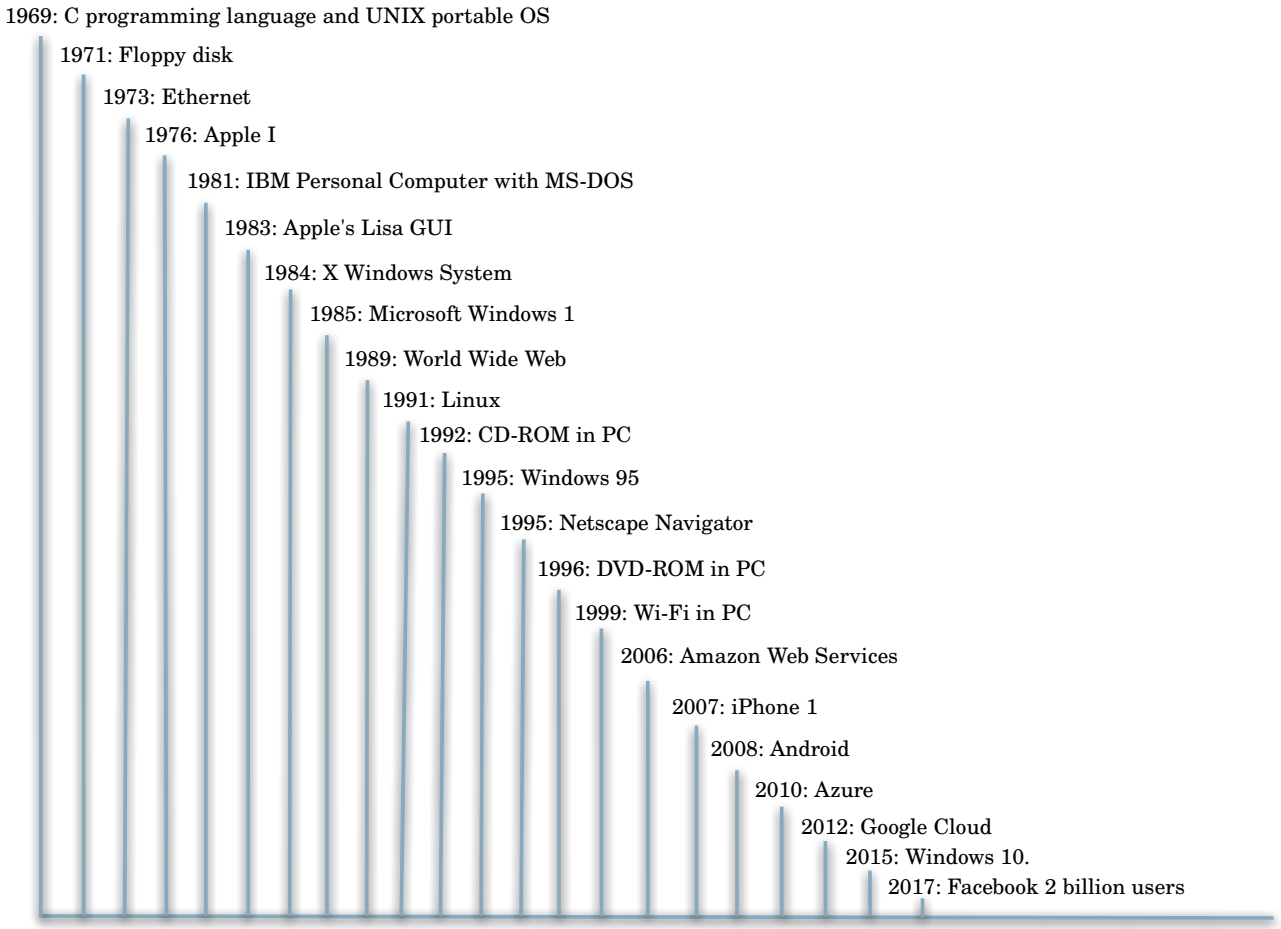
Evolution of Information Technology

Before and after the DevOps culture…

Brief History of Information Technology (bird's-eye view)



Evolution of Software Delivery

The importance of software delivery for End-User experience

Software for PC

Personal Computers

- 1970-1980s
  - Software was distributed primary on floppy diskettes
- 1990s
  - Software was distributed primary on compact disks
- 2000-2010
  - Software was distributed primary on CD and DVD
- 2010-Nowadays
  - Software is distributed primary thought internet

Web Applications

Web Applications

- Application software that is served by a web server
- End-User access the web application through a web browser
- Active internet connection

Web 1.0

- The first web pages
- Berners-Lee – “The read only web”
- Static content
- Searchable information

