

Developing a business case

Stream 3 :

Financial case and realising returns on investment

Prof Robin Williams
The University of Edinburgh

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham **NHS**
NHS Foundation Trust

Acknowledgements

- Draws on roundtable discussions with NHS HEPMA adopters, suppliers and policymakers
- Analysed by project team: Kathrin M. Cresswell et al. (2013) *Qualitative Analysis of Round-table Discussions on the Business Case for Hospital Electronic Prescribing Systems*
- Early findings from our study – two early cases of HEPMA adoption in English hospitals)

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham 
NHS Foundation Trust

Justifying change

- Anticipated direct financial savings or proxies for these eg improved efficiency
- Other improvements such as safety
- Costs of implementation (or costs of achieving such improvements through other means)

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham **NHS**
NHS Foundation Trust

Business case core components

NHS Technology Adoption Centre. Business Case

<http://www.ntac.nhs.uk/HowToWhyToGuides/DopplerGuidedIntraoperative/Doppler-Business-Case.aspx>

- Strategic Context
- Case for Change
- Objectives
- Future Service Requirements
- Options Appraisal
- Capital Implications
- Revenue Implications
- Preferred Option
- Affordability
- Timescale and Deliverability
- Risk Analysis and Management
- Conclusions

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham **NHS**
NHS Foundation Trust

Different views of HEPMA

Terminology

- e-prescribing <> EPMA

Focus of project

- Pharmacy <> Hospital <> Health Service

Scope of IT system

- Stand-Alone System <> Integrated system

Strategic vision

- Support current activities <> Radical change
- System adoption <> Programme of change?

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham
NHS Foundation Trust

HEPMA supply-side

- **Bespoke Systems**

The first generation - cost of maintenance being replaced by packaged solutions

- **Packaged Applications**

- Standalone systems; extensions to discrete applications
- Modules within an integrated system
- Specialty systems eg Chemo

An 'immature market'?

- Products developing rapidly; foreign products being anglicised
- Large number of players: 14 / 18 still in English market
- Little UK implementation experience for most products
- Absence of some players
- Choice of supplier may become coupled with decision about scale and scope of project

