The Information Capture and Dissemination Environment System

1.   The Information Capture and Dissemination Environment (ICDE) is part of a suite of software systems for providing intelligent assistance to professionals such as financial analysts, scientific researchers and intelligence analysts. To this end, ICDE automatically captures and stores data that records a range of actions performed by a user when operating a workstation. For example, when a user performs a Google search, the ICDE system will transparently store in a database:
− the search query string
− copies of the web pages returned by Google that the user displays in their browser.
This data can be used subsequently retrieved from the ICDE database and used by third-party software tools that attempt to offer intelligent help to the user. These tools might interpret a sequence of user inputs, and try to find additional information to help the user with their current task. Other tools may crawl the links in the returned search results that the user does not click on, attempting to find potentially useful details that the user overlooks.
The three major use cases incorporate:
   1. the capture of user actions,
   2. the querying of data from the data store, and
   3. the interaction of the third party tools with the user.
Let call ISDE v1.0 the new system.
Give almost two software architectures that could be used for ISDE v1.0.

2.   ICDE v2.0 had much more ambitious aims. Having proven that the system worked well in trial deployments, the project sponsors had two major business objectives for the next version. These were:
− Encourage third party tool developers to write applications for the ICDE system.
− Promote the ICDE concept and tools to potential customers, in order to enhance their analytical working environment.
Clearly, both these objectives are focused on fostering a growing business around the ICDE technology, by creating an attractive market for third party tools and an advanced advisory environment for users. Achieving these goals requires detailed technical and business plans to be drawn up and followed through.
In order to attract third party tool developers, it is essential that the environment has a powerful and easy-to-use application programming interface (API) that could be accessed from Windows as well as Linux and Unix platforms. This would give tool developers flexibility in choosing their deployment platform, and make porting existing tools simpler. Surveys of existing tools also raised the issue that powerful analytical tools might require high-end cluster machines to run on. Hence they'd need the capability to communicate with ICDE deployments over local (and eventually wide) area networks.
Another survey of likely ICDE clients showed that potential user organizations had groups of 10 to 150 analysts. It was consequently important that the software could be easily scaled to support such numbers.
There should also be no inherent design features that inhibit the technology from supporting larger deployments which may appear in the future.
Equally important, to keep the base cost of a deployment as low as possible, expensive COTS technologies should be avoided wherever possible. This in turn will make the product more attractive in terms of price for clients.
Here is the synthesis of the ICDE v2.0 requirements:

Business Goal	Supporting Technical Objective
Encourage third party tool developers	Simple and reliable programmatic access todata store for third party tools
	Heterogeneous (i.e. non-Windows) platform support for running third party tools
	Allow third party tools to communicate with ICDE users from a remote machine
Promote the ICDE concept to users	Scale the data collection and data store components to support up to 150 users at a single site
	Low-cost deployment for each ICDE user workstation

Modify the ICDE v1.0 architecture to implement the new requirements.