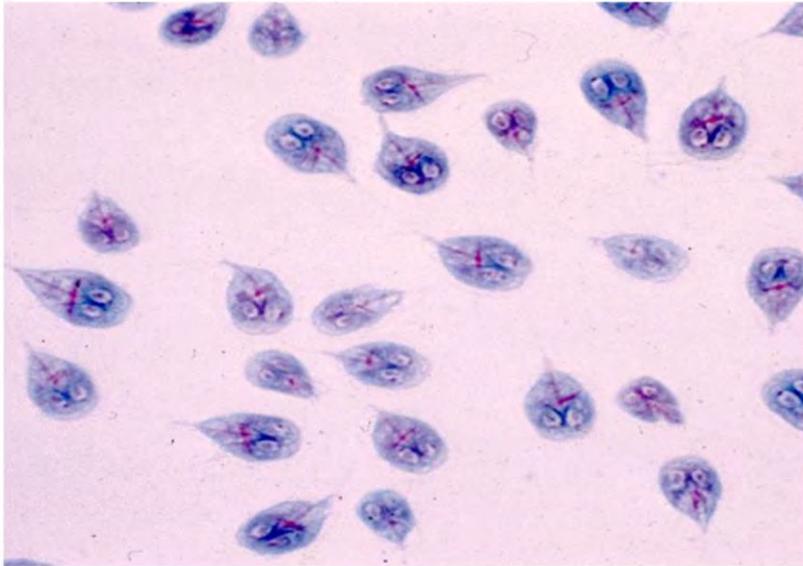


# TOWARD SUCCESSFUL DIGITAL INNOVATION IN THE NFP SECTOR

Maria Palmer



**SOURCE**

\*Giardia lamblia- Centers for Disease Control and Prevention (CDC) Atlanta

\*\*Error rates in Australian chemical pathology laboratories, Mounira Khoury, Leslie Burnett and Mark A Mackay. MJA 1996; 165: 128-130

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### **Error rates in pathology laboratories (1996)**

In 1996 a study by the Medical Journal of Australia showed Pathology laboratories had a transcription-error rate of up to 39% and an error rate of up to 26% for analytical results. The worst-performing laboratory had errors (of patient identification or results of analysis) in 46% of requests.

The types of errors reported affected adverse outcomes for patient care and inefficient use of health-care resources.

Accuracy of reported pathology test results, with potentially

Common types of errors....

Common types of adverse outcomes....

### **Case Study- Giardia lamblia, water borne parasite**

Treatment is metronidazole which will also take out good gut flora.

A case of a Transcription error could mean the wrong person being told they had Giardia – and be given antibiotics unnecessarily.

# Toward successful digital innovation in the NFP sector

- Digital Solutions in Clinical Care (Case studies from Pathology, Radiology, ICU, Maternity, OR and Anaesthesia).
- Digital Solutions in Aged, Disability and Community Care and Telehealth
- Delivering successful IT projects
- Rising to the challenge – recommendations for boards

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Today I am going to take you on a journey from my first experience of IT as a transformational business tool, through experiences in various clinical health settings to the present.

I currently work at Telstra Health and am on a NFP board. My purpose is to facilitate strategic change for community organisations with digital solutions.

Digital Solutions in clinical care (Case studies from Pathology, Radiology, ICU, Maternity, OR and Anaesthesia) and Digital Solutions in Aged, Disability and Community Care

Delivering successful IT projects - what I have learned from my experience delivering digital solutions to support strategic change in community organisations.

Rising to the challenge – recommendations for boards - we are going to explore some of your challenges and how IT solutions can support your business strategy.

# Pathology

## Customer Goals and Objectives

- Faster results reporting turnaround
- Reduced cost
- Improve quality
- Reduce errors



### SOURCE

Abbot Diagnostics - [www.abbottdiagnostics.com](http://www.abbottdiagnostics.com)

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## Stories from the Pathology Lab –

### Challenges:

In the mid 90's I was a medical scientists working in a pathology laboratory. We had an IT system where data on patients referred to us was entered, including the tests requested by their doctor.

Once tests were complete, results were entered and several times a day report print runs kicked off. The reports were couriered to the referring doctors, hospitals and nursing homes. A team of data entry operators keyed in patient data. The other medical scientist and I entered results on paper worksheets and handed them over for data entry. All labs had multi layered quality management system but despite this errors were made.

Errors that could potentially impact well being of a patient and reputation and success of the organisation. (as we heard from MJA)

Changing environment- changes in pathology funding -t reduced revenue for labs.

