HOW TO FORECAST THE FUTURE
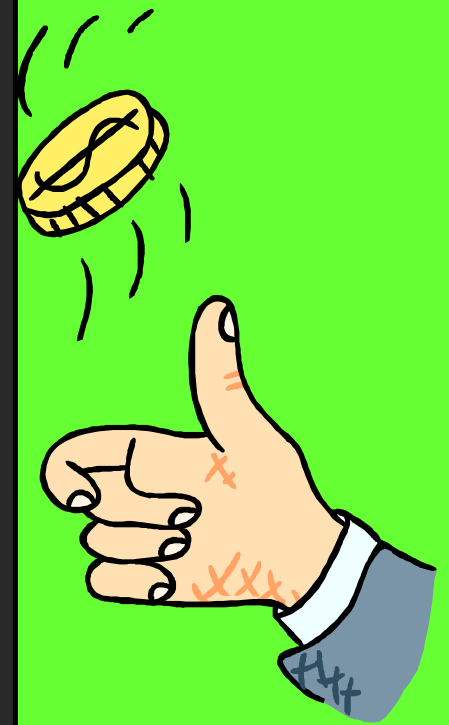
FUTURING 1:

INTRODUCTION TO FORECASTING

A COURSE FOR

MINNESOTA FUTURISTS

by

Earl C. Joseph, Futurist

WHAT IS FORECASTING?

- **FORECASTING consists of a variety of processes for identifying what possible futures <u>could</u> happen**

- **PREDICTION consists of a variety of processes for identifying what possible futures <u>will</u> happen**

GROWTH OF NEW KNOWLEDGE

- **DOUBLING TIME:** the amount of new knowledge doubles every four years

- When new knowledge is applied, it causes change

- Thus, forecasting attempts to foretell where change will take us in the future

- Forecast – In 20 years society could have 1000 times more knowledge

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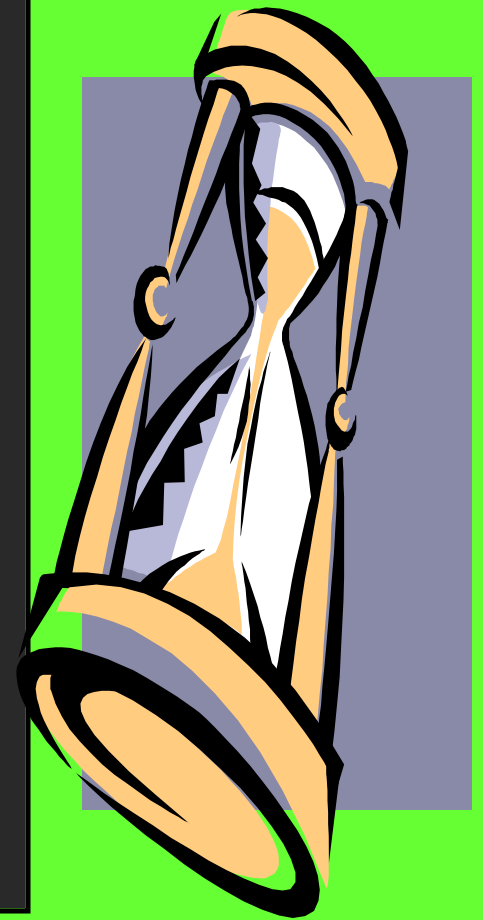
SOME MEGATRENDS

■ **Megatrends shape other trends**
- ◆ **Society continues to store more knowledge on the WEB**
- ◆ **Computers continue to get more capable**
- ◆ **More people get advanced education**
- ◆ **People live longer productively**

FORESIGHT - 1

➤ **FORECASTING – 1) a method for translating past experience into estimates of the future; 2) a method for analyzing future possibilities to develop strategies to plan for more desirable futures.**

