

# IT IN HOSPITAL AUTHORITY

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IT Career Role Models Platform

23 Nov 2017

Mr. Watson Tsui

SSM(CSD), Hospital Authority Hong Kong

# Hospital Authority

- Established : **1 Dec 1990** (\$53B budget for year 2015-16)
- Staff: **~70,000**
  - Medical : **~6,000**
  - Nursing : **~24,000**
  - IT : **~1,200** (includes HA terms and Technical Outsource Assistant)
- **7** Hospital Clusters
  - **42** public hospitals and institutions
  - **47** Specialist Out-patient Clinics
  - **73** General Out-patient clinics
- In-patient Bed : **~27,000**

# HA IT & HI Division

- **IT** : Information Technology
  - Mainly IT specialist
  - Responsible for application design, development and operations
- **HI** : Health Informatics
  - Doctors, nurses, allied health and other professionals
  - Responsible for collecting, translating and managing requirements

# Our Mission

- To **Improve patient care service quality, increase HA productivity** and delight our users via reliable and **innovative technology**

## Strategic Directions for 2017-22

### 1 Next Generation Clinical Management

- HA's care model transformation
- Efficiency improvement
- Clinical quality and risk management

### 2 Enhanced Patient Experience and Outcome

- Data-driven insights for better outcome
- Patient engagement
- Community collaboration
- Alignment to HK Smart City

### 3 Digital Workplace and Collaboration

- Mobile tools
- Staff collaboration
- Enhanced resource management
- Value-adding process

### 4 Advanced Process and Infrastructure

- Smarter IT services
- Advanced infrastructure
- More reliable and secure platform

### 5 Resource Centralization and Specialization

- Talent specialisation
- Learning culture
- IT for IT
- Better business alignment

# Functional Areas in HA IT

## Infrastructure Services

- ▶ Technical Platforms & Data Centres
- ▶ Network & Geek & IT Innovation Officer
- ▶ IT Security & Risk Management



## Business Development

- ▶ Business Support Centre
- ▶ Patient Billing & Revenue Collection System & Admin. System



## Clinical Development

- ▶ Clinical Management Systems
- ▶ Clinical Departmental Systems
- ▶ eHR Development



## IT Operation

- ▶ Clinical Systems Support Centre
- ▶ eHR Operation & Application Management
- ▶ Service Centre



# Some HA IT Development Milestones

- 1990 – “Green fields”
- 1991 – Patient Administration
- 1992 – Pharmacy System
- 1993 – Lab Results Online
- 1994 – Radiology information System
- 1995 – Clinical Management System (Medication Order Entry)
- 2000 – CMS Phase II (Electronic Patient Record (ePR))
- 2003 – eSARS
- 2004 – ePR Image Distribution
- 2006 – ePR sharing with private sector
- 2012 – CMS Phase III (In-patient Medication Order Entry)
- 2015 – Clinical Mobile Suite (iPad version)
- 2016 – Electronic Health Record Sharing Systems (Phase 1)

