

▶ AICS

醫院資訊系統平台化的重要性

Dr. Taiyi Huang
CVP & CTO



Challenges in Precision Medicine

Precision Medicine
Future

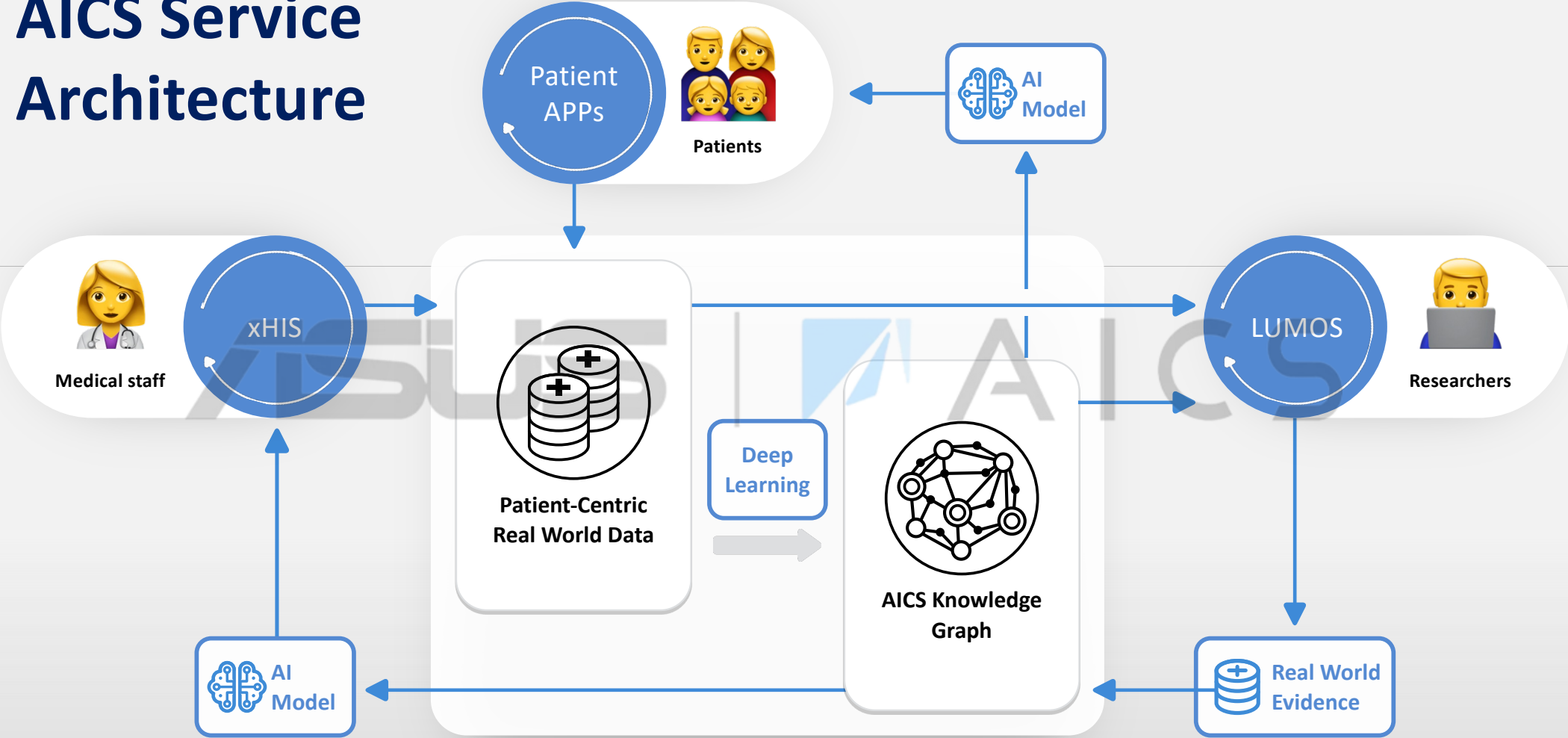
!!
Unscalable
Systems

!!
Fragmented
Data

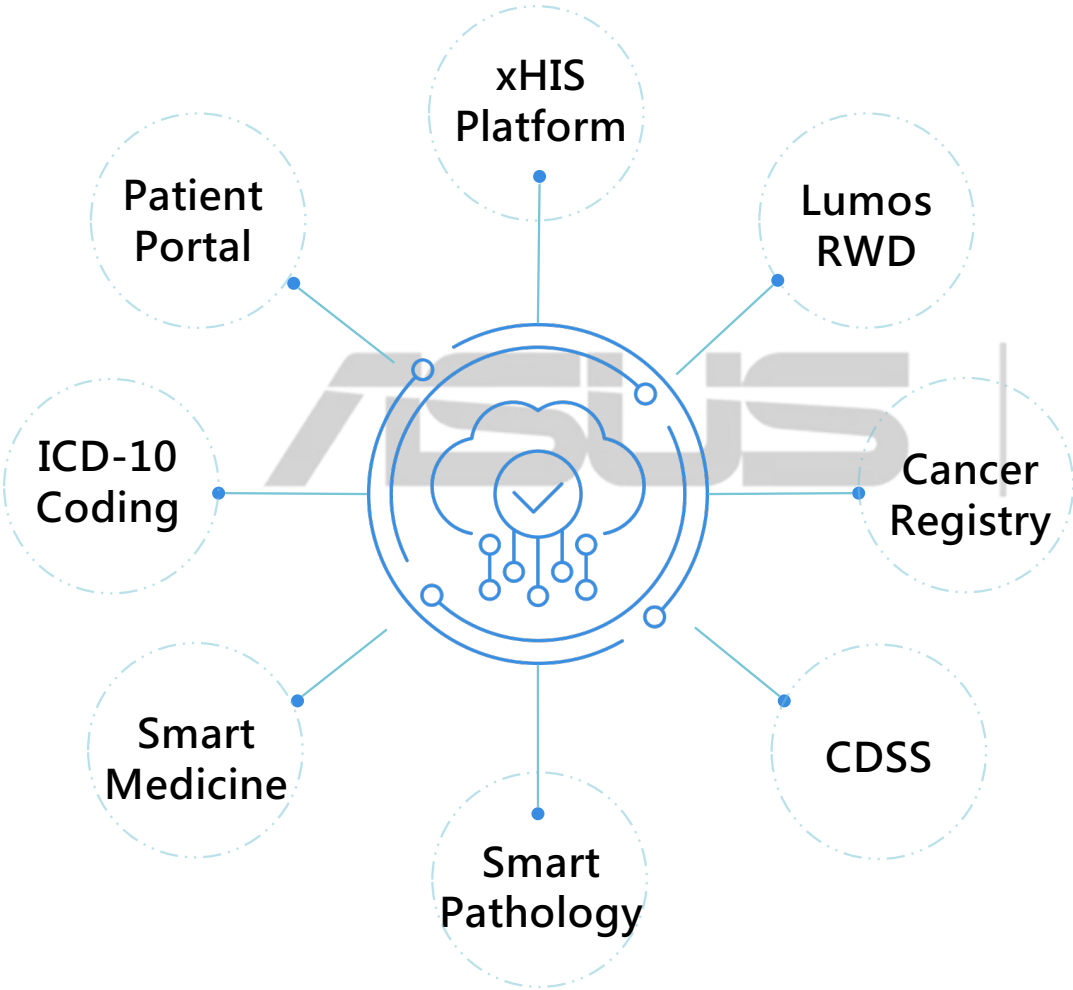
Healthcare Systems
Today



AICS Service Architecture



AICS Medical AI SaaS Services



20+ Strategic partnership with hospitals

