# The Evolutionary Nature of Data Consumption

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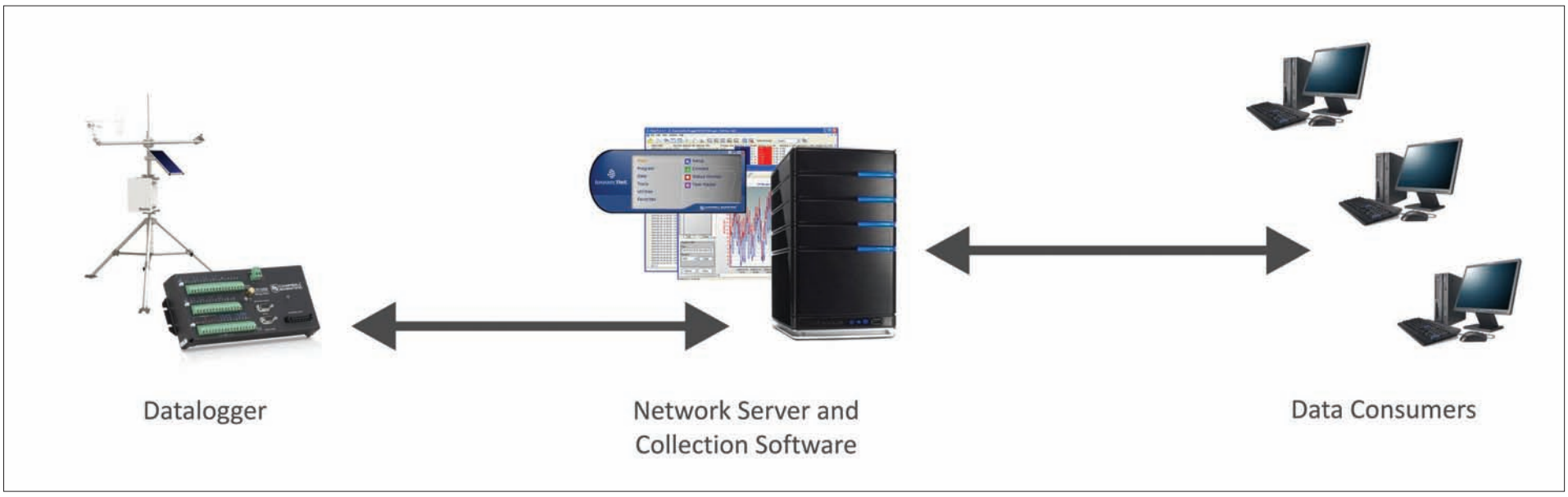
**Whether we recognise it or not, data plays an important role in the everyday lives of us all. An often underestimated commodity; data provides us with everything from our daily dose of the news, to the weather forecasts we rely on, right through to driving forward innovation and research.**




*A typical self managed solution*

The process of generating and collecting data has existed for centuries albeit in different forms, from human observation with written recording through to the now much more modern electronic dataloggers such as the Campbell Scientific CR1000.

Clearly we have become much more adept at creating and recording data, but, as our thirst for data continues to grow, the challenge is to stay relevant and to address the varying needs of data consumers and not only those of the data creator.

Each consumer scenario presents criteria that requires us to be flexible with our approach, but we need to stay mindful of the ever changing advances in computing technology that in themselves present opportunities to evolve and enhance the consumer experience.

The current method of electronic data generation and collection is firmly entrenched around the deployment of sensors facilitating the measurements and monitoring of a plethora of precision parameters. The sensors coexist with state of the art dataloggers for accurate and reliable measurement and data storage, which in turn couple with a spectrum of communications mechanisms to ensure the data gets to the all important data consumer.

As with all solutions, technology of the day has driven the options on offer with many existing deployments of sensors and dataloggers still successfully utilising dial-up modems for communication and software still reliably generating files full of data for the consumption of the ever eager researcher or end user.

Data logging hardware, like any other technology, evolves to accommodate the latest thinking and continues to be driven by customer requirements often taking us into uncharted waters, but the fast paced world of technology also dictates that we remain mindful of the rapid advances in computing technology and emphatically include hardware and software in that.

Dataloggers can often be selected based on the ease of not only deploying an effective measurement and/or monitoring system but, equally as importantly, by the mechanism of getting that essential data to where it is most needed. Traditionally this has involved management software either manually controlled or, more often, automated to collect and serve the data to consumers. As a consumer this approach often requires you to invest in and install not only your own network hardware but also collection software. Investing time and personnel in configuring, maintaining and supporting your system can be costly, but for some organisations the benefits of doing so and therefore retaining in-house control continues to be a governing factor leading to a healthy demand for client server software solutions and generic tools to view and store data. Campbell Scientifics LoggerNet, LoggerNet Database (LNDB) and RTMC Pro range combine with dataloggers and associated hardware to provide one such solution to data measurement, monitoring, storage, collection and display.

