ក្រសួងសេដ្ឋកិច្ចនិងហិរញ្ញវត្ថុ
អគ្គលេខាធិការដ្ឋាន
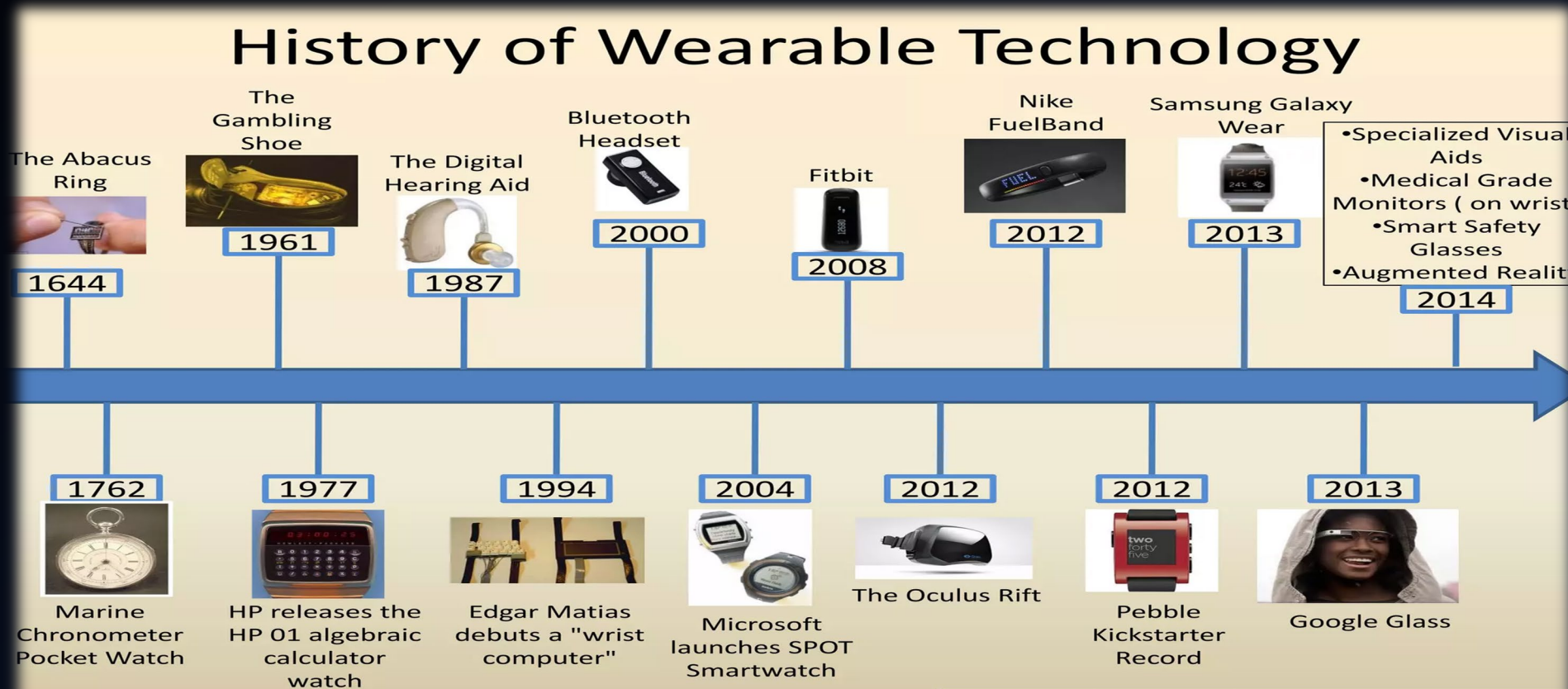នាយកដ្ឋានបច្ចេកវិទ្យាព័ត៌មាន

Wearable Technology

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Outline

- Introduction to Wearable Technology

- Types of Wearable Devices

- Applications of Wearable Technology

- Advantages and Potential Challenges

- Future Trends

Introduction to Wearable Technology

Wearable technology (commonly called wearables) is a category of electronic devices that can be worn as accessories, embedded in clothing, implanted in the user's body, or even tattooed on the skin.

History of Wearable Technology

- **The Abacus Ring** — 1644
- **The Gambling Shoe** — 1961
- **The Digital Hearing Aid** — 1987
- **Bluetooth Headset** — 2000
- **Fitbit** — 2008
- **Nike FuelBand** — 2012
- **Samsung Galaxy Wear** — 2013
- 2014:
  - Specialized Visual Aids
  - Medical Grade Monitors (on wrist)
  - Smart Safety Glasses
  - Augmented Reality

- **Marine Chronometer Pocket Watch** — 1762
- **HP releases the HP 01 algebraic calculator watch** — 1977
- **Edgar Matias debuts a "wrist computer"** — 1994
- **Microsoft launches SPOT Smartwatch** — 2004
- **The Oculus Rift** — 2012
- **Pebble Kickstarter Record** — 2012
- **Google Glass** — 2013