Web 2.0

- Berners-Lee – “The read-write web”
- Dramatically changed the landscape of the web
- Dynamic content generation
- Contribute content
- Interact and collaborate with other users

Software for Mobile Devices

Mobile Devices

- Mobile Devices are computers

- Mobile Operating Systems
  - Operating system for mobile devices
  - Combine features of a desktop OS with other features useful for handheld use
  - Two main competitors
    - Android
      - **2.7 million** apps
    - IOS
      - **1.82 million** apps
  - Traditional desktop OS is now a minority-used kind of OS

- In 2019, over 1.5 billion mobile phones were sold
- In 2019, over 261.24 million PCs and laptops were sold

Software in the Cloud

The new world…

Cloud Computing

- Computing resources provided as a service
- Result of evolution and adoption of
  - Existing technologies
  - Existing paradigms

Cloud Classifications

- Public
- Private
- Hybrid

Service Models

- Software as a service (SaaS)
- Platform as a service (PaaS)
- Infrastructure as a service (IaaS)

“Box Software” vs SaaS

- “Box Software”
  - A decade ago, it wasn’t unusual to buy software on a floppy, compact disk or dvd
  - You buy not only the media but a license
  - Manually install software on you server
  - Internet was expensive and not so reliable
  - Web wasn’t so mature
  - Release new version every few years
  - You need a lot of IT people to support infrastructure

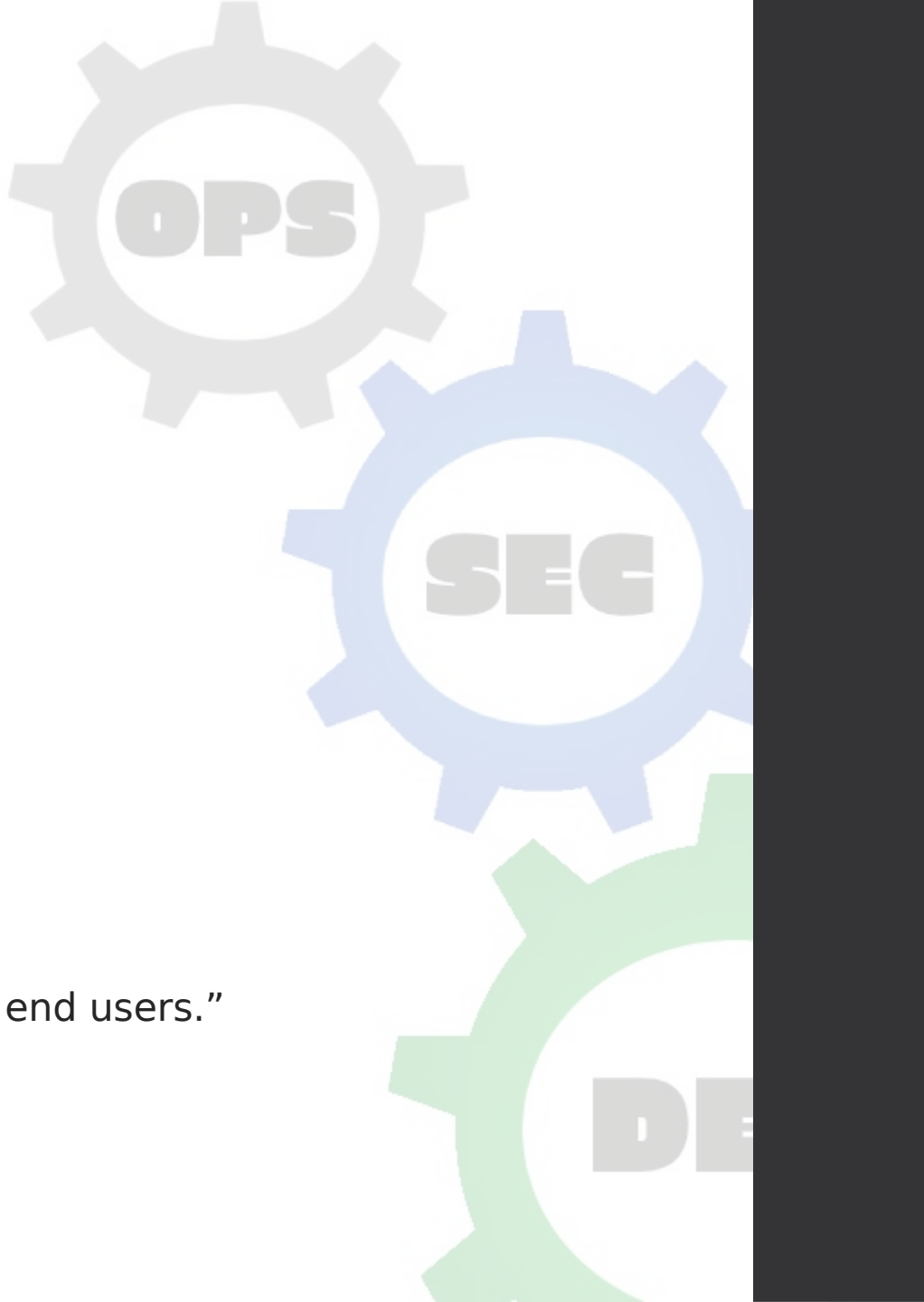
- Software as a Service (SaaS)
  - Type of cloud service model
  - Software over internet
  - Software on demand
  - Release new version very often
  - You need just few IT people to manage the software

