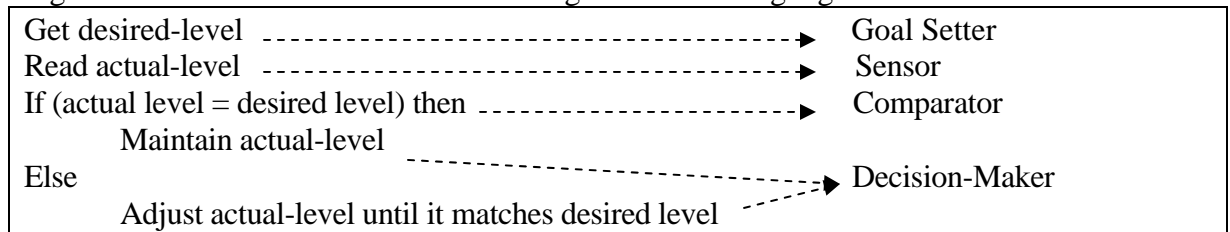# **A U T O M A T I O N**

Given: A repetitive task.
Issue: should its execution be delegated to a machine? (= Automation)

Explore if the task CAN be automated from a technical viewpoint

Figure out the structure of the task according to the following logic:

Get desired-level ------------------------------>	Goal Setter
Read actual-level ------------------------------>	Sensor
If (actual level = desired level) then ---------------->	Comparator
Maintain actual-level	
Else ------------------------------>	Decision-Maker
Adjust actual-level until it matches desired level	

Determine the type of function to be automated

- Automated input (Caller ID, Speech Recognition, Biometrics, webcam, …)
- Automated processing
- Automated output (Audio Output, Robotics, …)

Explore if the task SHOULD be automated from an economic viewpoint

	Fixed Cost	Variable Cost
Manual	*LOW* • Training	*VERY HIGH* • Payroll
Automated	*VERY HIGH* • Hardware • Software • Communication • Training	*LOW (?)* • Maintenance • Upgrades

Advantages	Disadvantages
Next	*Page*

Calculate the amount of time it takes for automation to pay for itself

The old system needed 5 clerks. The new system costs $30,000, and needs only 2 people. Each clerk is paid $20,000/year. How long will it take for the system to pay for itself?

$$\text{Payback Period} = \frac{\text{Fixed Cost}}{(\text{Cost Savings or Revenue Enhancement})/\text{time period}}$$

Is the payback period acceptable?

Explore if the task SHOULD be automated from a

- social viewpoint (Are the impacts of automation on people acceptable?)
- marketing viewpoint (Does "automated" have a positive image associated with it?)

Automation Advantages and Disadvantages

Advantages	Disadvantages

Speed
 	
Accuracy
 	
Availability
    • Convenience
    • Productivity
 	
Long-Term Cost Reduction (?)
 	
Privacy (?)
	Limited Application Scope
	
	Inability to Handle Exceptions
	    • "smart" = stupid!
	
	Lack of Security
	
	Heavy Upfront Investment