8+ SaaS services

30k+ Active users/month

1M+ Service requests/month

10x Usage growth

850k+

85k+ 2020/8/E 2021/10/B

Profitable Software Business 101

Attract & Retain

Better Talent

ASUS



ICS

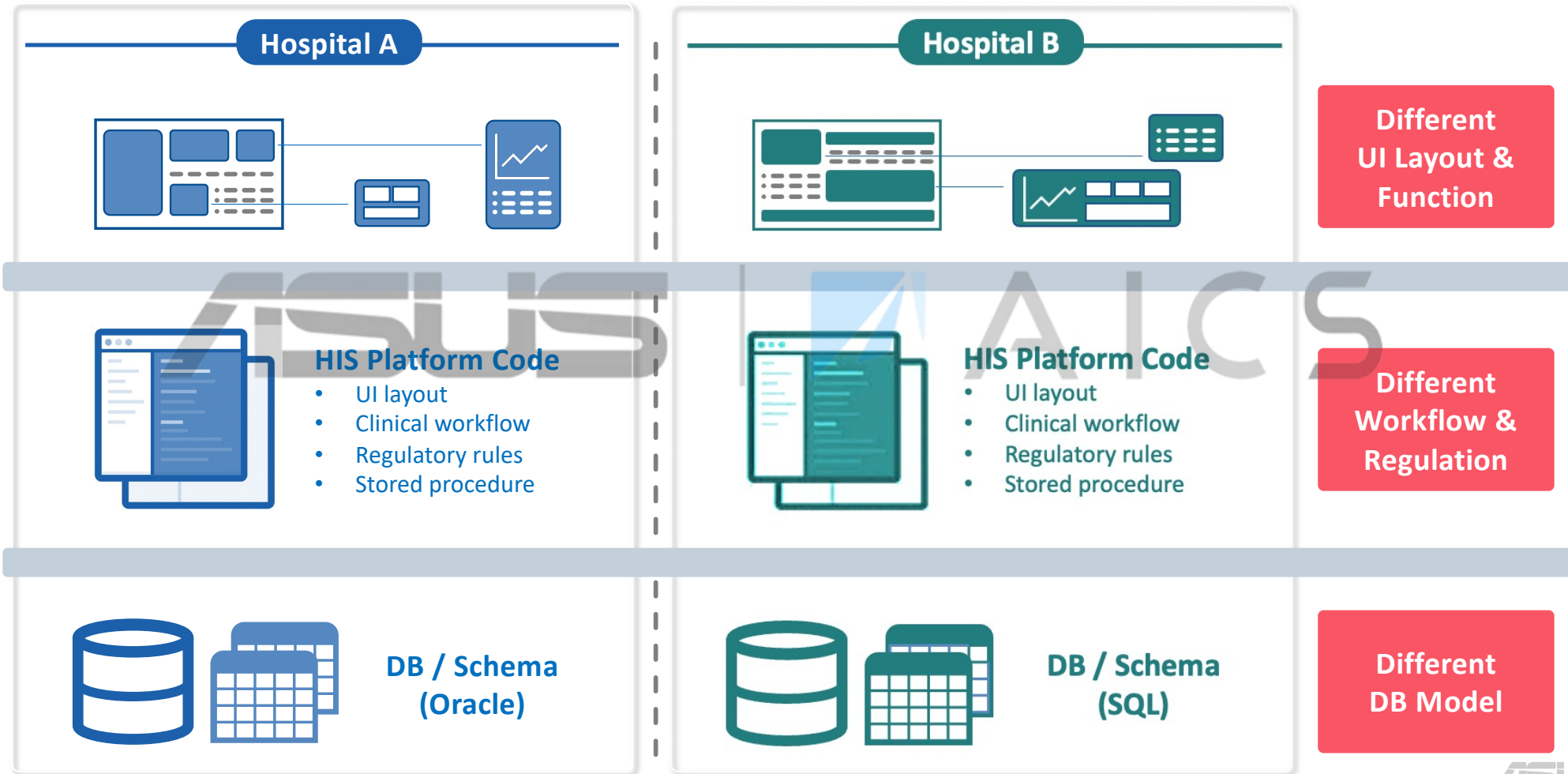
Design & Produce

Product Value

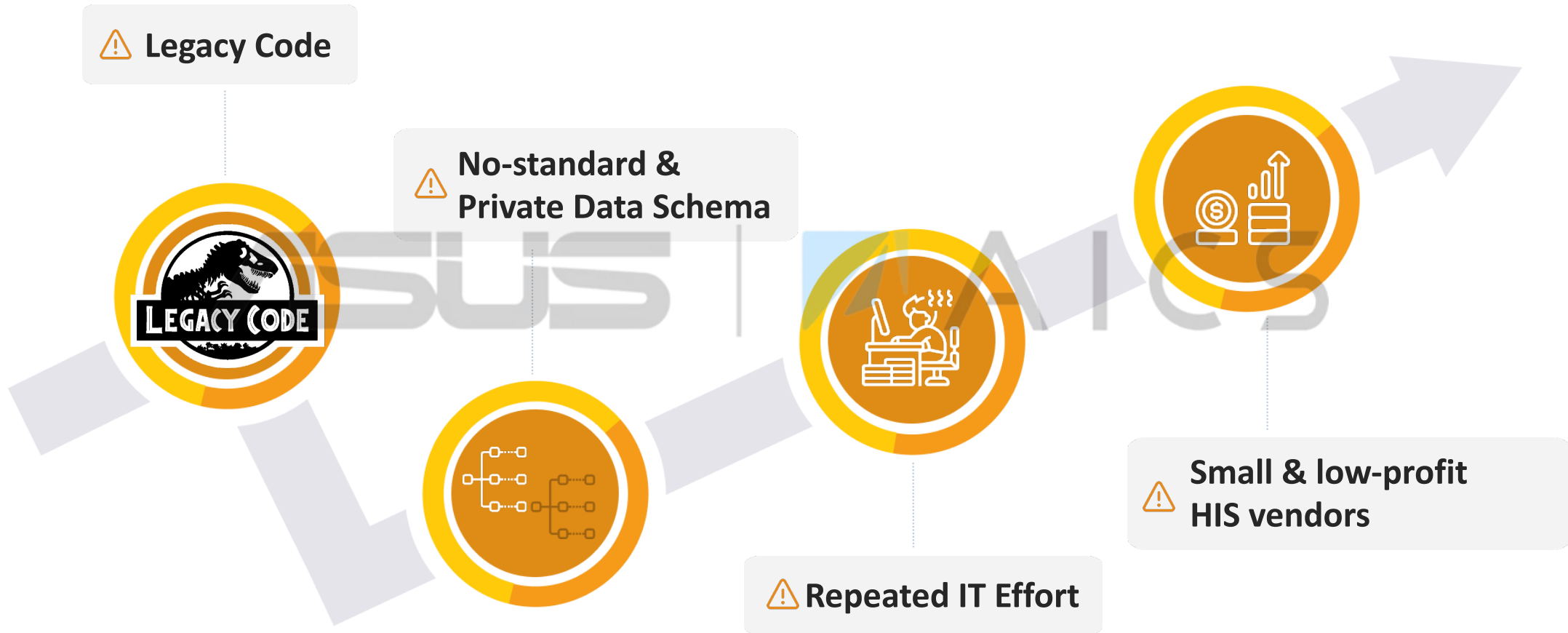
Create

High Profit

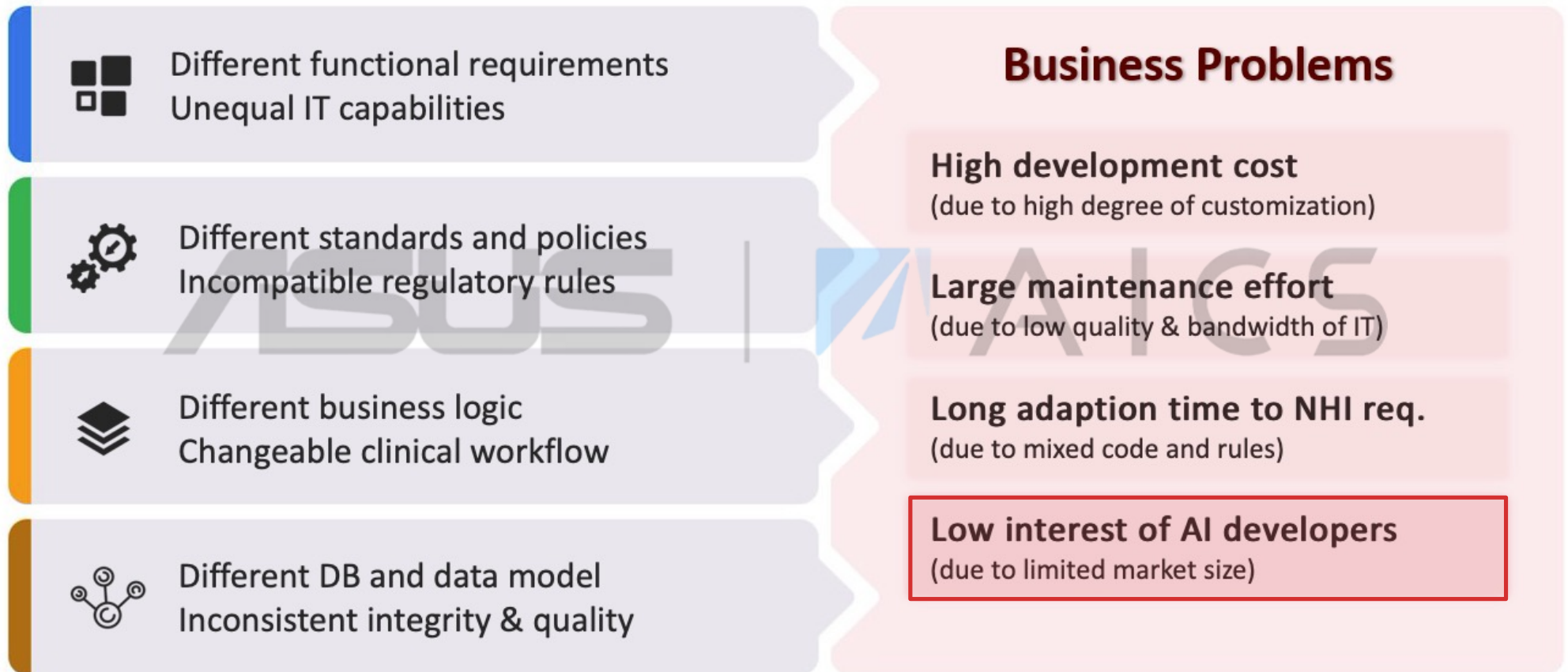
