



Roomba

By Russ McGuire - russ.mcguire@gmail.com

Every year at this time, I'm tempted by new technology choices as my wife asks "What do you want for Christmas?" The Roomba is not new, in fact, we've had one in our home for over five years, but the vacuuming robot is probably the most recognized example of how robotics are increasingly prevalent in our lives.

Are there implications from this trend that we, as Christian technologists, should be aware of? What opportunities do robots create for ministry? Are there dangers that we should be concerned about?

What are consumer robots?

According to Wikipedia, a robot is "a mechanical or virtual agent, usually an electro-mechanical machine that is guided by a computer program or electronic circuitry." Robots were often featured in science fiction, perhaps most famously by Isaac Asimov.

Robots can be remote controlled, programmed, or autonomous – meaning that they control themselves. In reality, at least for now, autonomous robots are really programmed with very sophisticated programs that include instructions for how to deal with discovered changes in the environment and how to deal with uncertainty.

Robots have been used in manufacturing for decades, however, unlike science fiction heroes and villains, industrial robots do not look like humans. Today, most factories are heavily automated using programmed robotics.

The Roomba brought practical robotic automation into the home. Roomba is a brand of robotic vacuum cleaners marketed by iRobot. The first Roomba was introduced over a decade ago and millions have been sold. Over the years, many enhancements and new models have been developed by iRobot.

Roombas are programmed to be fairly autonomous. They run on their own and as they discover the environment they are vacuuming using various sensors, they adjust their path. They "remember" what they've vacuumed and keep going until they've cleaned the entire room, or until their battery dies. Hobbyists found ways to hack early

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models – a move that iRobot embraced by making it easier for developers to write software to monitor the sensors in the robot and control its movements.

Based on the success of the Roomba, new entrants have introduced competing products. In our home, we also have a Mint hardfloor vacuum. Other leading robotic vacuums on the market include ones from LG and Neato.

Robotics have also become increasingly common in children's toys. Over the years, state of the art has advanced from [Tickle Me Elmo](#) to [Pleo the Dinosaur](#) to [RoboMe](#), with increasing adaptability and personality. But perhaps the most interesting children's robotics product has been the line of [Lego Mindstorms](#) that make it easy for kids to build and program robots to perform various tasks.

In many ways, even our automobiles are becoming increasingly robotic for our safety. Cruise control has been available for cars for decades, but recently, with the addition of a number of sensors, new features give increasing control of the car to the computer brains within. My latest car has adaptive cruise control, which adapts to the speed of the traffic around me. Assistive braking helps me stop the car when I'm approaching stopped vehicles too

rapidly, and even at low speeds the car keeps me from running into things in front of me. A lane keeping system also helps me stay in my lane. All of these advances are moving us towards autonomous vehicles – cars that drive themselves.

Taking autonomous vehicles to the next step, earlier this month Amazon's CEO Jeff Bezos announced that the company was working on delivering products within 30 minutes using a [robotic helicopter](#). Although years away from feasibility, the fact that a major retailer is seriously considering it indicates how pervasive and acceptable robotics is becoming in the consumer mindset.

Although not a consumer product, I also recently "attended" a distant meeting as a robot. I sat in my office in Kansas, controlling a robot in California. The webcam on my computer was

used to display my face to the folks I was interacting with. Although far from the same as being there, this approach did allow me to follow along with the activities better than a simple video conference.

How can robotics help in ministry?

It's hard to imagine uses for robotics in our local church. However, as the cost of robots continues to come down, I imagine that they could become useful in ministry, especially serving poor communities in developing countries. Robots could help find and harvest food. Robots could help provide education. As the technology improves, robots could also help in providing higher quality healthcare, perhaps even allowing trained doctors to perform surgeries from thousands of miles away.

What is dangerous about robotics?

I see two primary dangers related to robots.

The first is the classic fear that robots will take over the world. In his science fiction writing, Isaac Asimov introduced the Three Laws of Robotics:

1. A robot may not injure a human being or,

through inaction, allow a human being to come to harm.

2. A robot must obey the orders given to it by human beings, except where such orders would conflict with the First Law.
3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

Of course, these laws are merely wishful thinking, since fallen man is the maker of robotics technology, meaning that our evil nature purposefully introduces sin into our creations, and our imperfection allows programming bugs to thwart even our good intentions.

Roomba maker, iRobot, probably makes more money selling robots to the military than it does selling to consumers. To date, their military robots aren't sold for killing purposes, but they certainly would be [capable](#) of doing so. We certainly have heard plenty of stories of [drone aircraft](#) taking out enemies of the state.

But I see the second danger as greater than the first, for it represents rebellion against God's creative order. Roboethics is a growing field and the calls for Robot Rights are growing louder and more frequent. As we've seen with animal rights, activists are now equating robots with humans. As the web site for the American Society for the Prevention of Cruelty to Robots puts it "Robots are people too!"

In the opening chapter, God's Word tells us "Then God said, 'Let Us make man in Our image, according to Our likeness; let them have dominion over the fish of the sea, over the birds of the air, and over the cattle, over all the earth and over every creeping thing that creeps on the earth.' So God created man in His own image; in the image of God He created him; male and female He

created them. Then God blessed them, and God said to them, 'Be fruitful and multiply; fill the earth and subdue it; have dominion over the fish of the sea, over the birds of the air, and over every living thing that moves on the earth.'" (Genesis 1:26-28)

God created mankind differently from the rest of creation and gave us dominion over the rest of creation. He created us to worship Him, but in our fallen state, as Paul tells us, we "exchanged the truth of God for the lie, and worshiped and served the creature rather than the Creator, who is blessed forever. Amen." (Romans 1:25)



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This is the greatest danger that robots represent.

It is my hope and prayer that these articles on the power and danger of technology will encourage you in your daily walk with Christ. Whether it is the printing press, radio, television, personal computers, the Internet, the Cloud, smartphones, or even robots, new technologies continue to advance our ability to know God and to serve Him, wherever we go.

Russ McGuire is an executive for a Fortune 100 company and the founder/co-founder of three technology start-ups. His latest entrepreneurial venture is CXfriends (<https://cxfriends.com>), a social network for Christian families which is being built and run by four homeschooled students under Russ' direction.



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