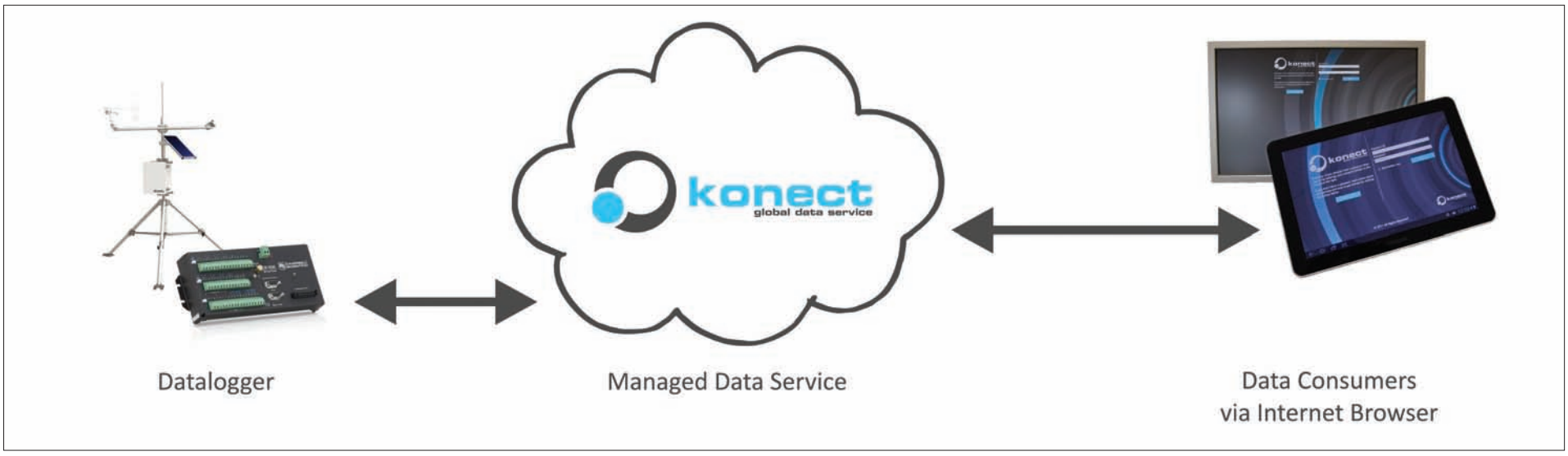
However, we mentioned earlier the constant pace of technological innovation and evolution. As many of you will be aware in recent years the term "Cloud Computing" has emerged and whilst it is often over used to suit any current fad or trend relating to the Internet, it does, when used as intended, offer an opportunity to transform the approach we take in our consumption of data.

All around us the way businesses and organisations are choosing to conduct their operations are changing and evolving. What once was the remit of an in-house department has given way to an outsourced service, often bringing with it a wealth of focused expertise and concentrated resources benefiting all those utilising the service. This approach isn't in itself new it has been happening in various forms and to various degrees for decades; however the arrival of cloud computing in a truly commercial form opens the door for data consumers to drive forward their use of vast quantities of data through services without the need to concern themselves with what is going on behind the scenes.

For the first time we can truly open the data experience up to individuals and companies alike who traditionally haven't the budget or resources to get started or to those established businesses and organisations that are looking for a more cost-effective, streamlined modern approach that fits the way they operate today and safe guards their investment for the future.

The key here is 'Service' providing a structured offering which, when combined with a reliable and cost-effective data measurement platform, gets your data to where you need it, when you want it. All this without the need to manage your own collection hardware, or configure servers, design displays or task individuals with monitoring. Instead handing over these issues to a partner who will ensure your data continues to be collected and stored securely whilst offering you platform independent access whenever you need it.

This transition is happening now; the Konect Global Data Service (Konect GDS) brings all these benefits to Campbell Scientific customers and integrators. Providing you with a simple to use service that will collect your data using modern communications options, check the quality of collected data before storing it reliably and securely and then providing the tools to analyse, view and disseminate your data; from any browser you choose.




*Managed data with the Konect Global Data Service*

All of this is made possible by cloud computing, providing a robust, secure, scalable platform that we as data facilitators can utilise to bring modern benefits to you the data consumer, ensuring that data analysis and monitoring can be done as quickly, easily and reliably as possible, all with the minimum of technical knowledge and all on your terms. Cloud computing provides vast quantities of computer processing power on tap, coupled with previously unheard of levels of storage space and resources, replicated and geographically positioned to ensure that your data is as safe yet accessible as can be reasonably possible.