Taiwan HIS – Ugly Reality



Challenges in Taiwan HIS Business

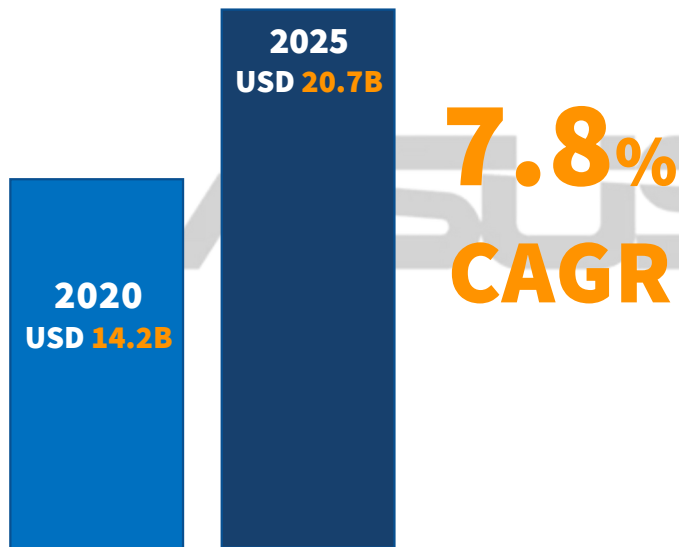


Poor Service Interoperability



Global EMR Market is Growing

Global Hospital EMR Market



MarketsAndMarkets 2020 Jun: Hospital EMR Systems Market



\$3.3B

Revenue in 2020

15%

YoY Growth since 2010

2,400

Hospitals Worldwide

225M

Patients in US

