiliated to the investigated company.

(4) **Pecuniary punishment:** The Draft Amendment introduces a monetary fine spanning from 10 to 30% of “illegal turnover” associated with corruption, while removing the confiscation of illegal gains, which is hard to calculate in practice, and the fine capped at RMB200,000.

**PwC observations**
The Draft Amendment conveys game-changing ideas of the government and has important compliance implications in multiple dimensions. All these merit reassessing the present trading arrangements, and where necessary, taking precautionary measures. The following advices are particularly noteworthy:

(1) Rethink about your distributor/vendor management, and make efforts to get contract, payment, accounting vouchers and invoices coherent and consistent.

(2) Seek professional advice on vendor management and necessity of due diligence.

(3) Stay cautious of legal risks ripping across countries.

(4) Put in place a guideline or staff handbook which clearly states the superiority of compliance requirements vis-a-vis economic gains.

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### Pricing

#### Japan

**Commencement of the trial introduction of HTA**

It has been almost five years since Japan’s Ministry of Health, Labour and Welfare (MHLW) established a taskforce to apply HTA in the pharmaceutical industry in Japan. Japanese Pharmaceuticals and Medical Devices Agency (PMDA) needs to identify how HTA can be adopted in the drug approval process, for the newly listed products in the reimbursable drug list between 2012 and 2015. The government is careful enough to identify any problems through the process of evaluation and, from 2018, is planning to officially adopt HTA in Japan’s drug approval process. Consequently, health experts will determine how pharmacoeconomic data can be utilised for determining reimbursement fees, and optimal pricing, during the trial term.

**Selected outcome indicators during the trial term**

Japanese shines in HTA with the indicators of gold standard, which many other countries have already utilised.

1. **QALY (Quality-Adjusted Life Years)** is the base indicator following many other countries who have already utilised pharmacoeconomic data in HTA. In this regard, other indicators need to be applied, depending on the nature of treatment and characteristics of medicine.

2. **ICER (Incremental Cost Effectiveness Ratio)** will be utilised for appraisal of cost effectiveness.

**Expected effect on pricing and drug approval processes**

Delay of pricing and reimbursement is likely to occur after approval of products. Japan demonstrates relatively short periods between drug approval and launch of products (approx. 9 weeks). However, countries that apply HTA show much longer terms, e.g., 43-60 weeks in the UK, 47 weeks in Australia, and 37 weeks in France. Pharmacoeconomic evaluations require many months of assessment and, presumably, Japan could take longer than other countries given the fact that Japan has relatively weak basic research via the limited number of clinical data for cost effectiveness analysis.

**PwC observations**

In light of ongoing pricing reforms, pharmacoeconomic data should not be used solely for the sake of price reduction, which hinders innovation and discourages manufacturers to launch new products. In order to apply economic data to find optimal prices, strategic planning in early stages of development, is essential.

Given that cost pressures, along with Japan’s rapidly aging population, resources are scarce and cost effective ways of treating patients are in high demand. However, it is vital to maximise the benefits to patients, as well as reward the effort of pharmaceutical companies, in order to contribute to innovative and effective products.

The way in which to create a win-win situation is the most challenging task the pharmaceutical industry faces. Strategy planning on consultation with MHLW, via the use of relevant data during the early stages, will help Pharma companies understand the changes and influence of HTA on the pricing process.

**Sources**


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M&A activity in India’s pharmaceutical industry continues to rise

Over the last few months there has been a surge in large outbound transactions driven by the zest to acquire scale and reach in the global market.

In a recent outbound deal, Intas agreed to buy Actavis UK Ltd and Actavis Ireland Ltd from Teva Pharmaceutical Industries Ltd for an enterprise value of approximately US$773 million in an all-cash transaction. The acquisition will expand Intas’ UK manufacturing presence with the addition of the Barnstaple site in North Devon, and will more than double Intas’ pan-European operations. The deal will also increase Intas’ access to UK and Irish retail and hospital markets. Additionally, last year, Lupin Ltd acquired New Jersey-based Gavis Pharmaceuticals Llc and its affiliate Novel Laboratories Inc. for US$880 million in a bid to expand its presence in the US generics market. Deals like these will help Indian companies tap into manufacturing and marketing capabilities in Western markets, particularly the US and Europe.

