Looking beyond your microscope: contributing data and information to the global community

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During the past 50 years the process of scientific research, the management of collected data, the publishing of results, the archival of data and information as well as the timeline associated with this process have changed in a dramatic way. The IOC's International Oceanographic Data and Information Exchange (IODE) was created in 1961 with the objectives to enhance marine research, exploitation and development, by facilitating the exchange of oceanographic data and information between participating Member States, and by meeting the needs of users for data and information products. We will show how the system has evolved during the past fifty years and what challenges it is facing today. The volume of data "ingested" by the oceanographic data centres has grown exponentially. Data centres are no longer stand-alone systems but are increasingly interconnected regionally and even globally. This provides many advantages for the end user in terms of data discovery and data access, but it also creates new problems such as duplicates, near duplicates as well as uncertainty about quality. The expectation of end users to obtain data in real-time or near real-time started with physical oceanography data, continued with chemical data and is now including biological data. This increases pressure on researchers to process data much more quickly and to make the data freely available. With the rapid evolution in information technology it is now possible for any scientist or group of scientists to manage and serve data. What are the implications for established data centres? Are scientists also data managers?