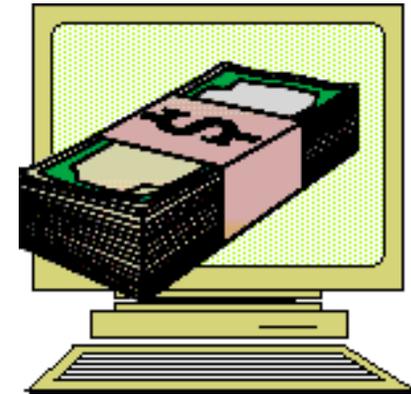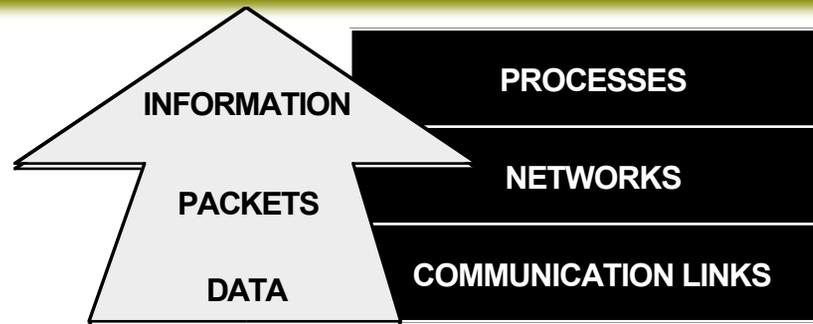# MEA$URING THE VALUE OF INFORMATION

infoWARcon'97
Tysons Corner, Virgina
September 11-12, 1997

Dr. Myron L. Cramer
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Information vs Data

- **Information is more than Data**
  - » Through processing data is placed in a context, related to other data or previous information and
  - » developed into something that is consumable by users
- **Relationship between Information and Data is not direct**
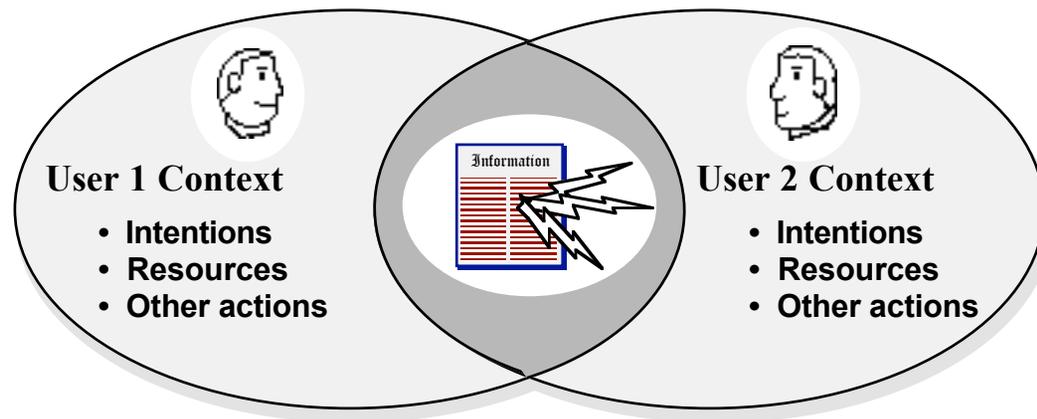 - » A small amount of data can have more value than a large amount of other data