There have also been deals to acquire new products and strengthen product portfolios, for example, Piramal Enterprises acquired five injectable anaesthesia and pain management products of Janssen Pharmaceutica for about US$175 million. This will include the acquisition of the brand names and all related IPs associated with the products, including the know-how to make both the active pharmaceutical ingredients and finished dosage forms. This deal will help Piramal leverage greater value for customers. Similarly, Lupin acquired a portfolio of 21 generic brands from Osaka-based Shionogi & Co. Ltd for US$150 million, to strengthen its presence in Japan’s pharmaceutical market.

Looking inward, China’s Shanghai Fosun has acquired 86% stake in Gland Pharma for US$1.4 billion. This deal will bolster Fosun’s capabilities in injectable, and expand its manufacturing network in India.

Key outbound deals in 2016

<table>
<thead>
<tr>
<th>Acquirer</th>
<th>Target</th>
<th>Value (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Intas</td>
<td>Actavis</td>
<td>773 mn</td>
</tr>
<tr>
<td>2. Lupin</td>
<td>Gavis</td>
<td>880 mn</td>
</tr>
<tr>
<td>3. Piramal</td>
<td>Janssen (5 Products)</td>
<td>175 mn</td>
</tr>
<tr>
<td>4. DRL</td>
<td>Allergan (8 Products)</td>
<td>350 mn</td>
</tr>
<tr>
<td>5. Lupin</td>
<td>Shionogi &amp; Co (21 generics brands)</td>
<td>150 mn</td>
</tr>
<tr>
<td>6. Cipla</td>
<td>InvaGen Pharmaceuticals and Exelan Pharmaceuticals Inc</td>
<td>550 mn</td>
</tr>
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With an increase in the pace of consolidation across the global generics markets, technology disruption and a desire to be closer to customers, will lead to the likely increase in outbound transactions in the near future.
Taiwan unveils new biotech development strategy

Taiwan’s Executive Yuan (cabinet) on 10 November 2016 approved a new strategic initiative to promote innovation in the domestic biomedical industry. The project, which is budgeted at NT$10.9 billion (US$346 million) for next year, is part of the government’s efforts to further advance its “five-plus-two” innovative industries policy and establish Taiwan as a centre of biotechnology and medical R&D in Asia.

The biomedical promotion plan, which will be overseen by the Ministry of Science and Technology, aims to boost the annual value of Taiwan’s biomedical industry to NT$1 trillion (US$31.3 billion) by 2025. This includes the goals of establishing 10 biotech and health-related flagship brand companies, as well as releasing 20 new drugs and 80 niche medical devices in overseas markets, within the timeframe period.

A key undertaking is revising legislation to relax investment and talent recruitment regulations, provide new tax breaks and incentives for biotech companies, and ease restrictions on the development and production of new drugs and high-risk medical devices, among other proposals. Draft amendments to the relevant laws have been sent to the Legislative Yuan (parliament) for priority review and approval.

Other key objectives are the establishment of a north-south “biotech corridor” to link Taiwan’s three science parks in Hsinchu, Taichung and Tainan so as to maximise their research capabilities. Also, the government is looking to tap the international healthcare market, especially in Southeast Asia, as well as to develop precision medicine services, specialised clinics and health-related peripheral industries.

The promotion plan also encourages local businesses to acquire or form strategic alliances with high-potential international companies—such as small and medium-sized pharmaceutical companies, medical supply companies, distributors and service providers—and to develop foreign markets. The National Development Fund has established an industrial innovation fund to support such M&A activities.

PwC observations
Taiwan is regarded as one of the leading countries in Asia for biopharmaceutical investment, according to the Biopharmaceutical Competitiveness & Investment (BCI) 2016 Survey, so we anticipate the new biotech development strategy will attract further interest from international biopharmaceutical firms.

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Senate enquiry and Tax updates in Australia

Senate enquiry into corporate tax avoidance
The Senate has agreed to the Senate Economics References Committee’s recommendation that the Corporate Tax Avoidance inquiry be re-adopted in the current Parliament. The committee is now due to report by 30 September 2017. All correspondence and evidence previously received for this inquiry has been made available to the new committee.

Comments on the second Report which was delivered on 22 April 2016, can be located in the previous edition of Asia-Pacific Health Industries Newsletter.

