There are those that would place testing and quality control at the top of the technology management agenda and there is no doubt that these two issues do take up a disproportionate amount of time and money in financial services. What is so surprising therefore is that so many financial services firms get it so wrong in placing the issues in context, understanding the difference between them and usually in implementation.

**WHAT IS TESTING?**

Most people are familiar with the concept of testing. You may think of testing the brakes on a car. But what would be a good definition for testing? Is there a definition that covers everything or is there a specific definition for testing technology?

There is a reason for carrying out testing. Testing gives us the confidence we need to use the product. ‘Here are the keys to your new car. Oh, and we should tell you that the brakes haven’t been tested.’

We carry out testing to see if a product does what it says it would do and to see if the product does what we need it to do. These are two different things. The first is about whether the product meets its specifications. If the specification for our car states that it must have four seats then we can test against that specification. If however the seats are too low and you cannot see out to drive, then the product is not useable as a car and will fail because it doesn’t do what we need.

So testing is about evaluating a system and measuring aspects that relate to quality and suitability. Testing may be a static exercise where a document or a section of developer’s code is reviewed or it can be a dynamic exercise where the system is exercised and the tester takes the role of a user.
Testing is carried out objectively. To be objective, testing must have something to compare the system to and as such testing should be driven by requirements and specifications. Requirements are about what we need the product to do. Specifications are about how the product does it.

Testing will reveal defects in products. With the complexity of modern financial systems this is always true. Knowing what the defects are and how they affect the system is crucial when deciding whether to accept a product or reject it. By implication we will accept defects in most products provided that they are not of major importance. In the context of financial services this may sound wrong. The reality is that all systems have defects. Modern code is so complex that testing can only go so far in finding out the impact of new inputs and outputs to any given piece of code.

So we can now define testing as ‘the process of objectively evaluating a system to verify that it meets its specifications and that it satisfies the user’s requirements’.

WHEN TO TEST

Traditionally testing takes place after the product is developed and before the product is deployed. This fits in to the philosophy of ‘design, develop, test and deploy’, often referred to as the Waterfall Model. Leaving all of the testing until after the development stage has been completed is no longer seen as the best way of carrying out testing. Before considering the question any further let’s look at the typical development cycle for a product (Figure 14.1).

- Every new system, or any change to an existing system, begins with an idea. The idea is usually discussed for some time and eventually a business case is developed. At this point the business is keen to know if the idea will generate a return on the investment required to put the idea into production. Will there be a benefit to the organisation if the change is made?

- If the idea is accepted then detailed requirements are drawn up. The requirements define what the system has to do, how it interfaces with the business and how it will deliver benefit.

- Once the requirements are understood and agreed the functional specification can be written. The functional specification describes how the system will deliver the expected requirements and may contain details of screens, calculations, required fields and so on.

- A technical specification will be created by the development team. This document describes how the system will be built in order to satisfy the