Source : Vandrico.com and
http://www.media.mit.edu/wearables/lizzy/timeline.html

Introduction to Wearable Technology (cont)

Introduction

A wearable can be categorized broadly into the following 6 categories:

Lifestyle	Entertainment	Medical
Includes Smart Watches, Smart Glasses and Devices used for Voice and Video calling, Gesture Control, etc.	Devices used for augmented reality, smart gloves, gesture controlled devices, etc.	Devices used for Cardiac Monitoring, HearingAid, Bionics, Remote monitoring of Patients, etc.
Fitness	**Gaming**	**Industrial**
Devices used for measuring heart rate, distance travelled, skin temperature, etc.	Devices that use augmented reality for gaming.	Devices that help in Hands-Free and Remote operation for business and industrial purposes.

Source : Vandrico.com
Some devices can fall into more than one Category.

The current trend is mostly towards activity monitors. Health has been a big driver for wearable technology thus far. It will be interesting to see how far Smart Watches go and how they are implemented in the workplace.

Use cases of Wearable Technology:

*In Australia, firefighters are being outfitted with a data-transmitting pill that can detect early signs of stress. The device was also used to measure skydiver Felix Baumgartner's vital signs during his world-record jump to earth from space

Healthcare Insurance companies may offer policy discounts for members who quantify their healthy lifestyles by wearing fitness-tracking devices
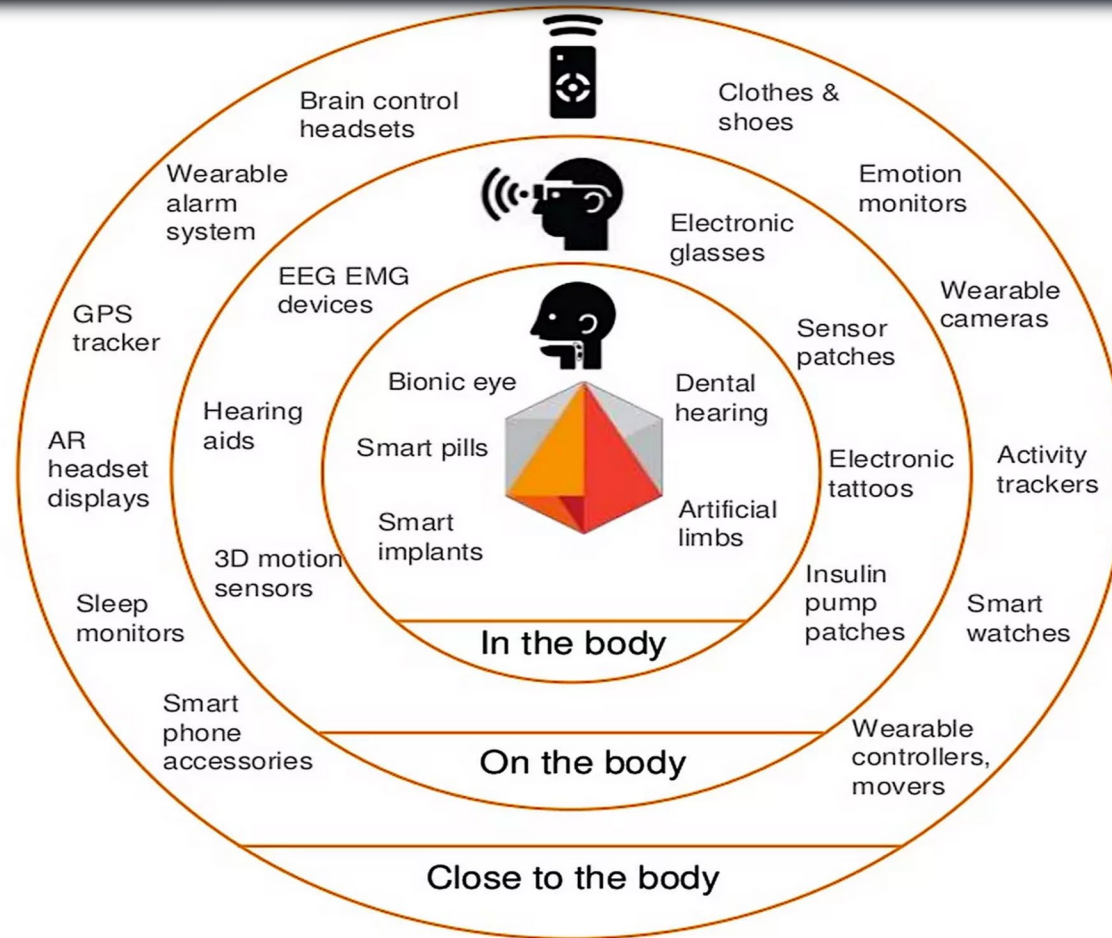
On manufacturing floors, worker can view metrics for an equipment on a smart watch. Augmented Reality Overlays in a warehouse can guide a worker to find, move, pick, pack and ship products.