➤ **. The future is malleable:**
  ➤ **It is not preordained**
  ➤ **Many possibilities exist for any future time period**
 ➤ **The future can be changed**
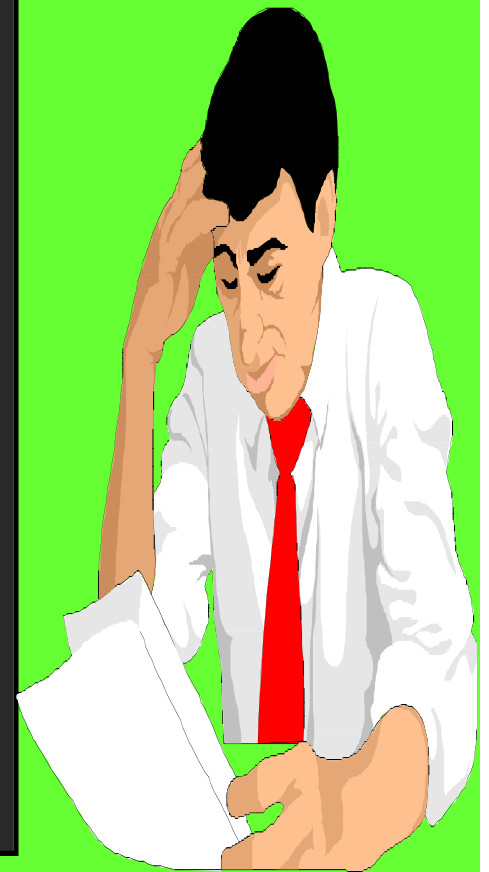
FORECASTING USING TRENDS - 1

- **In trend analysis, studies are made to find how the area being forecasted changed in the past :**
  - ◆ **Then the found rate of change is extrapolated into the future**
- **A trend forecast, is the "best" estimate of the short-range future to anticipate**
- **It normally gives an erroneous picture for the long-range future**
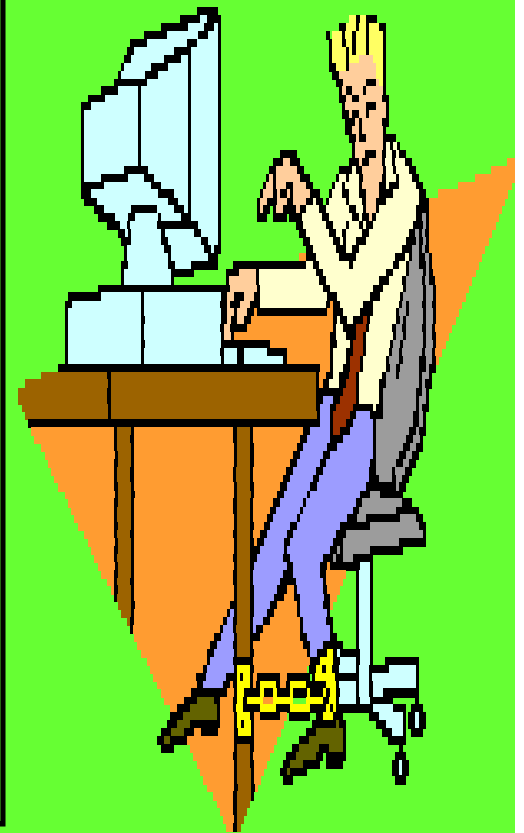
FORECASTING USING TRENDS - 2

■ **Let's forecast future computers :**

◆ **The rate of advance has been doubling computer capability every 2 years**

◆ **If computers continue to advance at the same rate :**

◆ **Then they will be 1000 times more capable by the year 2024!**
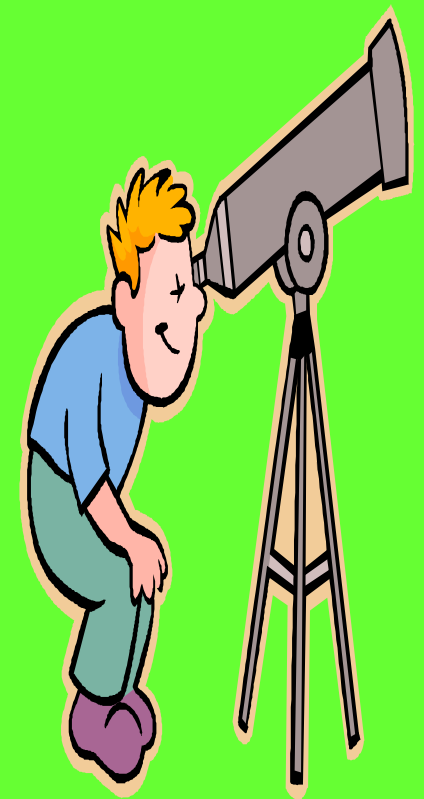
FORESIGHT - 1