The ATO released Country by Country reporting guidance
The Australian Taxation Office (ATO) has issued guidance on when it will grant an exemption from the Country-by-Country Reporting (CbC) requirements. The guidance material outlines the general principles and process for seeking an exemption from one or more of the three CbC reporting requirements (CbC Report, Master File, Local File).

The ATO’s approach represents its transitional administrative practice until the planned 2020 review of CbC reporting. By way of background, Australia’s CbC law requires ‘significant global entities’ (broadly, those entities with annual global income of at least AUD 1 billion or that is part of a group with annual global income of at least AUD 1 billion) that are Australian residents or foreign residents with an Australian permanent establishment to submit these CbC statements annually for years beginning on or after 1 January 2016 unless the Commissioner of Taxation provides an exemption. Multinational pharmaceutical companies (and their local company or permanent establishment) should review the guidance issued by the ATO if an exemption from the CbC requirements is being considered.

Although any request for an exemption from these rules is to be considered by the Commissioner on its merits having regard to all relevant facts and circumstances and having regard to the purpose of CbC reporting, the ATO guidance materials consider a number of factors that are relevant to the determination. Specifically, the Commissioner indicates that he will consider the following:

- whether you are currently subject to a risk review or audit (active compliance product)
- whether you have IRPDs with entities in ‘specified countries’ listed in the IDS instructions that most closely correspond to the relevant reporting period(s)
- any other factors that he considers relevant.

For exemption requests relating to the CbC report or master file, the guidance indicates that the Commissioner will also take into account additional factors such as whether:

- your global parent entity is subject to CbC reporting in its country of tax residence
- your global parent entity has been granted an exemption in its country of tax residence from providing the CbC report or master file and, if so, the reasons the exemption was granted
- your global parent entity is required to prepare a master file in its country of residence
- there is minimal likelihood of Australia being obliged to automatically exchange your CbC report with another jurisdiction.

For example, this may be the case if you do not have foreign tax resident entities consolidated for accounting purposes, or you do not carry on a business through a permanent establishment in another jurisdiction.

Second year - annual corporate tax transparency report
The Commissioner of Taxation is required to annually publish certain tax information for all corporate tax entities (companies and other entities taxed in a similar manner to companies) with total income of at least AU$100 million (as disclosed in its income tax return), except Australian-owned private companies with total income of less than AU$200 million.

In preparation for its second year of application, the Australian Taxation Office (ATO) plans to shortly send letters to affected entities to verify the tax information that it will extract from 2014-15 Company tax return and amendment requests (if any) processed by the ATO before 1 September 2016 for purposes of publishing the relevant data for all entities by the end of this calendar year.

In relation to income tax matters, the ATO will publish the following information based on the entity’s income tax return:

- Name
- Australian Business Number
- Total income for the year
• Taxable income (if any) for the income year
• Income tax payable (if any) for the income year.

Entities that are subject to resource rent tax will also have their Minerals Resource Rent Tax or Petroleum Resource Rent Tax liability published as well.

In spite of the above, some entities and organisations have chosen to provide further information and explanation about their tax affairs in their financial or tax reports and/or on their own websites. In this regard, the Board of Taxation has developed a Voluntary Tax Transparency Code as a set of principles and ‘minimum standards’ to guide disclosure of tax information by businesses.

**R&D tax incentive rate cut**
The Budget Savings (Omnibus) Bill was introduced into the House of Representatives on 31 August 2016 and has since completed its passage through Parliament with amendments, and subsequently received Royal Assent on 16 September 2016. The measures included in this Act give effect to some of the Australian Government’s budget savings agenda.

In relation to taxation matters, the measures adopted by this Act include the reduction in the rates of the Research and Development (R&D) tax offset with effect for income years starting on or after 1 July 2016. Specifically, for the first AU$100 million of eligible R&D expenditure, the relevant R&D tax offset rate is reduced by 1.5 percentage points so that the higher rate of the tax offset (refundable) is reduced from 45 per cent to 43.5 per cent and the lower rate of the tax offset (non-refundable) is reduced from 40 per cent to 38.5 per cent.

With the review of the R&D Tax Incentive not yet finalised, the above rate cut could be viewed as somewhat premature. The above rate cut is a hit for the pharmaceuticals and biotech industries that generally heavily invest in R&D with the potential to undermine the Government’s innovation and science agenda.