### Case Study: Transcription error Hep C.

### Outcomes needed:

Fast forward a few years and I was working for a lab software company. My customers were continually looking for ways to be more competitive- the outcomes they were looking for were patient safety, accuracy, speed and reduced cost

By then a good LIS delivered many innovations to support those outcomes...

- Advent of LIS as CRM
- Automated reporting – print runs

### Next Generation:

- Patient referrals sent electronically, by the time the specimen reached the lab, the analysers already received a message telling them what test to perform.
- Results were sent back to the doctors desktop computer electronically. Paperless, fast, safe.
- Paperless lab - interfacing, direct entry, voice entry, electronic reporting
- Quantitative analysis tools
- Intelligent decision support

# ICU

## Customer Goals and Objectives

- ❑ Improve nursing efficiency
- ❑ Consolidate information at point of care
- ❑ Manage costs
- ❑ Enhance safety



SOURCE

<http://qjms.amegroups.com/article/viewFile/4750/5802/25782>

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## Stories from ICU

### **Challenges:**

- Availability of nursing staff
- Multiple monitoring systems = multiple screens around patient bed, information in multiple places.
- Charting either on paper or a computer away from patient.

### **Key outcomes needed:**

- Improve nursing efficiency ICU, HDU
- Consolidate information
- Manage costs

### **Solutions:**

- Data available a point of care- consolidate information from multiple systems
- Decision support
- Enhanced workflow- intuitive UX
- Costing reports
- Medication protocols

# Anesthesia

## Customer Goals and Objectives

- Reduce errors
- Improve workflows
- Cost savings



**SOURCE:** GE Healthcare

[http://www3.gehealthcare.com.au/en-au/products/categories/healthcare\\_it/high\\_acuity\\_care\\_solution/centricity\\_opera](http://www3.gehealthcare.com.au/en-au/products/categories/healthcare_it/high_acuity_care_solution/centricity_opera)

[http://www3.gehealthcare.com.au/en-au/products/categories/healthcare\\_it/high\\_acuity\\_care\\_solution/centricity\\_anaesthesia](http://www3.gehealthcare.com.au/en-au/products/categories/healthcare_it/high_acuity_care_solution/centricity_anaesthesia)

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## Stories from Operating Theatres and Anaesthesia

### **Anaesthesia- Challenges**

- Access to previous records at point of care
- Transcription from paper records
- Data in multiple systems

### **Outcomes needed:**

- Reduce errors
- Improve workflows
- Cost savings

### **Solutions:**

- Ease of documentation within anaesthesia environment
- Data exchanged between systems and automated (device) data capture

# Operating theatre



SOURCE: GE Healthcare

[http://www3.gehealthcare.com.au/en-au/products/categories/healthcare\\_it/high\\_acuity\\_care\\_solution/centricity\\_oper](http://www3.gehealthcare.com.au/en-au/products/categories/healthcare_it/high_acuity_care_solution/centricity_oper)

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## Customer Goals and Objectives

- Optimise OR capacity
- Eliminate scheduling conflicts
- Increase case throughput
- Track and forecast materials consumption

## Stories from Operating Theatres and Anaesthesia

### **Operating theatre – Challenges:**

- Long waiting times, delays, cancellations
- Missing consultation results, material and equipment

### **Outcomes needed:**

- Optimise OR capacity
- Eliminate scheduling conflicts
- Increase case throughput
- Track and forecast materials consumption

### **Solutions:**

- Surgery Management Systems
- Scheduling
- Material Management
- **Data Analytics!**
- Data exchanged between systems

# Maternity

## Customer Goals and Objectives

- Spend less time on patient documentation
- Improve accuracy
- Improve nursing efficiency
- Reduce costs
- Consolidated mother baby record



### SOURCE

Foetal heart rate monitor - By Steven Fruitsmaak <https://commons.wikimedia.org/w/index.php?curid=9392470>

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## Stories from the Maternity Department

### Challenges:

- Time spent on manual charting, paper foetal heart trace

### Outcomes needed:

- Spend less time on patient documentation
- Improve accuracy
- Improve nursing efficiency
- Reduce costs
- Consolidated mother baby record

### Solutions:

- Interoperability - interfaces and integration tools- foetal heart rate, EMR
- Clinicians can monitor multiple foetal strips while documenting in the EMR
- Streamline maternity processes and procedures – ease of access to information, clinical trends

US and RWH- digitising birth records

# Radiology

## Customer Goals and Objectives

- Reduce costs- filmless
- Reduce reporting wait times
- Fast access to images
- Remote access
- Image archive



### SOURCE

By U.S. Navy photo by Photographer's Mate 2nd Class Nathanael T. Miller - This image was released by the United States Navy with the ID 060410-N-7293M-014 (next).

