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1. Describe the major problems of platform integration.

The major problems which arise with platform integration occur when an organization runs a heterogeneous network with different computers running different operating systems. Even when machines are all bought from the same supplier, this can be a problem. New machines may be delivered with new operating system versions and installed in a network with machines running older versions of the operating system. In some circumstances, existing CASE systems will not immediately run under the new operating system. Newly purchased CASE systems may not work with older versions of the operating system.

2. How does a generic message server work in control integration?

A generic message server manages communications between the CASE systems. Each tool to be integrated provides a control interface which allows access to the tool's facilities. The message server includes information about the interfaces of all of the accessible tools and the location of these tools. It takes care of information encoding and decoding for network transmission. When a tool needs to communicate with another tool, it constructs a message using a known format, addresses it and sends this to message server. The tool does not need to know where the called tool is situated; it simply calls the message server which then passes the message to the called tool. Therefore, the model supports a distributed CASE system where different components of the system execute on different computers. Logically, tools broadcast messages to be picked up by other tools with an interest in them. The message server knows the messages which can be processed by each CASE system so only passes on appropriate messages.

3. Even though individual CASE tools are useful and cost-effective, explain why there is need for integrated CASE tools.

Individual CASE tools are useful and cost-effective. However, more leverage is obtained when CASE tools work together in an integrated way. The principal benefit of integration is that specialized tools can be combined to provide wider support for process activities. An effective integration framework makes evolution possible as new systems are added without perturbing existing systems. With an integrated system, training costs

are potentially reduced as existing software is reused when new systems are added. If CASE system user interfaces are integrated, the learning time and the user error rate are likely to be reduced. Examples of situations where benefits are gained from integration include:

(1) The integration of a design workbench with a documentation workbench. The documentation automatically generated by the design tools can be formatted neatly and included in system documentation produced using the documentation workbench.

(2) The integration of specification, design and programming tools with a configuration management workbench. The outputs from the tools can be managed using the CM system. The organization can keep track of different changes, versions, releases and so on.

4. List the five different types of integration and briefly explain two of them.

The five different types of integration are;

(1) Platform integration: Tools run on the same hardware/operating system platform.

(2) Data integration: Tools operate using a shared data model.

(3) Presentation integration: Tools offer a common user interface.

(4) Control integration: Tools may activate and control the operation of other tools.

(5) Process integration: Tool usage is guided by an explicit process model and associated process engine.

Data Integration

Data integration means that different CASE tools can exchange data. Thus, results from one tool can be passed as inputs to another tool. Support can therefore be provided by multi-purpose 'tool fragments' rather than monolithic tools or workbenches. There are a number of different levels of data integration as shard files, shared data structures and shared repository.

Presentation Integration

Presentation or user interface integration means that the tools in a system use a common metaphor or style and a set of common standards for user interaction. Tools have a similar appearance. Users have a reduced learning overhead when a new tool is introduced as some of the interface is already familiar. There are three different levels of presentation integration as window system integration, command integration, interaction integration.