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Matching Automation to Application

What automation choice is most suitable and advantageous for a given application? Conflicting issues and requirements often complicate the decision, and there is no quick and reliable shortcut or automatic decision-making method. However, following a deliberate and careful selection process will facilitate the development of a sound program. The key steps include:

- Define the program requirements and determine the key factors that justify specific decisions and selections.
- Evaluate the justifiable total cost of equipment per unit of product over a reasonable time period, and define the justifiable acquisition cost of equipment, based on this evaluation.
- Determine optimal basic equipment type, based on the relative importance of the benefits that the various automation technologies offer to the project.
- Determine potential equipment sources, select several preferred sources, and obtain preliminary proposals from these sources.
- Select optimal equipment concept and preferred source, and engage the source for concurrent engineering services.
- Continue product and process design while equipment source evaluates product manufacturability and preferred equipment concepts. Maintain close liaison throughout, and continue to evaluate the equipment source. If necessary, change the source.
- Determine preferred equipment concepts. From that, determine essential or advantageous prototyping work. Authorize the equipment source to proceed with that work, on an expedited basis.
- Obtain final proposal from the equipment source, pending outcome of the prototyping work.
- Negotiate mutually acceptable contract with the equipment source and authorize start of
 work, temporarily freezing the part of the work depending directly on the results of the
 prototype program and providing an equitable change-order process.
- Work closely with the equipment source, providing needed information and components rapidly. Redirect development efforts as needed to accommodate results of prototype program or other redesign imperatives.
- Provide for adequate spare parts availability.
- Train production and maintenance personnel thoroughly for the new equipment.
- After successful acceptance testing at equipment source plant, work with equipment source to integrate equipment into production. Provide for further training of production and maintenance personnel.
- Continue fine-tuning and upgrading equipment. Maintain close liaison with the equipment source regarding any equipment changes, and rigorously update documentation.