Field Installation, service and maintenance professionals are being outfitted with smart glasses to access documentation, procedural tips, and skilled advice **

Types of Wearable Devices

- Smartwatches

- Fitness trackers

- Smart clothing

- Smart glasses

- Health monitoring devices

- Head-mounted display

- Implantable

- Smart rings

Types of Wearable Devices (cont)

Applications of Wearable Technology

- Health and Fitness

Monitoring physical activity, heart rate, sleep patterns.

Applications of Wearable Technology (cont)

- Healthcare

Remote patient monitoring, chronic disease management.

Applications of Wearable Technology (cont)

- Entertainment

Augmented Reality (AR) and
Virtual Reality (VR) headsets.

Advantages and Potential Challenges

- Health & Fitness Monitoring

- Convenient & Accessible

- Enhanced Productivity

- Safety & Security

- Improved Quality of Life

Advantages

Advantages and Potential Challenges (cont)

- Privacy Issues

- Battery Life

- costs

- Overdependence on Devices

- Technical Problems

Potential Challenges

Future Trends

- iSkin
Flexible, Stretchable and Visually Customizable On-Body Touch Sensors for Mobile Computing

Future Trends (cont)

- Smart shoes
could charge your phone's
battery while you rush to
work.

Future Trends (cont)

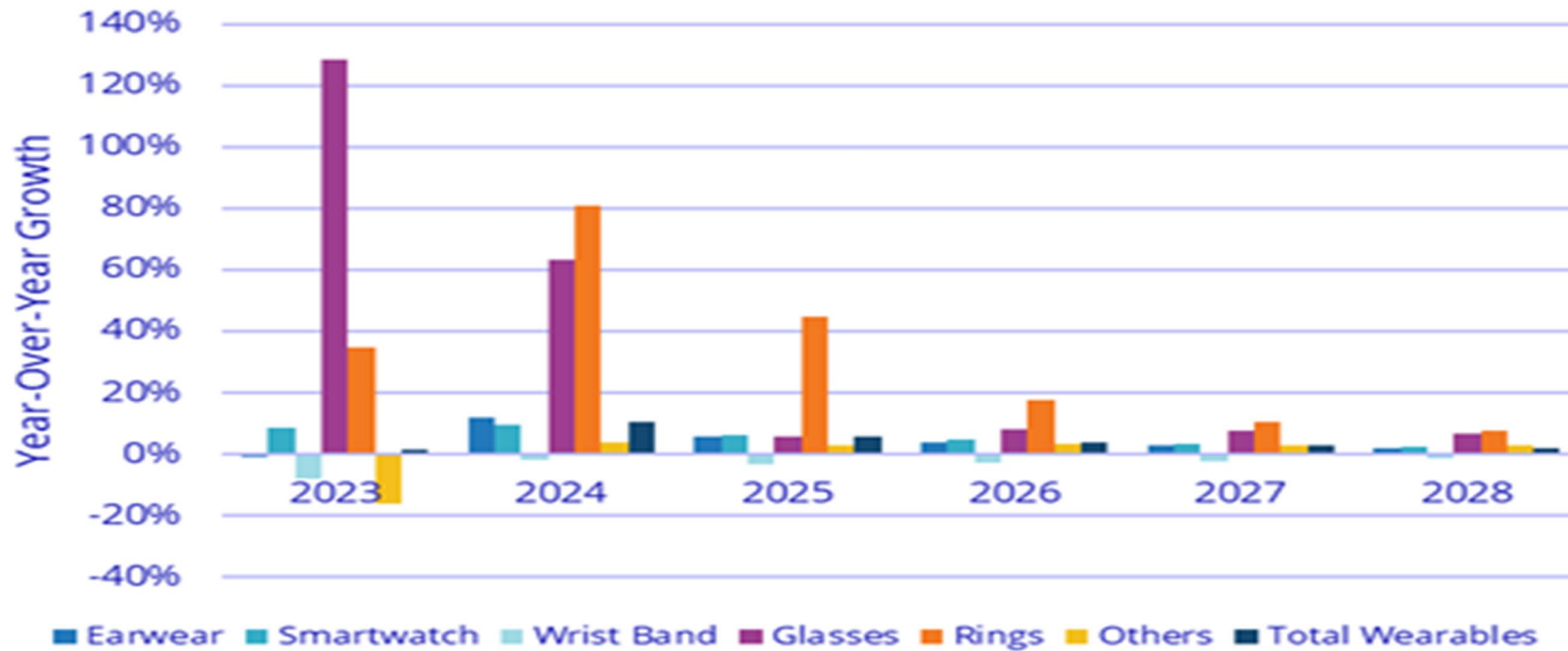- Intelligent earrings could find the perfect songs for your mood.

Future Trends (cont)

Thank You