**Review of R&D tax incentive**
The report from the review of the R&D Tax Incentive was released by the Minister for Industry, Innovation and Science for consultation on 28 September 2016. The review panel found that while the R&D program is an important investment in a prosperous future for Australia, it falls short of meeting its stated objectives. Six recommendations were made by the panel to improve the overall effectiveness and integrity of the programme while encouraging additional R&D.

The Government is calling for submissions on issues raised in the report by 28 October 2016, and is expected to release its response in the second wave of the National Innovation and Science Agenda, due by March 2017.

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Business implication of Big Data and analytics for the health industries

The ability to access, analyse, and manage vast volumes of data has long been critical to pharmaceutical and med-tech companies as they improve business efficiency and performance. While accelerated drug development that drives improved drug pipelines and more complete clinical trials and the ability to predict failure early remain keys to success, better analysis of patient adherence and improving time to market for new drugs helps to maximize overall profitability. Big Data solutions help improve the efficiency of the drug discovery and development process.

With this in mind, the big data revolution is in its early days, and most of the potential for value creation is still unclaimed. But it has set the industry on a path of rapid change and new discoveries; stakeholders that are committed to innovation will likely be the first to reap the rewards. It is imperative for any organization to formulate a well-defined strategy for its Big Data implementation to ensure alignment with its business objectives. Rather than focusing on technology, Big Data initiatives should begin by addressing how it will help your organisation achieve its business objectives, whether improving efficiencies, increasing margins, or attracting a deeper share of wallet.

What Digital Survey implied

PwC regularly undertakes a Digital Survey and in 2015 undertook the 5th annual survey across nearly 2000 executives. We call the term the “Digital IQ” as a measure of how well companies understand the value of technology and weave it into the fabric of their organization.

The results were quite interesting in that

- 78% Digital IQ respondents see the most promise in third-party data,
- 70% in cloud application data (70%),
- 69% in social media data (69%),
- and 64% in location-aware data

These results would tend to indicate that companies are looking outside their own business for their big data sources and trying to understand how they can use this to connect more to the consumer. It is no surprises as well that 62% of the business and technology executives that responded believe that Big Data has big potential. The question then becomes: if so many believe there is such potential, what are companies doing about it?

Current usage of data and their value for different players in the industry

From one of our PwC Global Data and Analytics surveys we can see where the current state of the pharmaceutical industry is, to where it wants to be.

Pharmaceutical and med-tech companies indicated that they currently use data around 30% of the time as descriptive, 40% of the time as diagnostic, 25% of the time as predictive and only 10% of the time as prescriptive.

And there is value for all players through the use of big data and analytics.

- For the payer - Enlightening of patients and improvement of adherence resulting in reduced medical expenditure by providing early intervention to prevent a more serious medical episode.
- For the providers - Improving quality of diagnosis and treatment resulting in improved efficacy of treatment
- For manufacturers - Developing of new product/service based on data to build strong brand and maximise the value of products

With this in mind though, companies will need to develop a range of big-data capabilities which can conduct different levels of analysis with diverse complexity, moving from the traditional and simple reporting to describe “what has happened” such as safety issues of product to prediction and simulation of what will happen with certain changes through patients clinical pathways.

PwC observations

Pharmaceutical and Life Science companies should look to how they will integrate and connect their existing systems with new digital technologies and merge the data locked inside them to generate meaningful, actionable insights for caregivers. In the new digital health era, digitally enabled services are no longer going to be a nice-to-have, but rather a fundamental business imperative. Industry leaders across providers, insurers, medical technology and the pharmaceuticals all see major shifts in how care is being delivered. Digital technology has the potential to bridge time, distance, the affordability and the expectation gap between consumers and clinicians.

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Bio Taiwan 2016: Asia Bio-Tech industry annual event

Big Data Forum focused on Digital Healthcare

The Bio Taiwan 2016 expo took place on 20-24 July in Taipei, Taiwan. This five-day event covered a two-day BioBusiness Asia Conference (BBA), one of Asia’s leading annual business-focused biotech gatherings.

One of the BBA sessions focused on big data and digital healthcare. Chris Norton, PwC’s digital health and big-data analytics expert, was invited as one of five speakers from the pharma and med-tech industry to share his views and experiences in digital technology and data analytics in the Asia Pacific region.