- ❑ **Identify & Extrapolating Trends**
- ❑ **Identifying Emerging Issues**
- ❑ **Identifying Forces-of-Change**
- ❑ **Identifying Possible Breakthroughs**
- ❑ **Scanning, Monitoring, and Forecasting**
- ❑ **Challenging Assumptions & Plans**
- ❑ **Conducting issue Vulnerability Audits**
- ❑ **Developing & Writing Scenarios**

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BEFORE YOU FORECAST - 1

■ **Key questions which must be answered before making a forecast:**

◆ **what is the purpose of the forecast?**

◆ **what specifically do we wish to forecast?**

◆ **how important is the past in predicting the future?**

◆ **what method or methods will be used to make the forecast?**

◆ **What could change the forecast?**

FORECASTING USING TRENDS - 3

■ **Lets forecast the average persons life expectancy trends:**

◆ **1900 – It was about 35 years**

◆ **2000 – it was about 75 years**

◆ **If the same rate of increase continues, then in:**

◆ **2100 – The average person could reach 150 years of age**
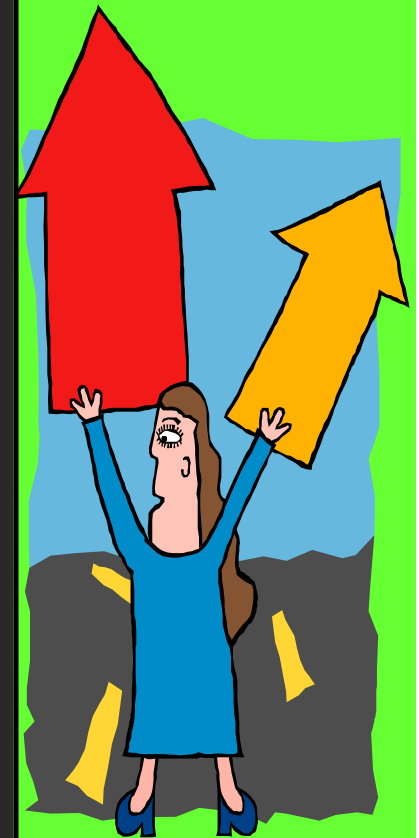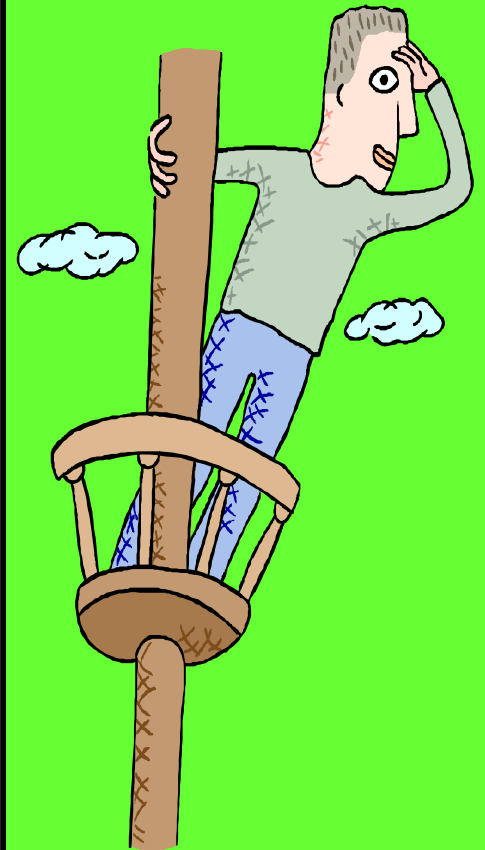
BEFORE YOU FORECAST - 2