Metrics

Quantity

Quality

Time

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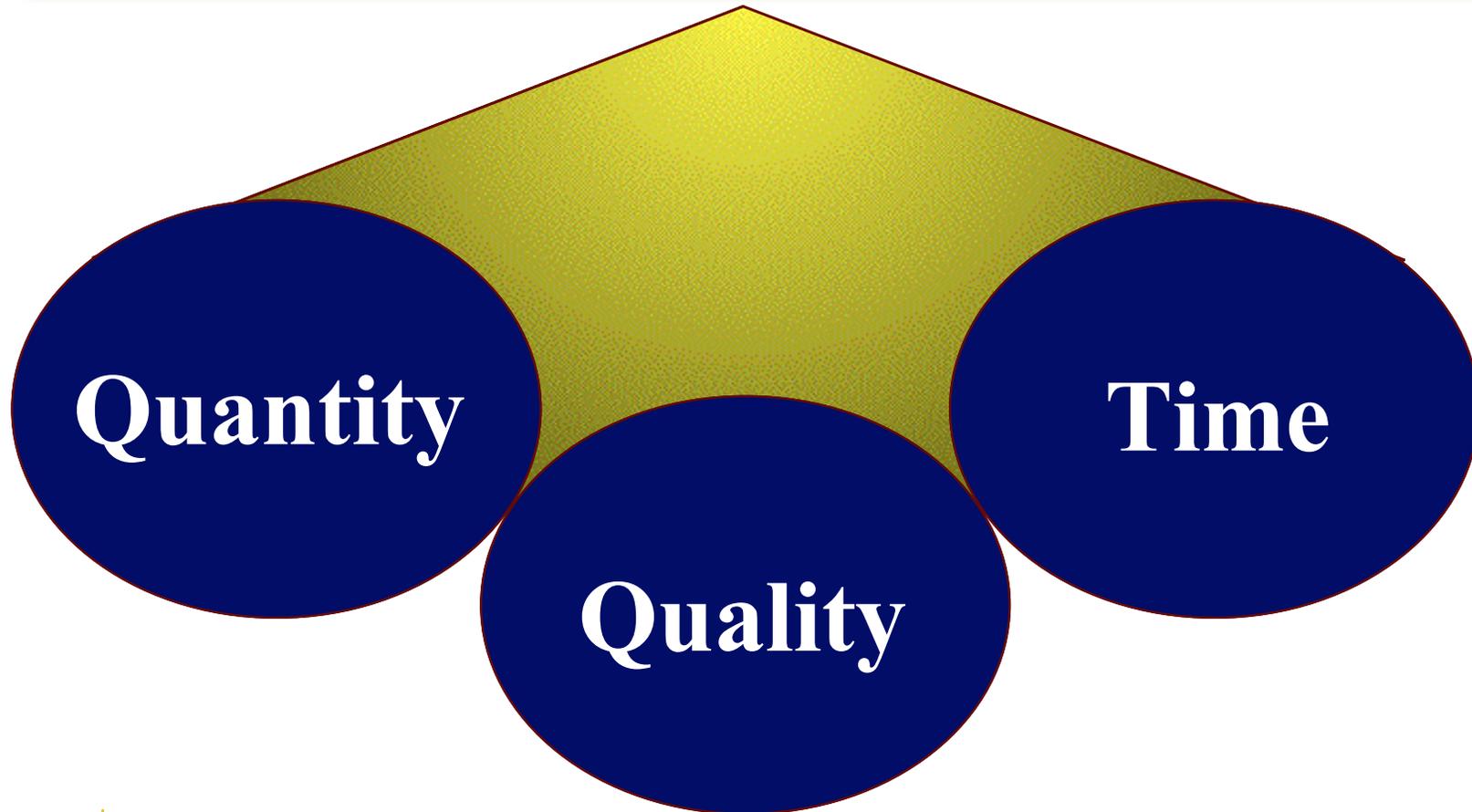
Information has Value

- Product designs. Engineering technical designs, engineering drawings, computer-aided designing (CAD) or computer-aided manufacturing (CAM) systems.

- Product technical data. Supporting technical data user manuals, maintenance manuals, and part breakouts.

- Management guidance. Organizational management documents including mission statements, charters, policies and procedures manuals, strategic plans, implementation plans, unit operating plans, business plans, and marketing plans.

- Operational data bases. Business operational data bases, customer account data, pending product orders, shipping load rosters, inventories, and financial records.

- Operational processes. Techniques and methods of conducting business, and process descriptions.

- Technical data bases. Technical parameters and other related engineering data bases used to support designs and operations.

- Staff knowledge. Knowledge and know-how resident in organizational staff, reflects education, training, and experience. Includes staff knowledge of business procedures, staff technical knowledge, customer experience, and market understanding.

- Computer software. Software to operate organizational information systems including office automation, mission software, and communications. Includes executable and source code, where custom applications are utilized.

User Contexts

User 1 Context
- Intentions
- Resources
- Other actions

Information

User 2 Context
- Intentions
- Resources
- Other actions

- **Information has different value to different users depending upon their resources, intentions, market position, and the outcome of scenarios.**

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Bases of Value

- **Development basis**
- **Operations basis**
- **Market basis**
- **Collection basis**

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Development Basis

- **The developmental basis takes into account the efforts and resources required to develop or reconstruct the information, independent of other considerations.**

- **Applying this basis involves defining and pricing a process to acquire or re-acquire the information should it be lost.**

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Operations Basis

- The operations basis includes the value of information to actual, ongoing operations.