The big data session included three hours of presentations, insights from international experts, and discussions on the global market trends as well as practice examples inside and outside of Taiwan. Key highlights included:

- Approx. 1,000 people attended the Big Data and Digital Healthcare Forum and were exposed to PwC branding and presentation/panel sessions
- Approx. 8,300 people viewed the PwC Big Data Forum Facebook page moderated by Chris Norton.

Key Big Data transformation challenges

The development of new approaches to big-data analytics, which reinforce the use of clinical data in different settings are key enablers for the more digital-based applications. Given the complexity and resource intensive nature of the process to develop big-data based decision making processes, the significant challenges to transforming business models include:

- Establishment of cloud computing systems to manage data more effectively
- Enhancing protection of individual data to reduce the security risk
- Working with different stakeholders to collect and analyse the medical records of patients in various hospitals and clinics to find the best treatment option
- Securing digital talents to establish a viable and sustainable business model in order to bring in more innovation.

To overcome these challenges - researchers, clinicians and managers from around the world have collaborated and shared their experience pertaining to patient and population needs and the information and communications technology needed to make big-data based innovation a reality.

Click here to view the Bio Taiwan website to see a highlights video of Bio Taiwan 2016 as well as preliminary details of the next expo which will be held from 28 June to 2 July in Taipei.

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PwC Asia-Pacific: People Update

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Zubin is a Director in PwC Southeast Asia Consulting and leads the healthcare consulting team in the region, while remaining a practicing clinician with an interest in orthopaedics. With almost 20 years of experience in health, prior to working with PwC, Zubin’s career in healthcare provision, from a surgeon’s standpoint, has included working in both the public and private sectors across continents, including cities like Dublin, Oxford and Singapore. This has allowed him to gain experiences globally that help provide his clients insights that assist in solving their most complex challenges. Zubin has extensive experience in Digital Health, Medical Education, Health Tech and Med Tech, and is a Consultant, Advisor and Mentor to a number of start-ups and individuals in these spaces, both locally as well as internationally. Having published extensively over the last decade—with more than thirty publications to his name, including being an invited author for Economic Times—Zubin continues to write actively.

Relevant experience:

• Advised and led development, trialling and implementation of Singapore’s first digital health (including telemedicine) and secure messaging platform for healthcare professionals at departmental level for one of Singapore’s largest public hospitals.

• Provided clinical expertise for a multi-regional market analysis and digital health strategy development plan for a global medical imaging, and information technologies company, across Singapore, India, Philippines, Kenya and South Africa.

• Participated in a market assessment by advising on the potential for a national digital health market maturity and commercialisation model with a focus on supporting the identification of a market entry strategy and partner.

Digital Health & Big Data expert

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Chris is a Director based in the Brisbane Health Consulting team. As senior member of PwC’s Australia, South East Asia and New Zealand Consulting practice, Chris leads healthcare consulting teams in the region – working with private and public sector clients- to solve their most complex challenges. Chris has extensive experience in operational productivity and efficiency, health service planning, digital healthcare, project management and change management. Chris has 17 years’ experience in the Health Care Sector and is a qualified registered Nurse. Prior to working with PwC, Chris has worked in frontline clinical delivery and hospital executive roles. Chris has two Master Degrees in Health Service Management and Nursing, and is a qualified PRINCE 2 and MSP Practitioner.

Relevant experience:

• Digital Healthcare Strategy – Global Medical Device Company (India, South Africa, Kenya, Singapore, Philippines)

As the project director for the digital healthcare strategy, Chris oversaw the project, including market research, clinical interviews, digital disruptor scanning and strategy development across the five countries of India, South Africa, Kenya, Singapore and Philippines.

• Digital Healthcare in Emerging Markets – Private Hospital and Technology Vendor (Indonesia, Thailand & Philippines)

As the project director for the digital healthcare in emerging markets project, Chris led a team in the development of a detailed market assessment to analyse the use of digital healthcare technology in emerging markets of South East Asia.
New publication: Digital Health

Australia can see further by standing on the shoulders of giants

Driving digital transformation by adopting ‘Meaningful Use’ legislation

In 2015, there was only one digital hospital in Australia and New Zealand. In comparison, the United States had 1,414. The health sector in Australia isn’t just lagging that in the US, it is also lagging other sectors within Australia. It is many years behind sectors such as financial services in engagement, interactivity and access, and in urgent need of transformation and digitisation.

