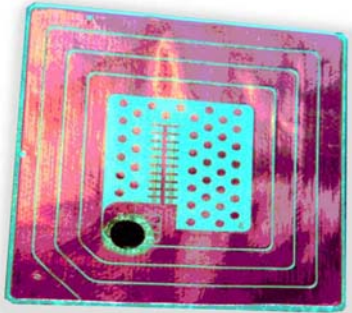


RFID: Technology That Empowers Consumers

Why RFID will improve the lives of every consumer and what companies have to fear

By Mark Roberti
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What is radio frequency identification?



The RFID tag is made up of several parts:

- A microchip that stores data and modulates and demodulates analog radio waves
- An antenna that gathers RF energy from a reader and reflects back a signal
- A protective layer that can be used to create a label or other type of transponder



The RFID reader also has several parts:

- A digital signal processor and a microcontroller
- An internal or external antenna
- A network or serial port connection
- Input/output ports for linking to other devices



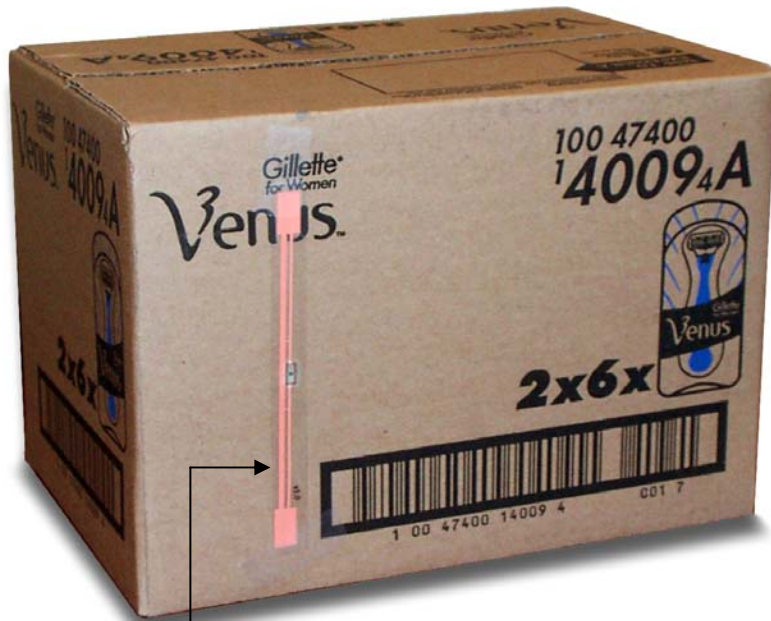
How it works

- The reader emits radio waves
- The tag converts the radio waves into electricity to power up the microchip
- The microchip modulates and demodulates the antenna and sends back long and short waves or waves of different amplitude
- The reader converts these waves into a string of ones and zeros
- A computer turns the ones and zeros into digital information



Why is RFID taking off now?

- Prices of tags and readers are falling
- Standards are emerging
- Internet and other infrastructure make it possible to make use of RFID data
- Competition is forcing companies to become ever more efficient



RFID tag

Facts you should know:

- Tags are **not** the size of a grain of sand.
- Low-cost RFID tags contain only a serial number that's **meaningless** without access to the database where associated information is stored.
- More than **50 million** Americans carry a passive RFID tag every day.
- There has never been a **single** report of someone's privacy being invaded through **surreptitious** scanning.



More facts you should know:

- Today's tags are **basic** because of the need to keep costs down.
- The technology will evolve in ways the market dictates. There will be read-write tags capable of storing **encrypted data**.
- Consumers will be able to **wipe out tags** and enter their own information for their own uses.



Consumer Benefits:

There are far too many benefits, such as fewer counterfeit drugs on the market, to list here, so let's look at the big picture:

- RFID is a data collection tool.
- Companies can use it to collect data on consumers.
- Consumers can use it to collect data on companies.

Today consumers do not know very much about the products they buy. RFID will change that by creating an audit trail.



- There will be a record of all **raw materials** and **every part** a company buys
- There will be a record of **every place** a product has been
- There will be a record of **every transaction** for every part and every item.
- There will be a record of the **condition** of every product sold.

What this means

It's companies, not consumers, who will be watched by so-called "spy chips."

- Consumers will be able to **demand better information** about the products they buy
- Lawyers suing on behalf of consumers will be able to **subpoena a complete record** to prove malfeasance
- Regulators will be able to **prove** companies failed to comply with the law
- RFID is **fetal heart monitoring** for products

Who has the **power**?

Can companies **force** people to accept that data will be collected on them?

Can consumers **demand** companies give up data about their products?





Consumers have a **choice**:

- They can choose to shop at companies that **do not collect data on them**.
- They can choose to buy from those companies that **provide detailed information** on their products.



Companies have no choice.

- They **cannot force** consumers to accept the infringement of their privacy.
- They **cannot refuse** to give information to customers who want it.
- Companies that **abuse consumer privacy** or break the law will have no where to hide. They will pay a **huge economic price**.

INFORMATION IS POWER

Information is the lifeblood of a democratic capitalist society. Without good information, consumers can't make good choices.

- RFID is the **ultimate tool** in the collection of data.
- In the relationship between buyers and sellers, it will be **consumers**, not the retailers, that **will benefit** from RFID.
- Regulations might be needed, but they should be introduced **based on reality**, not **theoretical abuses** dreamed up by people who know nothing about the way businesses operate.

RFID is a tool

It can be used for good or for ill.

The goal should **not** be to stop it.

The goal should be to **minimize abuses** and **maximize the benefits** for business and consumers.

Thank you

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