THE DOMAIN OF INTEREST
High-risk systems; i.e., feasibility estimates of high uncertainty and low confidence
Examples: untested technology requirement, purposeful opposition, urgent schedule
Software-intensive systems
Examples: C3I, navigation, surveillance, logistics
System feasibility: conceptual, architectural, and acquisition
Systems architecting: creating and building complex systems

THE PROCESS OF SYSTEMS ARCHITECTING
A focus on the system and its acquisition as a whole
A concentration on interfaces, both product and process
An art as well as a science: heuristics as well as analytics
Representation models: behavioral (functional), performance, data and managerial
Design progression (refinement)

AN ARCHITECTURAL PERSPECTIVE OF SYSTEM FEASIBILITY
System feasibility vs software feasibility for software-intensive systems
Sequential or joint?
Conceptual, architectural and acquisition
Examples of sequential disasters
Feasibility in multiple representations — which or all?
Design progression: stopping or progressing?
Progressive reduction of abstraction; i.e., progressive refinement of detail
Progressive reduction of risk
Progressive refinement of design
Maintaining system integrity

HEURISTICS FOR THE PROGRESSIVE ESTIMATION OF FEASIBILITY

- Make no feasibility claims until low-confidence estimates of high risks have been brought within credible range. [Until then, the project should not be considered as anything other than experimental.]
- Use prototypes to reduce risk, not to demonstrate feasibility. [Demonstrators are for increasing customer understanding, not confidence nor approval.]
- Do the hard (high risk) parts first. [Doing low risk tasks to demonstrate continuing progress, percent completion, or meaningful risk reduction increases project risk.]
- Never start without at least one divergent alternate solution, clumsy as it may be. [Whatever its cost, it will be less than that of late system cancellation.]
- Be prepared to cancel or start over, in whole or in part, as early as possible, once feasibility starts to drop. [This is a corollary of the Choose-watch-choose heuristic: Choose the best available option. Watch to see if future problems are appearing faster than future solutions. If so, go back and choose again.]
- Cancel in a way that minimizes breakage, maximizes salvage, and conserves reputation.
Make no feasibility claims until low-confidence estimates of high risks have been brought within credible range.

Until then, the project should not be considered anything but experimental.
Use prototypes to reduce risk, not to demonstrate feasibility

Demonstrators are for increasing customer understanding, not for their confidence or approval.
Do the hard (high risk) parts first.

Doing low risk tasks to demonstrate continuing progress risk reduction, or percent completion increases project risk.
Never start without at least one **dissimilar** alternate solution, clumsy as it may be.

Whatever its cost, it will be less than that of late system cancellation.
Be prepared to cancel or start over, in whole or in part, as early as possible, once feasibility starts to drop.

Cancel in a way that minimizes breakage, maximizes salvage, and conserves reputation.