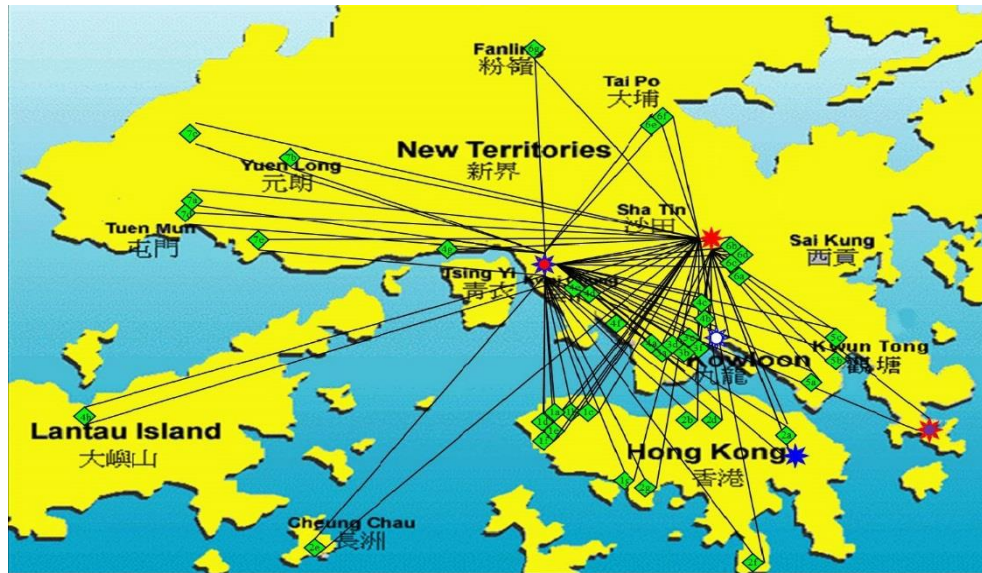


All of them  
are made in  
HK

# HA IT Achievements

- One of the Largest IT Employers in HK
- One of the Largest IT Infrastructure in HK
- One of the **Largest in-house design-built-run** hospital systems in the world





#### •HA IT Services 2016/17

- 5 Corporate Data Centers\*
- 17 Hospital Data Centers

### Electronic Transactions

CMS transactions	<b>11.0M</b> per day
ePR transactions	<b>2.1M</b> per day
OPAS/IPAS transactions	<b>0.9M</b> per day
Laboratory requests per annum	<b>26.8M</b>
Dispensing transactions per annum	<b>73.0M</b>
Radiology examinations per annum	<b>5.1M</b>
Financial transactions per annum	<b>162.4M</b>
HR/Payroll transactions per annum	<b>7.1M</b>
Procurement/SCM transactions per annum (including Drugs and Non-Drugs)	<b>23.7M</b>

