Challenges of Building Personal Robots

Steve Cousins
Industrial Robotics

1960  2010
Personal Robotics

Industrial Robotics

1960  2010  2060
Task-Centered (Roomba)

Be There
Remote Presence
Task-Centered (Roomba)

Be There
Remote Presence

Act There
Remote Action, Manipulation
Task-Centered (Roomba)

Be There
Remote Presence

Act There
Remote Action, Manipulation

Versatility
Automaton
Catalyst

Required Engineering

Core Research

Worst Case

With ROS & PR2

Tuesday, August 23, 2011
Alto Computer
Xerox PARC
(1973)
Technical Challenges

- Human-robot interaction
- Mobility
- Manipulation
- Perception
- Complex real-time control
Wish List...
Robot Batteries Never Last Long Enough
Huge Shared-memory Compute
Fast Communication
GPUs... with Ubuntu support
Less (or no) Wires
Hobbyist Access
Specialized Processors
Cool Chips
Questions?