

Performance

What will the performance of the product be?

Capacity

How many users will use the system simultaneously? How much data will the system need to store for its users?

Ecosystem

What interactions will the system have with other systems in the ecosystem in which it will be deployed?

Modularity

How is the task of writing the software organized into work assignments (modules), particularly modules that can be developed independently and that suit each other's needs precisely and easily?

Buildability

How can the software be built as a set of components that can be independently implemented and verified? What components should be reused from other products and which should be acquired from external suppliers?

Producibility

If the product will exist in several variations, how can it be developed as a product line, taking advantage of the commonality among the versions, and what are the steps by which the products in the product line can be developed (Weiss and Lai 1999)? What investment should be made in creating a software product line? What is the expected return from creating the options to develop different members of the product line?

In particular, is it possible to develop the smallest minimally useful product first and then develop additional members of the product line by adding (and subtracting) components without having to change the code that was written previously?

Security

If the product requires authorization for its use or must restrict access to data, how can security of data be ensured? How can "denial of service" and other attacks be withstood?

Finally, a good architect realizes that the architecture affects the organization. Conway noted that the structure of a system reflects the structure of the organization that built it (1968). The architect may realize that Conway's Law can be used in reverse. In other words, a good architecture may influence an organization to change so as to be more efficient in building systems derived from the architecture.

Architectural Structures

How, then, does a good architect deal with these concerns? We have already mentioned the need to organize the system into structures, each defining specific relationships among certain types of components. The architect's chief focus is to organize the system so that each structure