### Network Infrastructure

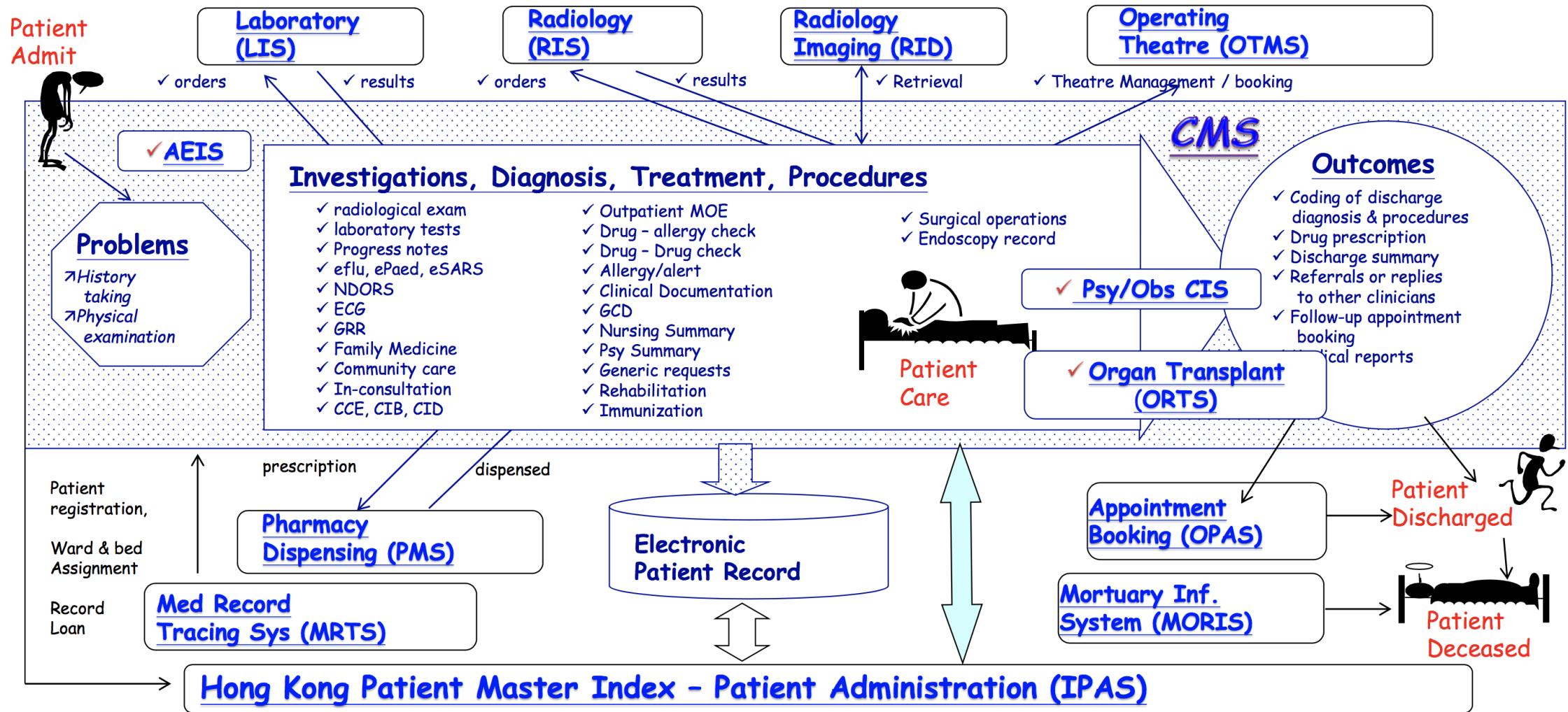
Desktop PCs	<b>49,000</b>
LANs / Wireless LAN Access Points	<b>3,120 / 4,615</b>
WAN Lines	<b>250</b>
Servers (Processors)	<b>1,680 (9,990)</b>
Data stored on the network	<b>4,232 Terabytes</b>

### Messaging

Intranet / Internet mailboxes	<b>65,100 / 51,900</b>
Intranet messages per month	<b>27.2M</b>
IN / OUT Internet messages per month	<b>837K / 952K</b>
Spam messages blocked per month	<b>5.4M</b>
Viruses / Attacks blocked per month	<b>267 / 150K</b>



# Clinical Systems – Patient Care Delivery Journey



# Awards

- (1999) IT Excellence Award - ECPATH LIS
- (2004) Informatica Insight Award - ePR Data Warehouse
- (2004) Stockholm Challenge – eSARS
- (2005) 4th Asian Hospital Management Award – AIRS
- (2005) APICTA - ePR ID
- (2005) IT Excellence Award - ePR ID
- (2007) HKICT Awards - PPI-ePR
- (2008) China Top CIO Award - China Top CIO
- (2011) HKICT Awards - Mortuary Information System
- (2012) HKICT Awards - HA e-learning Centre
- (2012) HKICT Awards - HA Community Health Call Centre
- (2012) HKCS Outstanding ICT Achiever Awards – ERP

HONG KONG ICT AWARDS 2007 香港資訊及通訊科技獎  
**Best Lifestyle Award Winners**  
 最佳生活時尚獎各獎項得主

**Grand Award 大獎得主**

PlayMotion Limited  
 柏萊媒體有限公司

PlayMotion Core  
 PlayMotion 互動光影

**Best Lifestyle (Health & Wellbeing) Award 最佳生活時尚 (健康生活資訊) 獎**

**GOLD AWARD 金獎**

PlayMotion Limited  
 柏萊媒體有限公司

PlayMotion Core  
 PlayMotion 互動光影

Hospital Authority

Hospital Authority Public Private Interface –  
 Electronic Patient Record Sharing Pilot Project  
 公私營醫療合作—醫療病歷互聯試驗計劃