NIHR Programme Grant for Applied Research



The University of
Nottingham

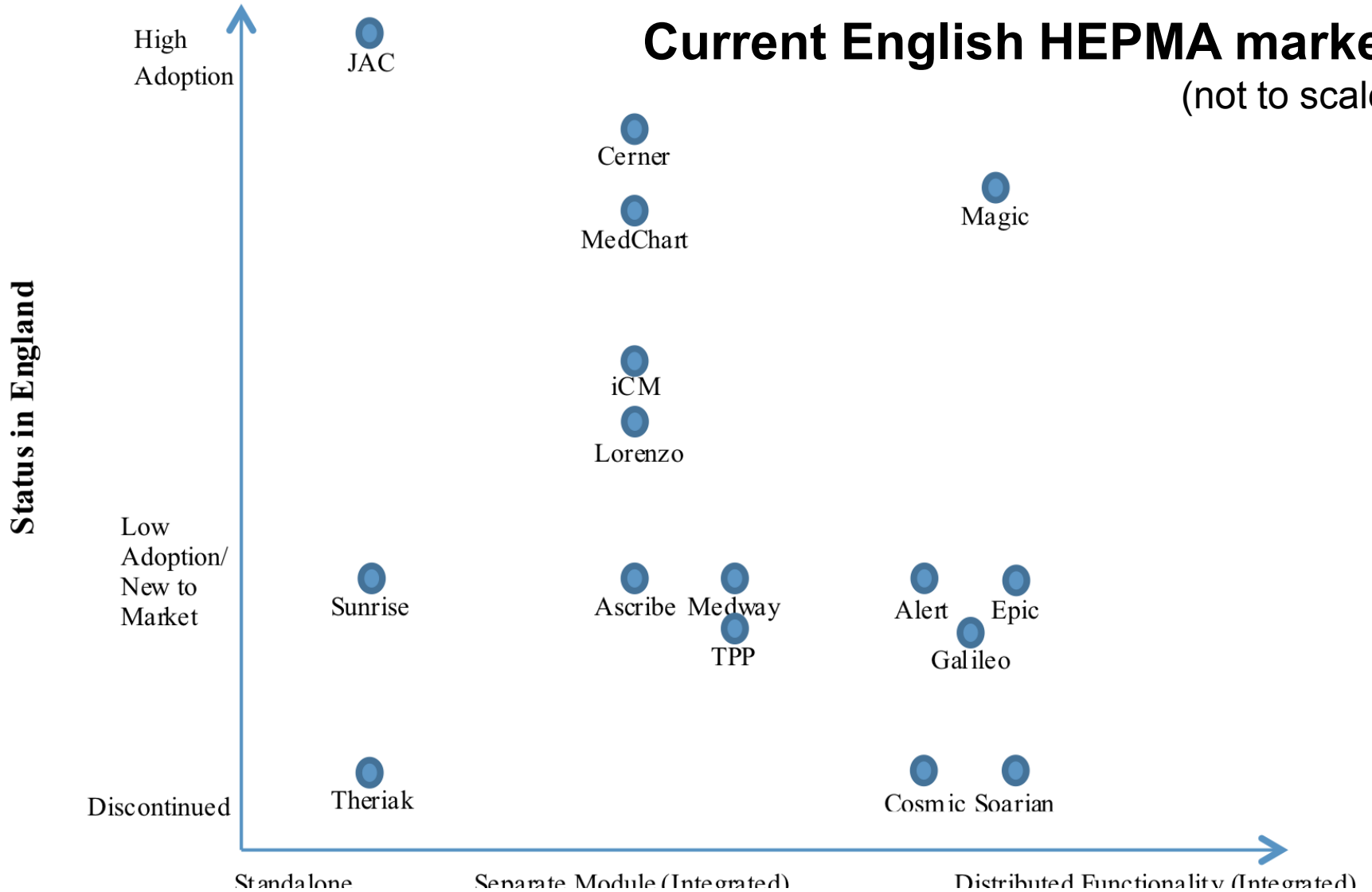


UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham
NHS Foundation Trust

Current English HEPMA market

(not to scale)



NIHR Programme Grant for Applied Research



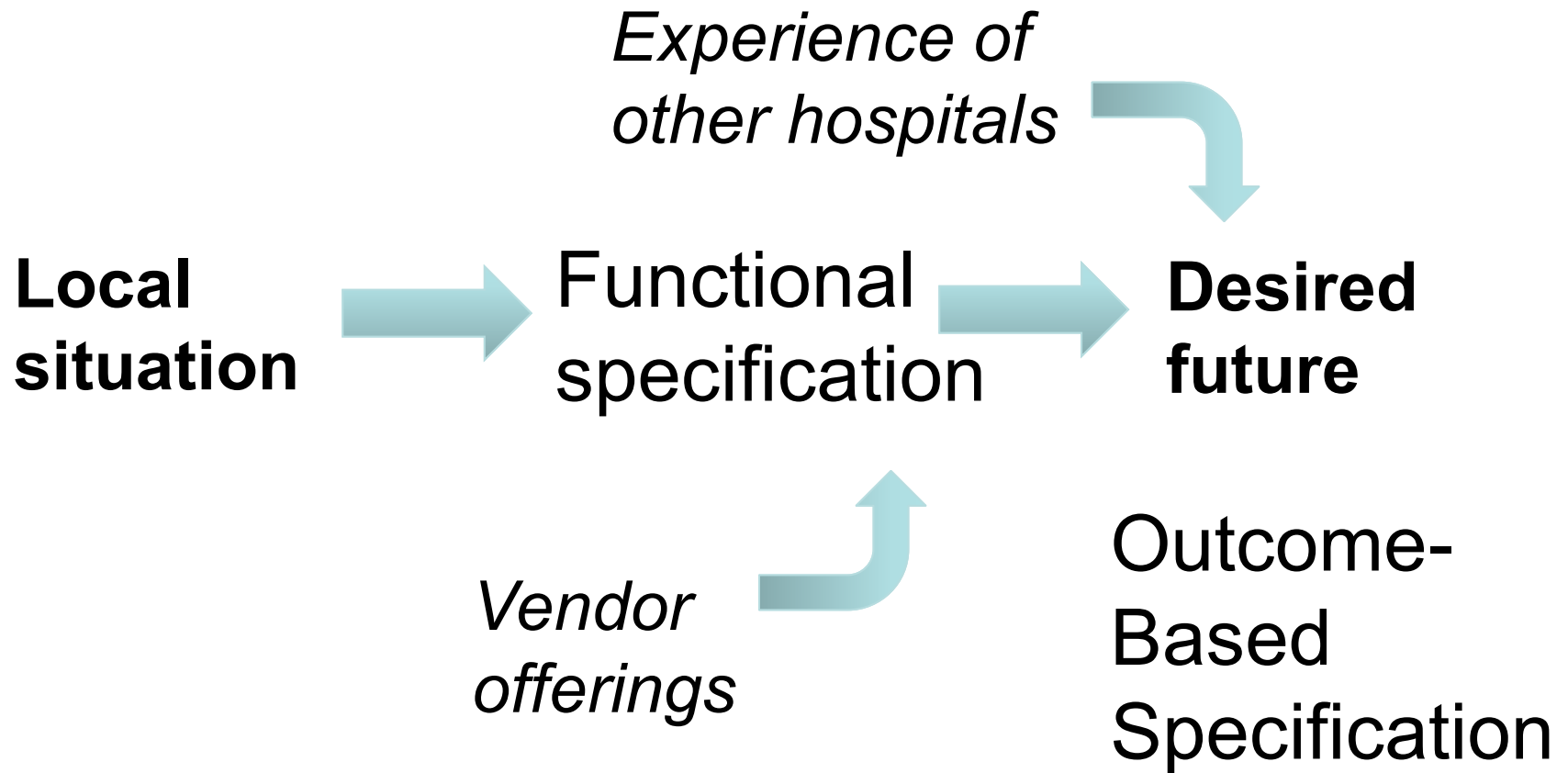
The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham **NHS**
NHS Foundation Trust

Developing a specification



NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham
NHS Foundation Trust

How to assess complex sociotechnical change?