Taking your data and housing it in such a manner opens the door not only to accessibility by your own organisation, but offers the opportunity for greater levels of collaboration, facilitating the sharing of data between partner organisations. Holding data together in a universal form offers the potential to find new and exciting ways to combine what was once much more disparate data from multiple sources in order to paint a much richer picture and provide greater insight into the data you have gone to so much effort to create in the first place.

I think we can all appreciate that a powerful future is emerging, one which combines the best of hardware, software and managed services to ensure that data continues to be pivotal and relevant in our day to day lives and that every data consumer has the choice to engineer a solution that is as complex or transparent as they desire. We are entering an exciting time whereby the tools available to us will bring greater order and context to what many would see simply as 'data', yet again software is set to redefine how we work and how organisations interact. But most importantly of all the value of data as a commodity continues to reassert itself and as a result continues to drive software and services into new territory.

# New Platform for Sensitive and Accurate Analysis of Contamination and Impurities

**PerkinElmer** (USA) announces the launch of its Clarus® SQ 8 Gas Chromatography/ Mass Spectrometer (GC/MS), setting a new industry benchmark for sensitivity and stability. The Clarus SQ 8 GC/MS provides extreme sensitivity to analyse samples accurately, with an 800:1 signal to noise specification. This capability gives environmental and food testing laboratories the ability to detect lower levels of contaminants and impurities.

The Clarus SQ 8 GC/MS delivers superior throughput and productivity by minimising requirements for calibration of instruments and reducing the need for sample preparation and concentration, dramatically improving workflow. PerkinElmer's Clarus SQ 8 GC/MS provides accurate results, which allows environmental and food testing laboratories to comply with new and evolving regulatory requirements that drive compliance in environmental and food applications.

"The quality and safety of food products are major issues worldwide, and accurate analysis of pesticide residues and other contaminants is imperative to monitor the interplay between human and environmental health," said Dusty Tenney, president, Analytical Sciences and Laboratory Services, PerkinElmer. "We work hand-in-hand with the world's leading environmental and food testing labs, and our introduction of the new Clarus SQ 8 GC/MS emphasises our commitment to giving customers the right tools to solve the growing challenges of these markets."

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# Spectrophotometer Gains New Qualifications

For the first time, Jenway's Model 6800 spectrophotometer from **Bibby Scientific** (UK) is available with comprehensive IQ/OQ documentation, satisfying the requirements of customers, particularly those in the pharmaceutical sector and other regulated industries.

Installation qualification documentation enables customers to ensure that they install their equipment correctly, in accordance with the manufacturer's guidelines. Covering issues such as location of the instrument, environmental requirements, PC connection and initial set-up, the IQ document contains step-by-step instructions and provision for all stages to be recorded for audit.

Operational qualification documentation is used to verify and document that the 6800 spectrophotometer functions within the defined specification. Approved protocols using traceable standards are set out for wavelength accuracy and repeatability, photometric accuracy, as well as instructions for checking stray light, bandwidth, noise and drift.

Covering the UV/visible wavelength range from 190 to 1100nm, Model 6800 is a true double-beam spectrophotometer with highly stable optics and a 1.5nm spectral bandwidth for excellent resolution and accuracy.

All functions of the Model 6800 are controlled via a PC using Jenway's intuitive and user-friendly Flight Deck software. The instrument's double beam configuration compares the light absorbance of test samples with a reference sample and the comprehensive range of measurement modes includes photometrics & multi-wavelength, spectrum kinetics and quantitation. DNA/RNA ratios can be analysed to calculate the concentration of double or single-stranded DNA.

The new IQ/OQ documentation is also available separately for customers who have previously purchased a 6800 spectrophotometer.

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# Micro DIN Enabled Temperature Sensors

**OMEGA's** (UK) new M12 Thermocouple and Pt100 sensors have been designed for ease of installation and maintenance. Termination is achieved through a polarised M12 connector with a hand-tightened knurled nut completely eliminating wiring errors and, as no tools are required, downtime for a sensor change is drastically reduced.

Previously the only options available for cold end termination were traditional in-line plastic connectors or conventional terminal head arrangements where a more permanent, robust installation was required. Those were often supplied with vague IP ratings and a variety of electrical connections requiring additional thread adaptors and termination glands to complete the system.

This new range of M12 sensors overcomes all those difficulties. Having a vibration resistant construction, low probe mass and an ingress protection rating of IP67 they are ideally suited to a broad application range. Typical users include industrial, hygienic, food and beverage and research laboratories where process conditions such as outdoor, wet, high humidity, wash-down situations and other challenging environments exist.

They are available off-the-shelf with either a stainless steel or Inconel sheath in both 3mm and 6mm diameter with standard lengths of 200, 500, 750, 1000 and 1500mm. The range is further enhanced by a variety of process fittings including BSP, NPT and metric mounting threads, as well as Tri-clamp flanges for hygienic and vacuum applications.

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