醫院管理局

**Best Lifestyle (Free Living) Award 最佳生活時尚 (休閒生活) 獎**

**GOLD AWARD 金獎**

PCCW Media Limited

MOOV – The First Multi-Platform Digital  
 Music Service in Hong Kong

**2006-2007:**  
**The PPI-ePR project**

- PPI-ePR merit prize Asian Hospital management award AND
- Gold Award in Hong Kong ICT Award 2007 (to be announced in Jan 2008)

**2004: eSARS**

Winner of the Health Prize in the 2004 Stockholm Challenge

*“eSARS is the first large scale use of the Internet to help manage a public health problem”*

**Mike Ryan**  
 (Coordinator, WHO Global Outbreak Alert and Response Network)

**2005: AIRS**

- Adverse Incident Report System:
- Winner of Asian Hospital Management Award

HONG KONG ICT AWARDS 2011 香港資訊及通訊科技獎

The Hong Kong Institution of Engineers – Information Technology Division  
 香港工程師學會 資訊科技分會

**Hong Kong ICT Awards 2011:  
 Best Public Service Application (Transformation)**  
 香港資訊及通訊科技獎:  
 最佳公共服務應用 (電子轉化)

**Certificate of Merit  
 優異證書**

Hospital Authority  
 醫院管理局

Mortuary Information System  
 殮房資訊管理系統

**2004: ePR Data Warehouse**

**INFORMATICA**

- Best Single customer view solution in 2004 INFORMATICA Insight Award

IT Excellence Awards 1 March 1999

Certificate of Merit

APPLICATION

Awarded to

*Hospital Authority*

for

*Laboratory Information System (ECPath LIS)*

*Janella* Daniel Lai, President, Hong Kong Computer Society

*1 of Ki Chang* Prof H K Chang, Chairman, Panel of Judges

ORGANISER: Hong Kong Computer Society

SPONSORING ORGANISATIONS: Information Technology & Broadcasting Bureau, ITCAR Government, Industry Department, HK SAR Government

FUNDED BY: Industrial Support Fund

HONORARY AUDITOR: PricewaterhouseCoopers



## China Top CIO Award 2008



# Invitation to Prize Winners

Dear Mr. CHEUNG Ngai Tseung

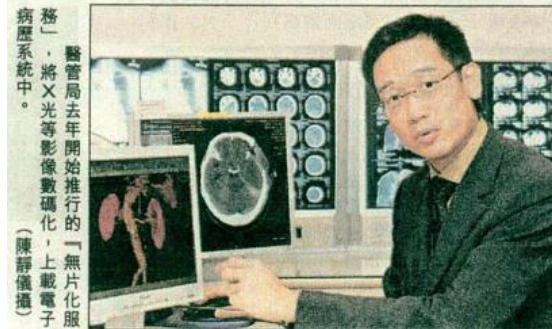
We have the honor to inform you that the judging committee of the “China Top CIO Award 2008” brought in a unanimous decision that you won the title of “China Top CIO” awarded by CEOCIO China magazine and IDC China.

The China Top CIO Award, hosted by *CEOCIO China* and the International Data Corporation has been held successfully for five years. The sixth ceremony

## 醫局X光片數碼化 獲IT銅獎

【本報記者邵瑞珊報道】影像數碼化已成趨勢，連醫院X光片也不例外。醫院管理局去年展開「無片化服務」，將X光片數碼化兼壓縮，再放送於電子病歷系統，可節省金錢、人手、時間及儲X光片的地方，還可方便醫生解構影像，對病人診治有好處；系統獲香港電腦學會比賽的應用銅獎。

