



Submariners

THE DIFFERENCE BETWEEN DATA AND KNOWLEDGE

A submarine navigator will tell you that they fly rather than sail their vessels and that navigation is the art (not the science) of knowing where you are not.

Nuclear submarines spend their time finding and then following the submarines of other states. They fly to a designated arena, make contact and pursue their opposition without being spotted themselves.

This sounds relatively straightforward until you remember that submarines have no windows and using radar reveals your own position. This game of cat and mouse is played in the dark... by listening.

Anyone who has dived will know that the sea is very noisy. Sound travels further in water than it does in air and the sea is full of natural and man-made noises which bounce off the many reflective surfaces. Listening then is an immensely complicated business.

A submarine uses a vast array of technology to capture sounds as data. At the first stage, this sound data is referred to as "noise". There is a lot of data there but it does not tell the navigator anything.

The noise is immediately filtered using computer software and expert technicians identify patterns indicating the presence of something in which the crew might be interested. Their output is classified as "information".

Information from various filtering stations is then passed through a third stage for compilation. Experts interpret the information and compile a

picture of what is being heard and what it is doing. Only at this stage is the output referred to as "intelligence". The navigator is advised – Sir, we may have a class X vessel, with twin screws, travelling at 40 knots bearing 220.

But intelligence is not "knowledge". The navigator's protocols prevent him from acting without the requisite certainty. Any intelligence is corroborated until a reliable picture is formed – termed knowledge.

Typically, in these situations, the navigator stands with eyes shut. His analysts work efficiently around him to help him "see" the sound picture so he can decide how to act - bring us to 240 degrees and pursue.

The industrialist W. Edwards Deming said "he who acts on the last data point is a hack."

Our Information departments design IT systems that store tera-bytes of data. Our stakeholders demand that we report reams and reams of information, but there is very little intelligence and next to no knowledge.

With so much data being sent elsewhere many of our people do not feel responsible for steering the service. They struggle to "see" through the noise and so react to the last data point. We should encourage them to decide where they will take the operation (where they are not) and what "knowledge" they need to steer their course. Our IS teams can then be directed to filter the "noise" and we will begin to steer based on knowledge.