The role of DevOps

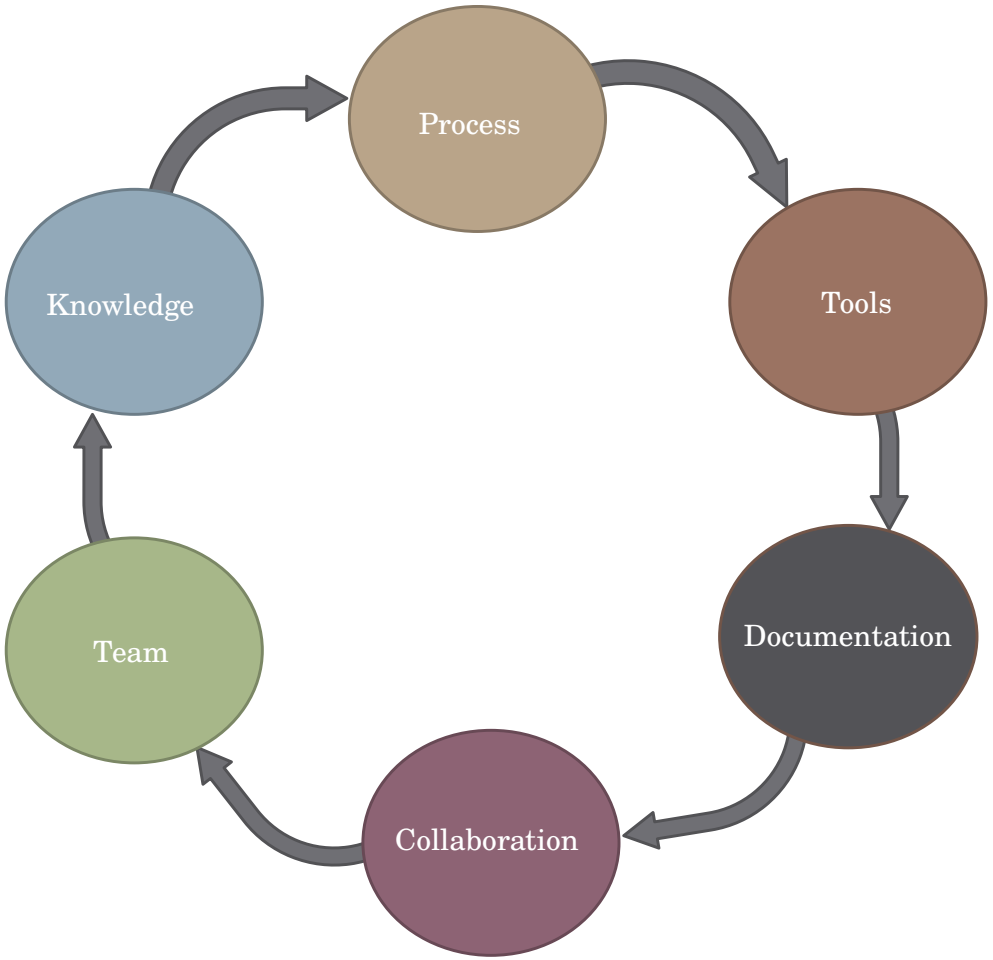
DevOps

- DevOps is an IT culture, movement or practice
- Cross functional product-based teams
  - Developers
  - QA Engineers
  - DB Engineers
  - Operations (Ops)
  - More…
- Collaboration and communication

- Donovan Brown (Microsoft)
  - “DevOps is the union of people, processes, and products
    to enable continuous delivery of value to our end users.”