Top Institutes Using High Quality EMR Platform



Epic Platform Enable Diversified Applications



595

APPs Now

169

New APPs in 2020

42%

Administrative APPs

38%

Clinical APPs



Diagnosis & Treatment
of COVID-19



Comprehensive Post
Operation Reports



Telehealth
EHR Connector



Cancer Multidisciplinary Care

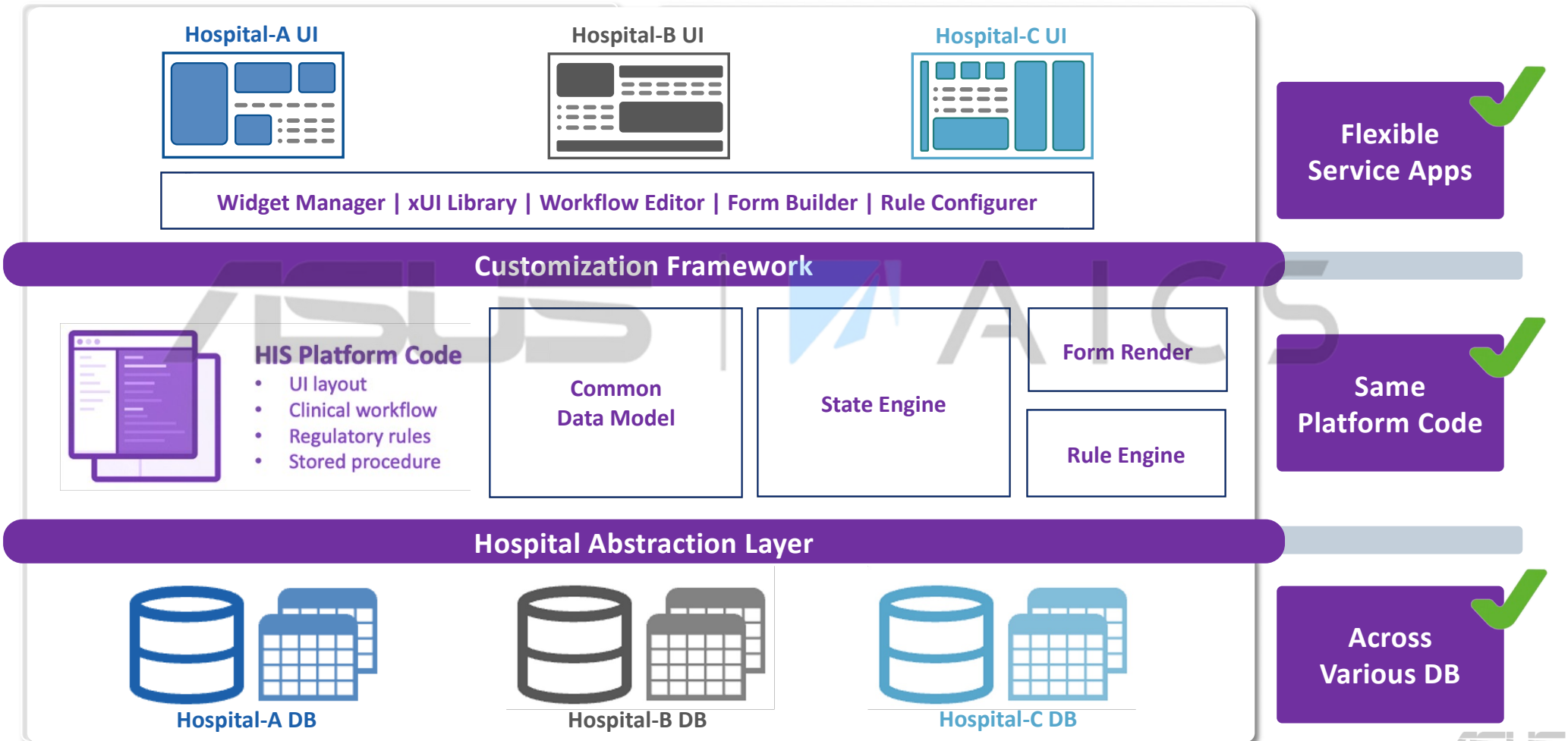


Pharmacogenomics &
Precision Oncology

