FINAL REPORT

PROMISe3 Project

Simple Retail Pty Ltd
1.0 Performance Analysis

1.1 General Performance

The general performance of the PROMISe3 interactivity was excellent. Although unlike PBS-Online, the Guild “Stop” project, or prescription repositories, real-time connectivity was not essential.

1.1.1 System Failures

During the PROMISe3 trial there was a major cyber-attack on Telstra and Australian Government web sites. This caused loss of transmission from many sites using Bigpond and only to a lesser extent other ISPs. The peak of this attack was September 5th to September 10th 2009.

It is hard to see how this could have been foreseen, ameliorated or prevented.

1.1.2 Support issues

Unfortunately, the development and roll-out of PROMISe3 corresponded with the development and roll-out of the Pharmacy Guild sponsored Mirixa project. This meant that developers, support staff and pharmacies had to cope with two new, contemporaneous, complex system changes.

Mirixa requires a large amount of data to be transferred, but I'm not aware that this caused any particular problems for PROMISe3. This would be unlikely to happen again.

1.1.3 Connectivity

Data collecting programs similar to PROMISe3, have had problems with Internet security applications. Such applications have seen these innocent programs as a threat, and either quarantined or deleted them. This is a scenario what will most likely remain, and affect future projects.

Also see 1.1.1 above

1.1.4 Interactivity with other programs
Developers need to be aware of the likelihood of interference in their applications by third party security software and create “exceptions” in firewalls, antivirus programs and anti-spyware programs. See 1.1.1 and 1.1.3 above

1.2 Design and Workflow

Some users had difficulty in using the classification and documentation system. We, in fact, had to write our own set of notes to clarify the usage. To be fair, interventions can be very complex and do not always sit easily into neat pigeon-holes. This is therefore an observation not a complaint.

In addition we take pride in the fact that our dispense system is "mouse optional", so if PROMISe3 were to continue we would re-design it to be also "mouse optional".

1.3 Version Control

Dispense systems operate on a monthly cycle to correspond with PBS changes. Our version control is therefore also on a monthly cycle. On the first day of each month the systems all users of Aquarius are examined, both data and programs are tested for currency.

1.3.1 Compliance with the Functional Specification

We believe that we complied with the function specifications as we understood them. There were some instances in varied interpretations of the specifications as understood by the various parties. See 2.1 below

1.3.2 Testing

We did find that the Comms sandpit/integration environment was not available until very late (in our view far too late) in the process, and that also the communications testing and integration time window was very short.

In our case, a number of data issues were not raised until we were well into the project being live. See 2.1 below
2.0 Potential System Enhancements

2.1 Major Problems Identified (design, performance, outputs, quality)

A number of preventable problems were not identified by Logica until well in to the trial. These should have been identified earlier. See 2.1 above.

There were some problems with data. The repository was very strict (probably over strict) in the data it would accept. Unacceptable data should simply be ignored, and definitely not cause a transmission failure. This was often not the case.

As an example of miscommunication we used the most common definition of “alphanumeric”, being all letters, numbers and mathematical operators, not just letters and numbers.

There was the possibility of misinterpretation of the schema. Some fields were designated "optional" when in fact they were at the very least "desirable" if not "mandatory". I feel we were unfairly criticised for treating the word “optional” to mean "optional".

2.1.1 Recommended solutions

As a starting point, future programs should always use the same field sizes and designations as Medicare, in PBS-Online. These fields are well documented and already maintained in all pharmacies. Then, after this starting point any other fields needed can be defined and included.

2.2 Minor Problem identified (design, performance, outputs, quality)

The operation of PROMISe3 required a large amount of additional processing by the client (pharmacy) computers. In a small number cases, this caused a serious degradation in performance. Other similar pharmacy projects have also experienced this problem recently.

The software vendors do not have any real control of the exact configuration of the client (pharmacy) computers. In one case the operation of PROMISe3 was hampered by an unknown problem, possibly the Windows firewall or anti-virus scanners. Other similar pharmacy projects have also experienced this problem recently. See 1.1.4 above.
2.2.1 Recommended solutions

In formulating PROMISe3, by consensus it was decided that only pharmacy systems using Windows-XP professional and also using PBS-Online should be enrolled. This undoubtedly avoided many more difficulties similar to those encountered above.

Future projects should also include very clear system requirements.

*Observation:* Not all pharmacy systems use Microsoft based operating systems.

2.3 Recommended Enhancements

The design of the comms interface allowed for transmission of multiple records of the same time, but this was not terribly useful. It would have been more useful to be able to send the patient details, script history and intervention details in one transaction. This is the approach taken by PBS-Online and has very real and useful benefits for efficiency and data integrity.
3.0 National Expansion

3.1 Critical Assumptions

There is a need for pharmacists to be able to clearly document and record interventions in a system neutral, standard format.

Research institutions could benefit from a tool that gathers clinical intervention data in a configurable manner.

Patients health outcomes would improve from the clarity imposed by recording interventions.

3.2 Limitations of this system

Not all pharmacists are interested, have the time or the initiative, (or dare we say skills) to record interventions. Therefore there is a need to educate and provide incentives and motivation for pharmacists to do so. These incentives would probably need to be financial incentives. If PROMISe3 can demonstrate improved health outcomes from interventions, then there is a case for financial reward.

3.3 National Expansion: Requirements Defined

Although it does not need to be identical, the format of intervention recording should be similar across dispensing system platforms. The fields should have similar names and the classifications should also be similar.

3.3.1 Capacity

The actual load, as compared with the number of pharmacies enrolled, should enable the capacity of a national universal roll-out to be calculated easily.

Using the current broadband available in Australia there do not appear to be any client (pharmacy) capacity constraints.

3.3.2 Resources

If PROMISe3 can demonstrate improved health outcomes from interventions,
there is a case for financial reward for pharmacists taking the time to record interventions.

3.3.3 Structure options

As with the PROMISe3 project, any national system should be based on a client (pharmacy) initiated transmission, rather than an outside request initiated transmission. In other words the control should rest with the client (pharmacy).

Alternately, a satisfactory interventions recording program, without any central collections could be worthwhile.

3.3.4 Technical System Option

The transmissions to the central repository do not need to be in real-time. A single daily transmission of all interventions would be adequate. This could be built in to the pharmacy software end-of day procedure.

3.3.5 Integration Requirement

Rather than a plug-in solution, each software vendor should be allowed to develop their own parallel solution. However, the aims and expected results must be clearly defined.

3.4.1 System security

Any future project should ensure that it does not render the pharmacy computer system liable to outside attack, whether this be malicious or unauthorised data collection. See 1.1.1 above. Using encryption sponsored by HESA facilitates security.

3.4.2 Record Confidentiality

Any future project should fully protect the confidentiality of pharmacists, prescribers and their patients. Only de-identified data should be supplied to third parties.
4.0 Conclusions

PROMISe3 was a successful proof of concept. The PROMISe3 project demonstrated that a national prescription intervention recording scheme is possible. It is, however, the domain of the project partners to decide if it useful or desirable.

In future projects, the testing environment needs to be available well in advance of the pharmacy software, this will save time and minimise misinterpretation of the requirements. We have also demonstrated that the communications do not need to be in real-time, and that a plug-in solution is impractical.

Jerry Perkins
Development Pharmacist
Simple Retail
04/12/2009

Robbie Matthews
Software Developer
Mithril Software
4/12/2009