以往將X光片等影像上載互聯網，檔案很大，需用強勁電腦系統支援；去年醫管局改用一套實惠方法，將影像壓縮數倍



至數十倍，再上載到電子病歷系統中，成本由傳統要2.3億元完成，大幅減少至2,000萬即可。

### 壓縮存電子病歷 減成本

醫管局行政經理（醫療）張毅翔指出，電子病歷包括影像放送，好處是縮短影像膠片在院內外傳遞的時間，減少人手傳遞需要，新系統亦可調校影像光暗大小，甚至可加上顏色及立體化，令醫生更清楚病人的異常結構，了解病況。

此外，影像數碼化後，可透過電腦觀看，毋須列印，可減省每張片約12元的成本；而片中含有銀等化學物質，毋須列印可減少產生化學物質，故亦更環保。

目前醫管局已為威爾斯、東區尤德、瑪麗、伊利沙伯及律敦治醫院的新增影像進行影像化工作，預計今年可再多完成3間，但由於此做法需要有關電腦軟件的支援，所以未能確定全港醫院的時間表。威院則於10個月前在專科門診開始做試點，效果滿意，期望在3年內可完成所有影像。

為推行公私營病歷共用，新界東醫院聯網預計明年初向全港數百名包括私家醫院的私家醫生進行共用電子病歷的試驗計劃。不過，由於部分私家醫生的電腦未購置所需軟件，故計劃只限文字及報告病歷。

Hong Kong ICT Award 2012

HA e-learning Centre wins Silver Award in Best Professional Development  
(Other Professional) Award

An Enabler for Continuous Learning and Effective Training Administration in HA



<http://elc> (intranet)

<http://www.ha.org.hk/haelc> (internet)

# Numbers tell vital role of IT team

IT 同事創下的數字

臨床醫療管理系統使用次數 約 **510萬** 次/每日  
**Clinical Management System transactions** Approx. **5.1m** per day



**Electronic Patient Record (ePR) transactions** Approx. **1.6m** per day  
 病人電子病歷記錄查閱次數 約160萬次/每日



綜合病人管理系統/專科門診預約系統登記數目  
 Integrated Patient Administration System /  
 Out-patient Appointment System transactions  
 Approx. **0.8m** per day 約80萬宗/每日