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## Stories from Radiology

### Challenges:

- Cost of film
- Time to report
- Accuracy
- Slow to retrieve images

### Outcomes needed:

- Reduce costs
- Reduce reporting wait times
- Fast access to images
- Remote access
- Image archive

### Solutions:

- Digital (filmless radiology), state wide archive, tele radiology

# Aged, Disability & Community Care

## Customer Goals and Objectives

- Eliminate the work required to collate timesheets
- Eliminate paper timesheets
- Minimise effort required to confirm shifts

SOURCE <http://www.nursingtimes.net>

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## Aged, Disability and Community Care

### **Challenges:**

- Productivity challenges due to paper based timesheets and rosters
- Increasing handheld and mobile applications
- Regulatory changes
- Funding changes and pressures
- Patient/consumer driven marketplace - Democratisation of healthcare

### **Outcomes needed:**

- Ability to fill vacant shifts without conflicts arising from multiple data sources
- Eliminate the work required to collate timesheets
- Eliminate paper timesheets
- Minimise effort required to confirm shifts

### **Solutions:**

- Staff submit timesheet from internet enabled device
- Shifts being confirmed within 24 hours
- Time savings by eliminating timesheets.
- Full visibility of every shift worked and up to date information within 24 hours of shifts being completed.
- Able to upload and edit shift notes and data automatically synchronises with database

### **Result:**

- More productive and efficient staff – staff are happier
- Improved profitability
- Better services - to customers/patients/ stakeholders

# Telehealth

## Customer Goals and Objectives

- Less travel
- Increased efficiency
- Deliver care services at lower cost
- Improve responsiveness
- Increase client satisfaction via informed, timely service
- Eliminate paper timesheets
- Improve collaboration between care teams

SOURCE <https://www.telstrahealth.com>

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## Telehealth

### Challenges

- Resource challenges
- Cost and productivity challenges
- Need to respond quickly to adverse situations
- Maintaining customer loyalty
- Maintaining continuity of care

### Outcomes needed:

- Less travel
- Increased efficiency
- Reduce cost to delivery care services
- Improve responsiveness
- Increase client satisfaction via informed, timely service
- Eliminate paper timesheets
- Improve collaboration between care teams

### Solutions:

- On line portals
- Eliminating
- Video conferencing
- Integration engine

# IT Project Delivery

## The secrets of successful projects – Top 10 lessons learned and recommendations



SOURCE <https://www.telstrahealth.com>

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### What have I learned?

Delivering successful IT projects

From - digitisation to data analytics. Trend toward data mining to improve medical outcomes

### Top 10 Lessons Learned and Recommendations

1. Understand and be clear about your business processes and workflows before you implement a digital system. Get Business Analyst help if needed.
2. It is not just about digitisation – it is about the data. Think about what data analytics can do for you.
3. Be clear with your software vendor on your expected project outcomes. Your vendor should sell you a solution to achieve your outcomes not just a system.
4. Don't have only the IT department driving the project. IT projects are really business projects.
5. Change management is key and relies on a good stakeholder management plan.
6. Involve your best people in the project. Empower them and give them sufficient time to focus on the project.
7. Establish a communication plan that ensures issues and risks are highlighted early.
8. Establish a project steering board and have them report to board on progress - The key questions to ask are “are we on track to achieve the agreed outcomes?” “what help do you need to stay on track?”
9. Agree and sign off the scope before starting the project.
10. Understand your current and future (“to be”) system architecture.

# What are your strategic challenges?

1. How do boards rise to the challenge to set the digital strategy and oversee successful execution of digital projects?
2. What are your challenges?
3. What outcomes do you want?

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Rising to the challenge - the right technology tools are critical

Exercise- thinking about strategic challenges – that will benefit from digitization.

What is the goal?

Sharing stories....



**SOURCE**

Johns Hopkins Pathology: <http://pathology.jhu.edu/department/patients/whatHappens.cfm>

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**In summary:**

- How do digital solutions support better care (quality, accessibility, value)
- Key success factors in health and aged, disability and community care - Implementing successful IT projects- on time/on budget/ OUTCOMES
- Digital strategy and the board

And so we look to the future and the next wave of innovation- we can be certain change will continue whatever field our business operates in.

# The future of pathology



SOURCE:

Omnyx <http://www.omnyx.com/precision-solution/research/smart-scanners>

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Back in the lab, changes continue - lab of the future - Digital Pathology

- Digital Pathology – whole slide imaging - scan glass slides to create high resolution images that use advanced compression to reduce file sizes without sacrificing quality
- “True” Telepathology

THANK YOU