■ **Key decision which must be answered before making a forecast:**

◆ **What is the forecasting horizon?:**

➔ **long-term: more than 10 years**

➔ **medium-term: up to 5 years**

➔ **short-term: months to a year**

SOME FORECASTING METHODS

- **Trend Analysis**
- **Delphi Analysis**
- **Forces-of-Change Analysis**
- **Issue Analysis of Projected Threats & Opportunities**
- **Forecasts of Unintended Consequences**
- **Future Impacts & Consequences Analysis**
- **"What Ifs" Investigations**

FORECASTING IS PROJECTING EVIDENCE

- *Evidence from Trends*
- *Evidence from Alternative Future Possibilities*
- *Evidence from Plans, Strategies, and Actions Creating Futures*
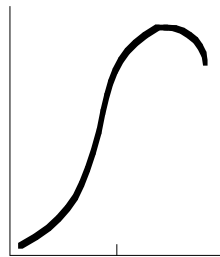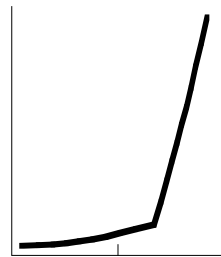- *Evidence from Issues*
- *Evidence from Changes*

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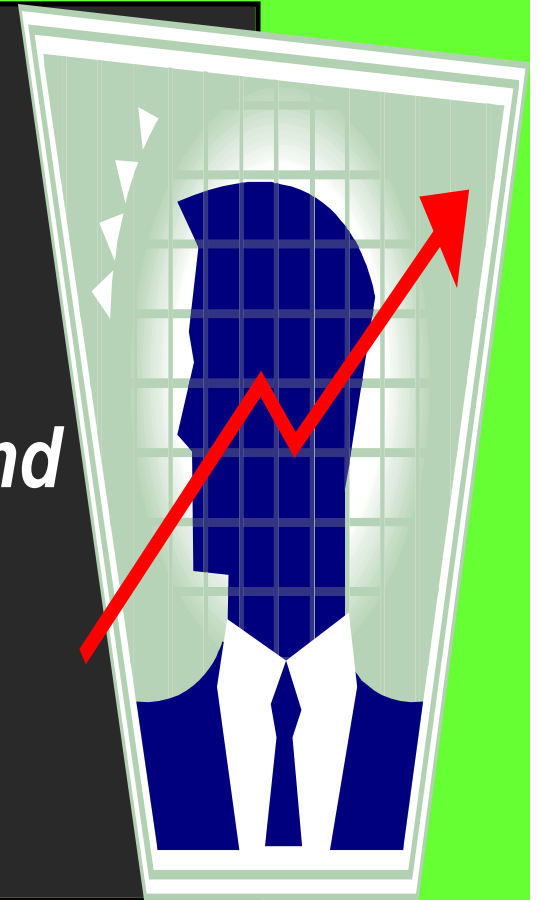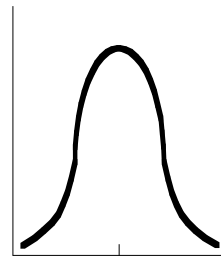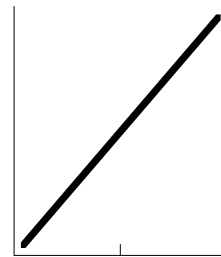
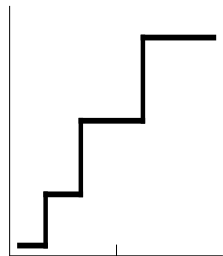# FUTURE/CHANGE TREND PATHS