**化驗樣本檢驗要求**  
**Laboratory requests**  
 Approx. **23.4m** per annum  
 約2,340萬宗/每年



**Financial transactions**  
 Approx. 152.9m per annum  
**財務事項約 1.529 億宗/每年**



**Virus / Attacks**  
 Approx. **0.44m** per month  
 堵截病毒及駭客攻擊  
 約**44萬**次/每月



**堵截垃圾電郵**  
**Spam messages blocked**  
 Approx. **1.7m** per month  
 約170萬封/每月



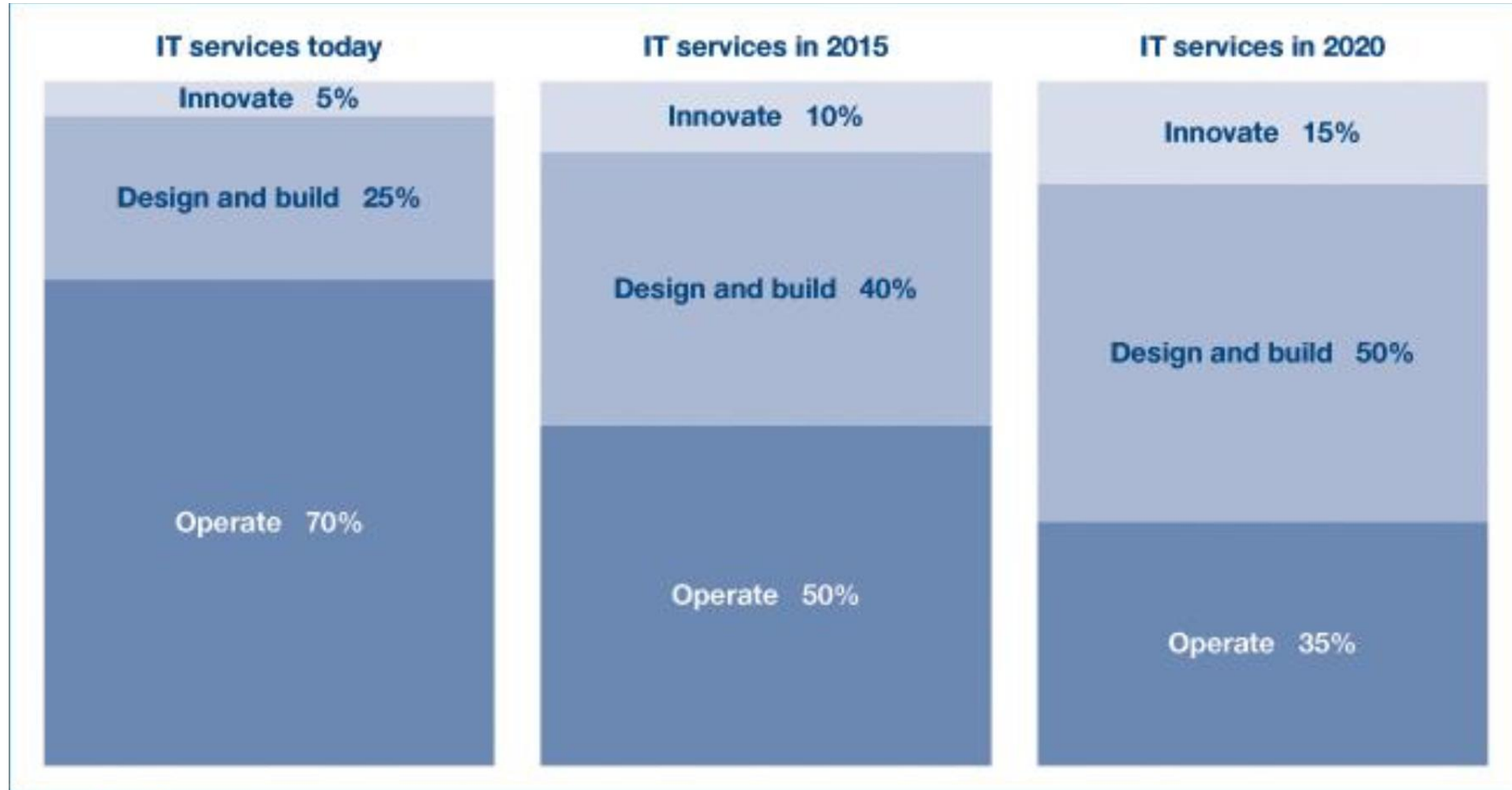
**採購 (包括藥物和非藥物)**  
 宗數約**2,020萬**宗/每年  
**Procurement transactions**  
 (includes drugs and non-drugs)  
 Approx. 20.2m per annum