Outcomes are a complex interaction between

- System functionality and configuration
 - Also problems of wider ICT infrastructure eg laptops, WiFi, plugs!
- System implementation strategy (training; roll-out)
 - eg trade-offs between phased roll-out (costs of dual operation) cf big-bang!
- Redevelopment of work routines and processes
 - Often given too little attention
- Longer Term Evolution (of context; purposes; applications)

widespread underestimation of time needed to realise benefits

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham **NHS**
NHS Foundation Trust

How to model costs & benefits in advance?

How to measure costs & benefits achieved?

- Implementation costs/effort \geq acquisition costs
 - Developing interfaces; operations (how to cost HP time?)
- Little evidence of immediate productivity gains/labour cost savings
- Service improvement and benefits of information may be hard to measure
- Benefits may only be fully realised many years after the system is fully embedded in procedures
- Capacity (functionality/procedures) created may contribute to other technology/organisational improvement programmes/future flexibility
- Such benefits may not be attributed to HEPMA
- However HEPMA adoption may best be seen as a strategic decision of resting on favourable CBA
- Organisations only rarely conduct retrospective cost-benefit analysis of strategic programmes

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham
NHS Foundation Trust

assessing (un)intended outcomes

- An extremely wide change of operational changes with diffuse consequences across diverse groups.
 - Eg changes in flows/rhythms of work – when drug orders appear
 - Participants often very aware where system imposes additional data entry tasks (problem where benefits accrue to other users).
Despite this people would rarely opt to go back to the old system
- Planned & unplanned benefits
 - eg Pharmacist welcome facility to implement drug recall
- Undesired consequences
 - eg duplicate ordering – effects of waste on drug bill likely to be more significant than productivity changes

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham
NHS Foundation Trust

Key potential HEPMA benefits: identified by participants

- Reduced prescribing errors & improved patient safety through decision support and reducing transcription error
- improved quality of care through better access to information and information flows;
- improved compliance with clinical guidelines
- innovative secondary uses of data
- BUT DID NOT FLAG improved workflows and efficiency?

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham
NHS Foundation Trust

HEPMA benefits perceived by case-study participants

- Overall positive perceived impact on organizational quality
 - eg reviewing high-risk drugs
 - some unintended negative perceived impacts
 - e.g. reduced pharmacist contact with patients
- Little perceived impact on safety:
 - reduced transcription errors
 - increased availability of dispensary safety information
- Minimal perceived impact on organizational efficiency
- System design and implementation shortcomings
 - Eg duplicate orders; access constraints => batch processing; migration between screens; log-in

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham
NHS Foundation Trust



Implementation success factors

- Top management buy-in
- Project champions
- Involving stakeholders from all groups
 - including end-users; super-users
 - multi-disciplinary teams;
- Partnership with suppliers
 - Iterative in early stages; partnership post procurement
 - Cf procurement/contracting arms length relationship
- Expertise and experience
 - Knowledge networks- especially to experiences of other hospitals; user groups (duplication of effort/experience wasted)
 - Local experience - often not valued/exploited further

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham
NHS Foundation Trust



A stepping stone in a longer term process?

- Transitional problems
 - Short-term: problems with wards that have not transferred;
 - Medium term: issues for recruits without prior HEPMA experience
- HEPMA as part of evolving wider health information infrastructure
 - Re-implementation and integration

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham
NHS Foundation Trust

A revised perspective on HEPMA ?

ePrescribing as part of a wider organizational strategy

- High-level drive and support from senior organizational stakeholders
- Inter-disciplinary involvement
- ePrescribing as an essential component of the overall organizational information strategy
- Organizational information strategies and associated ePrescribing system choices

Developing and maintaining relationships between customers and system suppliers

- Relationship building before and throughout the implementation journey
- A long-term partnership characterized by mutual trust but restrained by commercial relationships
- Sharing experiences of systems and suppliers through reference sites, supplier days and informal networks

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham
NHS Foundation Trust

A revised perspective on HEPMA ?

System choice through functional specifications & shared experiences

- Systems choice guided by functional specifications and networking with sites that have implemented

- Minimum system functions and outcome based specifications
- Restrictions in system choice and financial restrictions
- Pooling resources and sharing experiences

Planning the change whilst maintaining strategic flexibility

- Workflow and process mapping

- Stakeholder engagement
- Investment and resources
- Parallel systems and interoperability
- Composition of the project team
- Journey as opposed to a project
- Changing needs and flexibility in strategy

Separating “wants and aspirations” from organizational needs

- Expectations often exceed reality
- Organizational versus individual benefits
- Wishes versus needs
- Benefits and trade-offs

NIHR Programme Grant for Applied Research



The University of
Nottingham



UNIVERSITY OF
BIRMINGHAM

University Hospitals
Birmingham
NHS Foundation Trust