Trend Shapes
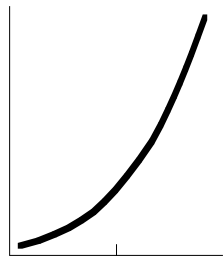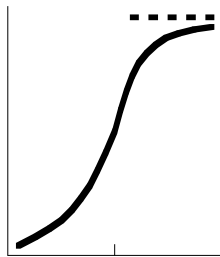
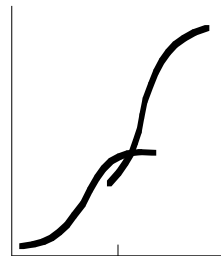| J-Curve	Limit	Down Turn	Up Turn	Life Cycle	Constant
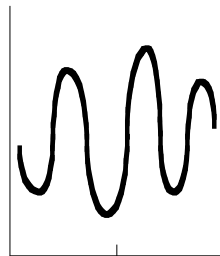
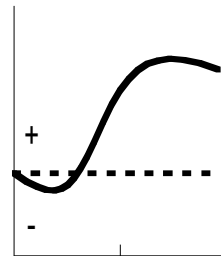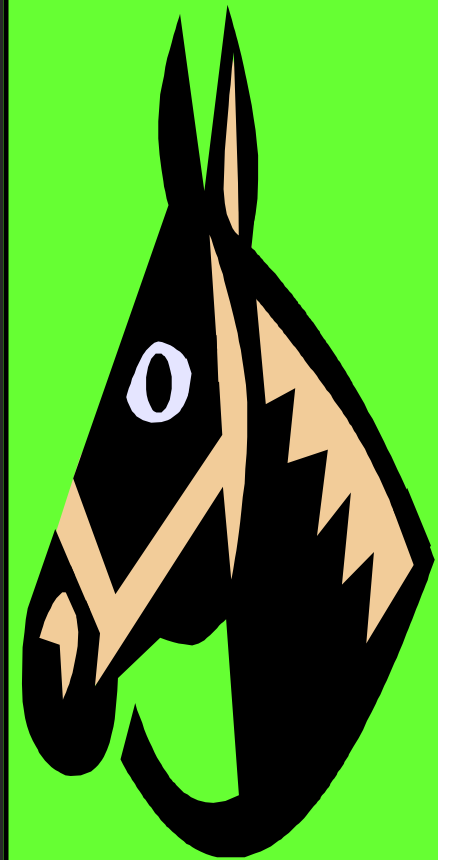| Step	Bumpy	Cyclic	Breakthru	Bifurcated	Profit-Loss
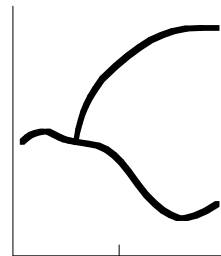
TRENDS TOWARD FASTER HORSES

- WILD HORSES FROM THE PLAINS
- FOOD, TRAINING, GROOMING
- BRED TO HAVE LONGER LEGS
- BRED FOR LARGER LEG MUSCLES
- BRED WITH RACE HORSES
- DRUGS
- FUTURE: RACE HORSE CLONES
- FUTURE: BIO-REENGINEERED

COMPUTER HARDWARE PER GENERATION TRENDS

- COMPUTER HW TECHNOLOGY ROAD MAP:
- 1ST GENERATION: VACUUM TUBES
- 2ND DISCRETE TRANSISTORS
- 3RD INTEGRATED CIRCUITS
- 4TH SILICON CHIPS
- 5TH ARTIFICIAL INTELLIGENCE
  FUTURE
- 6TH NANOTECH & BIO CHIPS
- 7TH QUANTUM CHIPS

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WEAPON TRENDS

- ROCKS, CLUBS, STICKS, & SPEARS
- SWORDS
- BOW & ARROW
- SINGLE SHOT GUNS
- SHELLS & BOMBS
- REPEATER RIFLES
- AUTOMATIC WITH CLIP GUNS
- A-BOMB & H-BOMB
- SPACE & BIO-WEAPONS
- NON-LETHAL WEAPONS & RAY GUNS

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MEDICAL TRENDS

- Herbs & potions
- Bleeding
- Hospitals
- Operations
- Sanitation
- Pharmaceuticals
- Antibiotics

- Transplants
- Targeted drugs to disease site
- Non-blood letting body repairs
- Genetic reengineered
- Brain enhancement