



PicNet Software Development

Methodologies | 20 January 2009

Several items listed below make up PicNet's software development's high level methodologies.

Team Size

PicNet will always prefer smaller highly skilled teams to larger less skilled teams. This approach has proven to deliver better results in a timelier manner. Deliverables are of a higher quality and scale much better if future enhancements are required. Having smaller teams has also shown us that developers take more responsibility for their work increasing quality.

All PicNet software developers are hired with that principle in mind and as such our developers are highly skilled and experienced.

Certifications and Accreditations

PicNet places a high degree of value in technical certifications and accreditations and this is usually a requirement for employment at PicNet. However exceptions are made with truly exceptional candidates. Certifications are very important to PicNet as they help us provide some degree of proof to customers of staff expertise and they also help us maintain our Microsoft Gold Partnership. Because of these reasons PicNet staff are constantly getting new an upgrading existing certifications.

Iterative Development

Our developers are taught that initial specifications will rarely if ever be accurate representations of customer requirements. As such we use iterative development in all our projects giving our customers a chance to see a functioning system very early in the development phase of the project. Any specification modifications at this stage can usually be absorbed in the initial project scope. This approach has shown to deliver what the customer wants on time and on budget.

Risk Management

All of PicNet's software developers are risk managers. They are all introduced into the [Risk Shield](#)® methodology early in their employment.

PicNet will accept responsibility of any reasonable risk in a project and when we do accept responsibility we will deliver. There are occasions when PicNet identifies risk to great to take responsibility for. In this case the customer is immediately notified and arrangements are made to mitigate these risks. This is a rare scenario

and usually only applies if a requirement is extremely vague and there is no way of tightening up the requirement.

Version Control

PicNet utilises best of breed version control systems such as CVS and SVN. However if the customer prefers other version control systems we will comply. Note: PicNet highly recommends not using SourceSafe (pre 2005) as this is a highly unstable and inefficient version control system.

Our utilisation of these version control systems allows PicNet to have full traceability of all enhancements, fixes in any system at any time.

Issue Tracking

PicNet has developed its own Issue tracking system, the PicNet Help Desk (PhD®). This tool allows PicNet's customers, project managers and developers to interact in a fully auditable manner.

Third Party Libraries

PicNet will not write functionality that is already available. As such we rely heavily on third party libraries that provide functionality required in projects.

Over the years PicNet has also developed its own very comprehensive set of libraries that are used on each new project.

Unit Testing

All business logic requirements of a system are unit tested without exception. Any bug identified is then unit tested to ensure it will not occur again. It is not uncommon for a PicNet developed project to have as many lines of unit test code as production code. This gives us great confidence in the quality of our deliverables and also great confidence in future modifications to the system.

Naming Conventions

PicNet only utilises standard naming conventions. More importantly one PicNet developer's main focus is to write understandable code. We do this by following best practices such as small classes/functions, DRY principles, etc.

Code Duplication

As a matter of principle code is never duplicated at PicNet. Our continuous build process includes duplicate code checking which will notify us of any accidental repetition of code.

Minimize Coupling

If two items are not related they are not found in the same location. This principle allows us to write small functions/classes that are easy to read and maintain.

Data Layer

Where possible, PicNet will use ORM technologies to develop its Data Layer. PicNet's tool of choice for this is [NHibernate](#). PicNet has developed a considerable amount of library code to use NHibernate including a code generator that allows us to get a Data Layer up and running in a matter of days rather than weeks.

ORM tools have shown to perform better, make development easier and more productive and reduce the number of bugs in the data layer. These tools also give us the flexibility of developing database independent systems which has proven more than once to be very convenient.

At PicNet as a general rule we will never place any logic code in the database (stored procedure, functions, triggers, etc). However there are some (very rare) circumstances where this is required, namely some reporting requirements or batch processing requirements. This approach has proven to be very successful and when taking over client projects we will very often recommend removing business logic from the database as one of the first tasks we undertake.



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