Advantages of PLS

PLS has a fundamentally more sophisticated model than most systems. In other simple systems, each order corresponds to a form that needs to be filled in. Different tests cannot be collected onto a single form as the form is fixed and does not adjust to the requirements based on tests or combinations of tests ordered.

In PLS, there is the concept of single reports; a single test request brings up a corresponding form. The layout of this form can vary according to what test is used to order it – e.g. in Microbiology the single form is used. Multiple tests on the same request can bring up different forms based on the requirements of the particular order – e.g. an Eye and Ear test can be ordered together. Each of these is on the Swab RDL (RDL = Intelligent Form). The Eye and the Ear form can automatically be formatted differently on the same form.

In PLS there is also the concept of the combination reports. These are RDLs (Form) that format according to the set of tests that are ordered. An example might be a Sodium and Potassium test ordered together. On the request this would be two separate tests Na and K. The RDL will automatically create a form that responds to the set of orders (and also the interactions between these tests).

If combination reports are not available, there is naturally a proliferation of single forms. A good example of this is in Biochemistry with the most common tests, the Ue (Urea and Electrolytes) and the LFT (Liver function Tests). Each of these is in fact a set of single tests that are ordered together. In PLS, a user can order Ue and Lft as separate requests. They are allocated to the RDL Bio, for example, which automatically formats itself based on the entire set of requests Ue and LFt. If only single forms are available, to get these test results on the same form, a new test needs to be created called UeLFt. Now we also want to have the Ue ordered on its own and the LFt on its own. We now need three forms, Ue, LFt and UeLFt.

Since PLS supports intelligent combination forms, there is far less complexity downstream and it becomes a far easier product to deal with complexity.

PLS also supports an imbedded 3GL language called TERP. These TERP scripts are based on the Pascal language supporting functions, procedures and libraries. These are the cornerstone for dealing with the complexity required to overcome a great range of issues. The TERP scripts are applied on loading and saving of forms as well as many other trigger points, such as receiving results from an analyser or printing a label. TERP allows key users to configure the system to deal with many issues. This results in a level of automation that makes the system a cornerstone for developing efficiencies which result in a lower labour cost.

Examples of TERP In Action

1. When a result is received from an analyser, a result that is less than 1.0 (such as 0.5) is changed automatically to <1.0. This is important, as it is misleading to report the actual result of 0.5 because accuracy in this range of results means the only level of true relevance is that the result is below 1.0

2. When a label is printed, the TERP script can decide if special formatting is required on the label. This might be the case because the request is urgent or it is for the ICU or Emergency and we want the label to stand out to the operator. Indeed, the TERP could redirect the label to the label printer that prints in RED.

3. The operator is warned of a critical situation because a particular combination of results highlights a dangerous situation that needs validation. For example, the result for the first two tests is Positive and the third test result is Equivocal. This is a contradictory situation unless the patient has a certain life threatening condition. The operator needs to be warned and indeed stopped from authorising the report unless an acknowledgement is recorded in the report. It also creates a notification for the ward to be phoned immediately.

KScript

PLS also supports a flexible scripting language for dealing with reporting. This is done with KScript, an inbuilt scripting language for creating HL7 messages, web pages and much more.

With KScript, the format of the HL7 message is created in the script. Kestral delivers and maintains standard KScripts. The key users have the capability of formatting their own messages. This is essential when dealing with the great range of systems to which PLS needs to be interfaced. Often these interfaces are created and maintained by key users who can react to local requirements in a quick and flexible manner. PLS is already CDA document compatible (Clinical Document Architecture). This is seen as a technology that will replace reporting to external system in HL7.

Kscript also allows users to create web pages that can be published on CIS giving such screens as the ones below:

The whole experience of CIS is much improved because of the complexity of PLS, which deals with combination forms and specially formatted forms. PLS also provides a method for constructing cumulative reports for CIS that draw from any form/RDL.

PLS also supports billing scripts that allow the system to automatically cope with the ever increasing complexity required in this area. Many pathology systems require that new tests be created when there are changes of item numbers, or when the many basic rule changes are made. Kestral easily copes with this by delivering standard libraries of scripts that process these changes automatically.

When the changes are required, the standard scripts are updated with new routines and Kestral staff work with the key users to call these routines to implement the changes required. This means that
billing rule changes for PLS sites are coped with easily and with little disruption to the remainder of the system.

A good example of this might be the introduction of a new rule that allows a higher priced item to be charged in the case whereby the patient has a known problem like being Diabetic. The forms can be configured to automatically introduce an extra question for the user during the data input. This extra question would be date-related so it only starts to occur as at the date on which the new rule is introduced. The bill script can then be updated to call the procedure "GivemetheHigherItemNumber12345" if the answer to this question is "Yes".

From the laboratory users viewpoint this question
is the only change. If down the road it was decided that the higher item number would always be available for inpatients, a date-related change can be made in the bill script that will enable this. Further the question on the form can be suppressed for inpatients.

PLS also has native Medicare Online functionality. A lot of systems either do not do this natively or use an adapter to convert it from the old format to the new format, which places the laboratory in the position of not taking advantage of all the new capabilities that come with a native implementation.

Kestral has also been very timely in providing interfaces as required by sites. Having an analyser arrive and not have an interface is a major issue for a pathology laboratory. In the history of PLS, there have been very few times when this has occurred. It only happens when there is new technology available and major development is required to go hand in hand with the new instrument.

Such devices as the OrthoAutovue blood bank analyser are one example of this – and only one lab was delayed for two months; and only because they gave Kestral no warning before the instrument arrived.

A new technology analyser class for Microbiology is now available. This has been in labs for a month now. Kestral is already delivering the new interface.
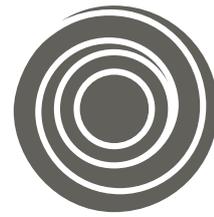
kestral
giving you the complete picture

Melbourne

Suite 8a, Level 1
17 Burgundy Street
Heidelberg, Victoria
Australia 3084
ph +61 3 9450 2222
fx +61 3 9450 2299
e: sales@kestral.com.au

Perth
Perth Office
Suite 8
137 - 141 Main Street
Osborne Park, Western Australia
Australia 6017
ph +61 8 9202 5555
fx +61 8 9202 5599
e: sales@kestral.com.au

Sydney Office
Suite 1.03
20 Falcon Street
Crows Nest, New South Wales
Australia 2065
ph +61 2 8404 0185
fx +61 2 9460 6484
e: sales@kestral.com.au

New Zealand Office
Suite D,
99 Hurstmere Road
Takapuna, Auckland
New Zealand 0622
ph +64 9 973 4929
fx +64 9 486 6600
e: sales@kestral.com.au