DevOps


Process
Tools
Documentation
Collaboration
Team
Knowledge

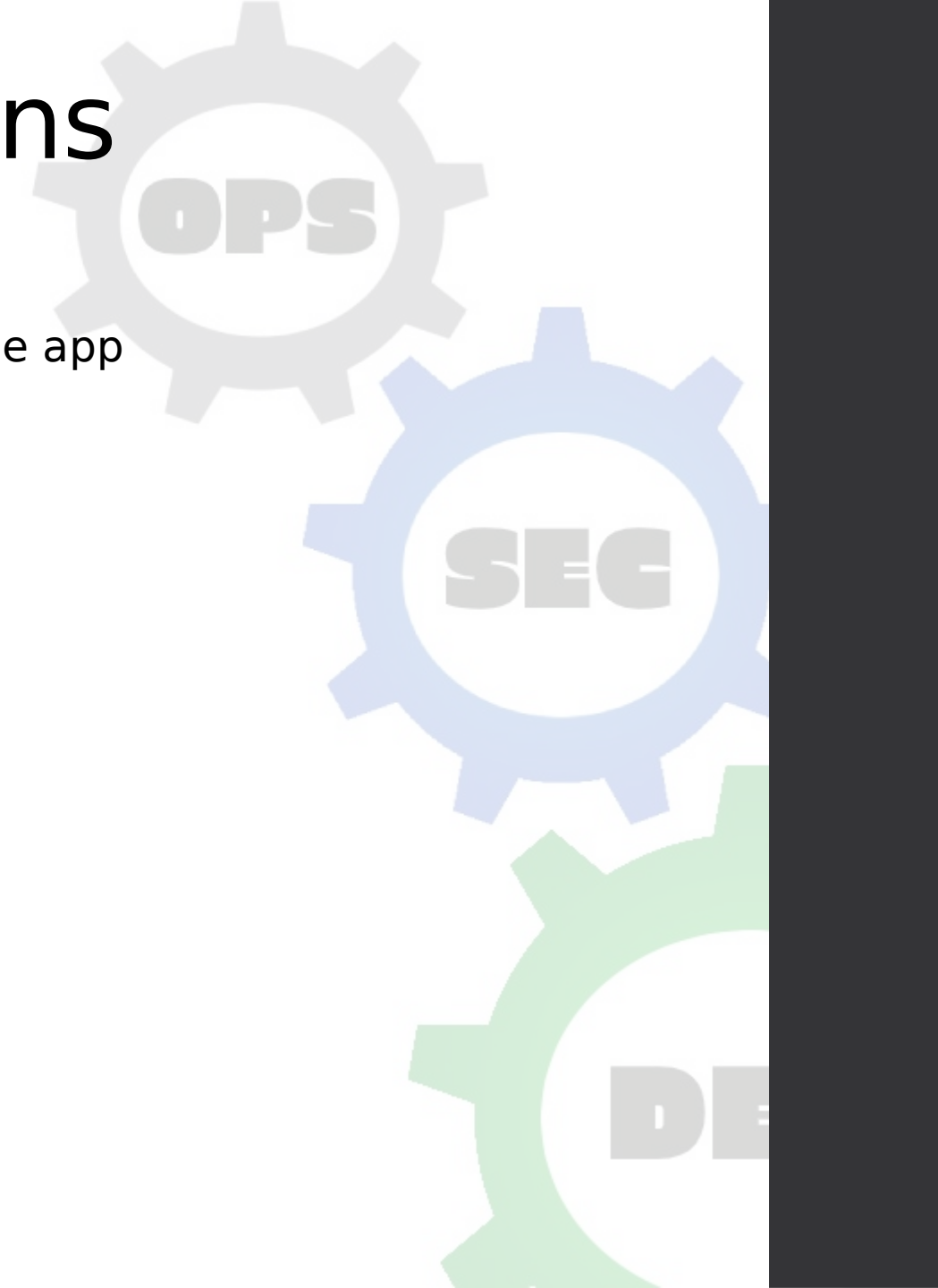

OPS
SEC

DevOps Practices

- Infrastructure as Code (IaC)
- Configuration Management
- Automated Testing
- Continuous Integration
- Continuous Delivery and Deployment
- Monitoring
- More...

Management Anti-Patterns

- “We are doing DevOps” without even understanding it
- DevOps is a person who is developing and supporting the app
- Changing Sysadmin job title to DevOps Engineer
- Creating a separate DevOps team
- My team responsibility ends here
  - Developers: I don’t care it works on my machine
  - Ops: How I’m suppose to support this crap
- Ops not involved early
- It is not just a tool or script
- Agile equals DevOps
- We cannot do DevOps
- DevOps is just a word



DevOps Challenges

- New tools stack
- Mindset change
- Break down silos