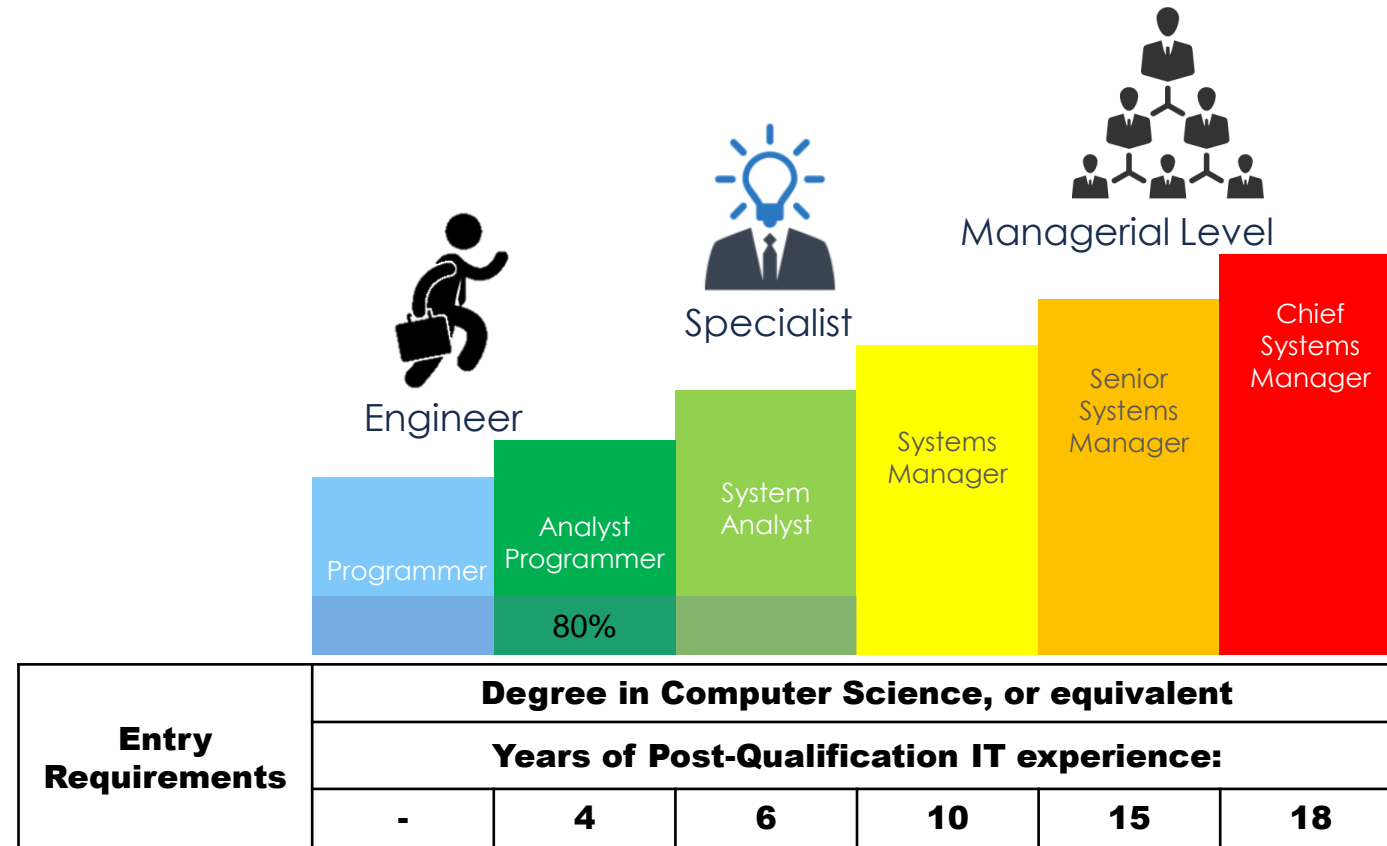
**Intranet messages**  
 Approx. 24.6m per month  
**傳送內聯網訊息**  
 約 **2,460 萬**條/每月