- It is the clearest situation where information is required for consumption as part of current business processes.

- The premise is that if this information is lost or otherwise rendered unusable, then a set of processes will be forced to stop until the information is replaced.

- This value basis is heavily dependent on scenarios and user needs.

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Market Basis

- The market basis addresses the resale value of information.

- Information is often developed and provided strictly to meet the needs of a user's customers.

- This is true in the government for the intelligence community and commercially for the news media.

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Market Basis *(continued)*

- **Although the market value of information may take into account the development costs, it is also influenced by how badly the ultimate consumer of this information needs it and the availability of alternate sources.**

- **Market values are best assessed by comparisons with actual experiences since they depend on supply and demand forces, which are functions of location and time.**

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News Example
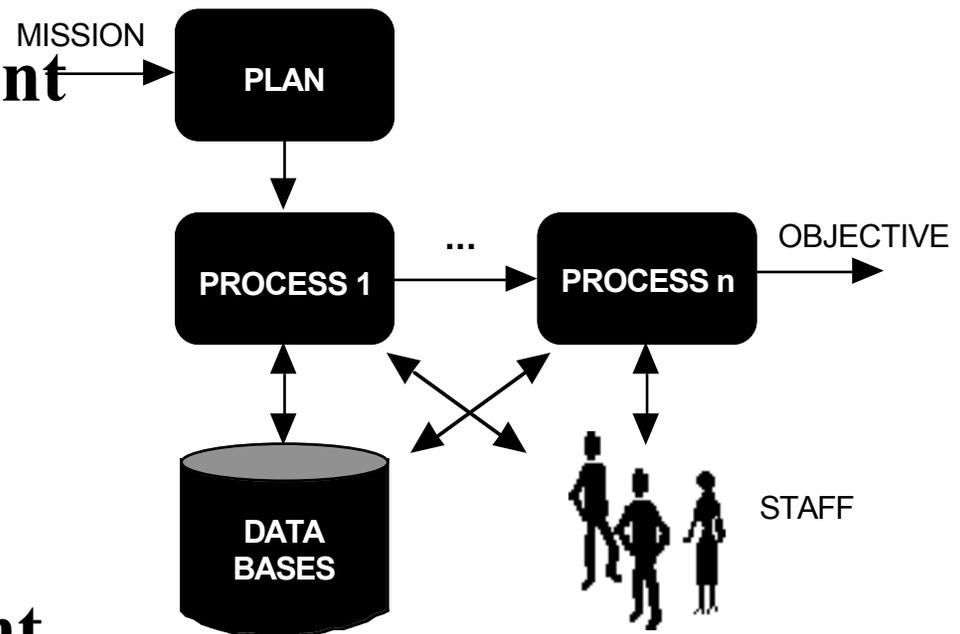
- During the research stage of a story, care must be taken to protect the emerging story from competitors who might break the story first.

- Once the story is released, confidentiality doesn't matter, but availability does.

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Collection Basis

- **Often information (as well as other items) are generally perceived to have value without a clear or direct purpose other than simple possession. This is true of many collectable objects.**

- **Does this information have a value?**

- **The collection basis considers the perceived value of information to the user separate from explicit developmental, operational, or documented market value.**

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Types of Information

- **There are different types of organizational information**

- **These face different threats and have different security issues**

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Information Assets

Type	Description	Leverage	Risks
MISSION	Communicates organizational mission	Directs plans, processes, staff, data bases	Availability, integrity
PLANS	Results from planning process to organize and control resources to accomplish mission	Directs, resources, and controls processes, staff, and data	Availability, confidentiality, integrity
PROCESSES	Technologies and processes to produce products	Affects interconnected processes	Availability, integrity
DATA BASES	Operational and technical data bases used by planning and other processes	Affects processes	Availability, integrity, confidentiality
STAFF KNOWLEDGE	Knowledge and know-how of staff, reflecting education, training, and experience. Knowledge of business procedures, technical knowledge, customer experience, and market understanding	Affects ability to plan and execute processes	Availability

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