The US Meaningful Use Program, whilst having had its challenges, has achieved good results in adoption and improved information at the point of care. Australia is well positioned to learn from both its successes and its mistakes.

Digital service delivery underpinned by affordable Meaningful Use principles would provide a platform for innovation and a more seamless, integrated, effective, responsive and mobile healthcare system.

It is rare in public policy to find clear “win-win” options – even more so in highly complex areas such as healthcare. Meaningful Use offers Australia precisely those options: wins for patients and providers, wins for the State and Commonwealth governments, and wins for taxpayers and citizens.

The sooner that we make a commitment to change, the sooner these benefits will be able to be realised for healthcare providers, front line clinicians, funders and above all, patients.

Download PwC’s report to learn more:

PwC Asia-Pacific: people update

Digital Health Centre of Excellence Lead

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He is the lead partner for Digital Health for Australia and the Asia-Pacific region.

Richard was the CEO of UnitingCare Health in Queensland, where he led the development and opening of Australia’s first fully integrated digital hospital – St. Stephen’s hospital in Hervey Bay, Queensland. He chaired a 3 person review panel at the Personally Controlled Electronic Medical Record for the federal government in 2013 and during 2016, worked for the Federal Health Minister to establish the Australian Digital Health Agency as the organisation responsible for leading digital health initiatives for Australia.

Richard also currently chairs the Commonwealth Science and Industrial Research Organisation (CSIRO) Australian eHealth Research Centre based in Brisbane.

Through our various engagements for both private and public clients, PwC Australia has a solid understanding of the country’s development in ehealth. We hope to continue to help lead the innovation and integration of technology in digital health in markets across the Asia-Pacific region.

For more details including the past publications, please visit PwC Australia website.
**Recent Healthcare publications:**

**Healthcare reform: Why the stars are finally aligning** (2016) - October

In Australia, the conditions for genuine healthcare reform appear to be emerging. This report discusses how environmental factors, combined with more powerful and integrated technologies are creating opportunities to significantly improve Australia’s healthcare system.

**Beyond 2020: building strategic coherence in the New Health Economy** (2016)

The competitive landscape for pharmaceutical and life-science companies around the world is changing rapidly, and those shifts are likely to accelerate. These changes require a new strategic approach. We contend that strategy requires distinct capabilities, meaning a specific focus, expertise and set of skills that can position a company ahead of its competitors.

**Asia-Pac Health Industries Newsletter (2016) - August issue**

In August issue, the topics included health industries update in Australia which covered Health Economics Update and Digital Health as well as Brexit Impact for the pharma industry in the Asia-Pacific Region, in addition to usual topics: accounting, Pricing, M&A, as well as Regulatory in the Asia-Pacific Region.

**Asia-Pac Health Industries Newsletter (2016) - April issue**

In April issue we included articles ranging across activities in Health and Safety in New Zealand and healthcare industry in Malaysia, as well as regular topics around tax, accounting and pricing within the Asia-Pacific region.

**Asia-Pac Health Industries Newsletter (2015) - December issue**

In December issue we highlight a number of developments that are of direct interest to Pharmaceutical companies and healthcare organisations including BEPS updates in Asia, result of biennial pharma Survey in Australia, Japan’s pharmacovigilance regulatory affairs, and patients experience in India, along with our regular topics such as Pricing, M&A and Tax.

**Challenges and Change**


This is PwC's fourth survey of the Australian pharmaceutical industry, and the second in conjunction with Medicines Australia. In recent years, the Australian pharma industry has been characterised by a more competitive market; significant advancements in technology; and constrained budgets. The report explores the industry’s key challenges, trends and opportunities.

**Other publications:**

These and other publications can be found on PwC’s Pharmaceuticals & Life Sciences and Healthcare websites at [www.pwc.com](http://www.pwc.com).
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As a global leader serving Pharmaceutical and Life Sciences companies, PwC has extensive experience working with organisations across the industry, including: proprietary and generic drug manufacturers, specialty drug makers, medical device and diagnostics suppliers, biotechnology companies, wholesalers, pharmacy benefit managers, contract research organisations, and industry associations. We have aligned our practice with the broader health industries market to ensure that our people are well versed in the relationships between suppliers, providers, payers, and customers.

Visit us at www.pwc.com/pharma and pwc.com/healthcare

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