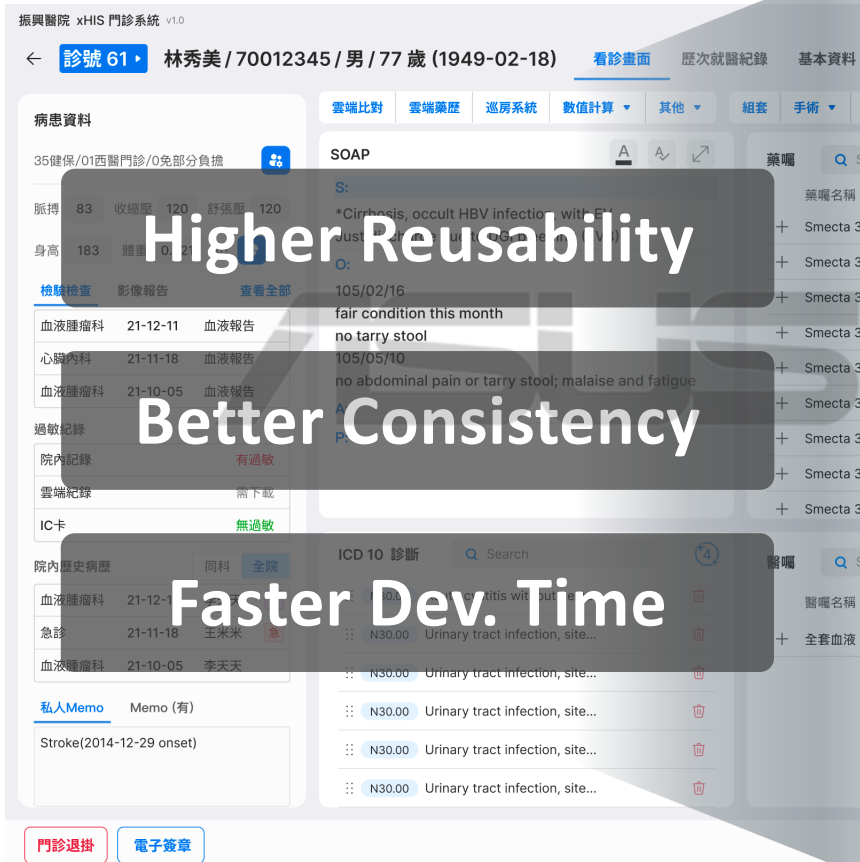


Register & Payment

AICS xHIS Bold Approach



Efficiently Develop Widget App

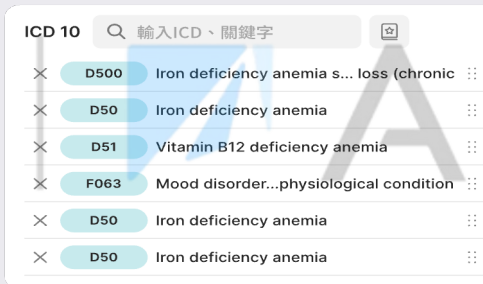


Widget Framework

UI Component



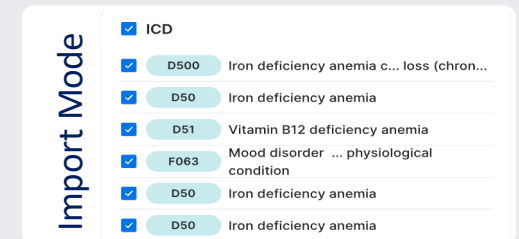
Widget



Page



Configurable Polymorphic Widget



xHIS 跨院平台化之路的開發挑戰

完整且共通的需求與規格

- 既有系統普遍老舊，資訊落差且無完整需求文件
- 規格（包含流程與稽核等）盤點不易且存在過時及隱藏邏輯
- 系統升級伴隨著流程再造的複雜，以及不同院所間 best practice 的建立

Problems

缺少完整臨床流程與稽核條件等規格文件 (資訊單位)

用藥安全 DDI 需強化示警 (藥學單位)

Challenges

需耗費長時間面試各單位並檢視程式碼但依舊無法有效產生細部規格

臨床醫師覺得太多示警反而會導致看診效率降低

新舊系統併行與資料同步

- 既有系統長時間累積的複雜資料表，衍伸出許多隱藏的資料邏輯
- 沒有共通的 coding & vocabulary 加深了資料整理的困難
- 新舊架構的不同與先天限制，導致舊資料庫更新同步時的負擔

Non-standard schema content

Hospital 1 schema

過敏反應分級	char(2)	"I" 輕微 "II" 中度 "III" 嚴重
--------	---------	-------------------------------

Hospital 2 schema

不良反應級數	char(1)	N default value: "" "1" 1級 "2" 2級 "3" 3級
--------	---------	--

xHIS DB Schema HL7 FHIR

Code	Definition
mild	Causes mild physiological effects.
moderate	Causes moderate physiological effects.
severe	Causes severe physiological effects.

Mapping: mild/moderate/severe

▶ AICS

Thank You !