# We need more talents in Innovate, Design & Build



# Career Ladder in HA IT





# On Job Training

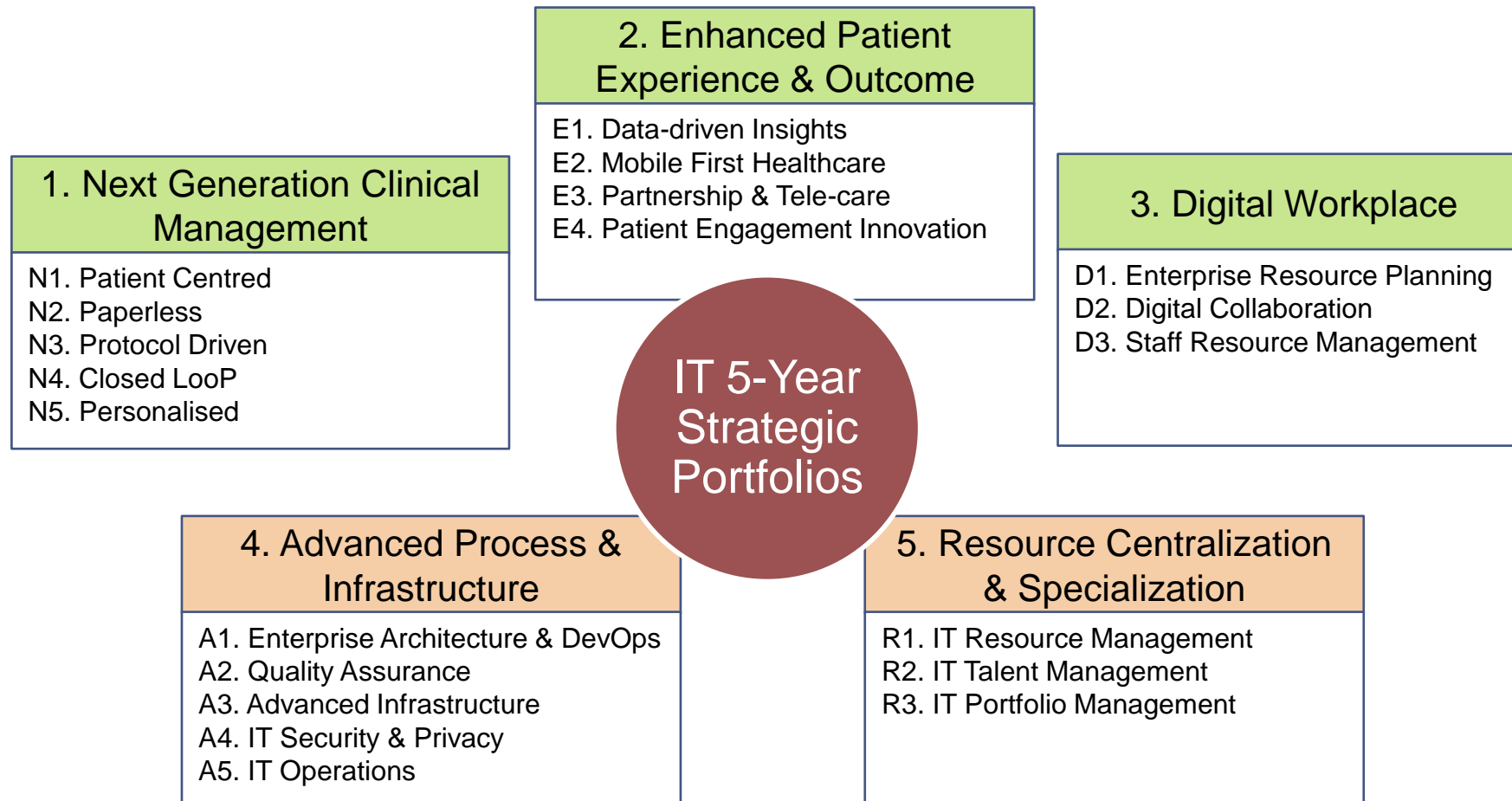
- Depending on job requirement, we may provide training in
  - Management
  - Infrastructure
  - Development
  - Operation
  - Quality Assurance
- We also send staffs to local and international conferences.



# Next 5 years (2018 – 2023)

- HA IT will start design and develop CMS IV

## Transforming HA Service Provision



# Opportunity in next 10 years

- +100 projects will be started in next 5 years; need developers
- Shifting desktop applications to mobile applications; need mobile expertise
- Big Data analysis; need more data scientist
- Retirement Wave; need new blood
- [Apply Here](http://www.ha.org.hk) ([www.ha.org.hk](http://www.ha.org.hk) → “Careers” in Eng. Content ► )

Need talents join HA IT

# Questions?

