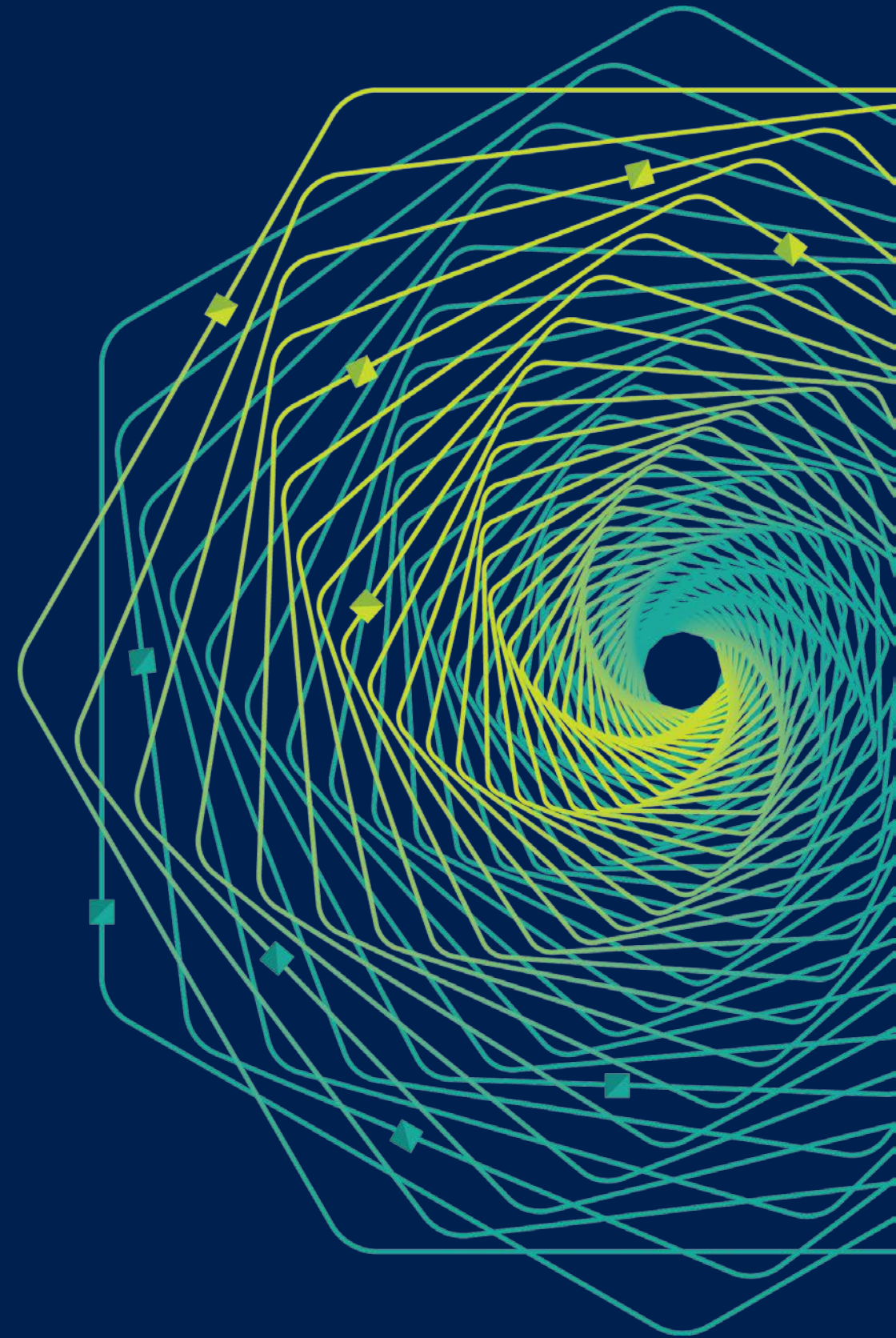




Research Faculty Summit 2018

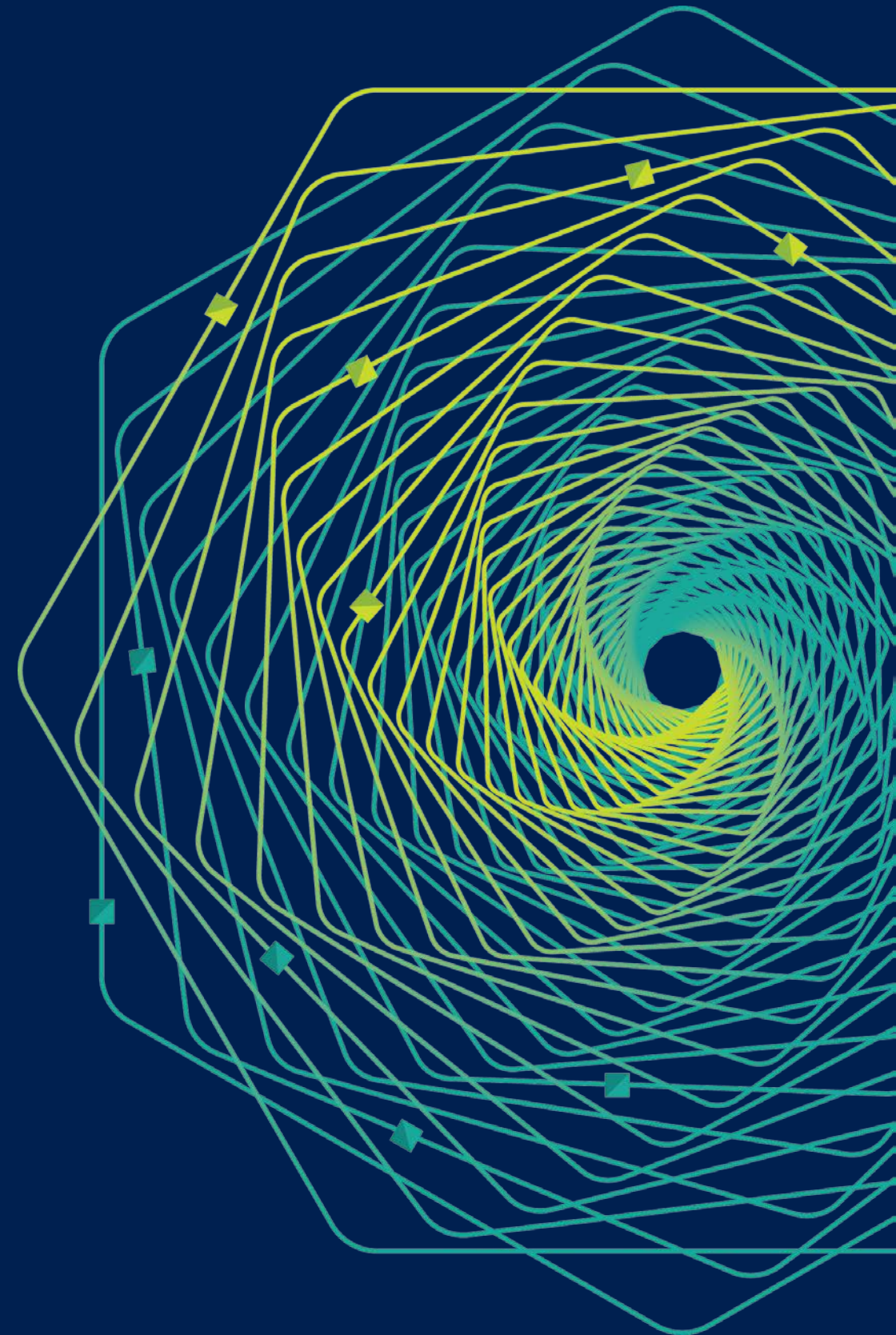
Systems | Fueling future disruptions



Office Rich Clients Continuous Deployment

Jennifer Beckmann

Principal Software Engineering Manager, Office Fundamentals

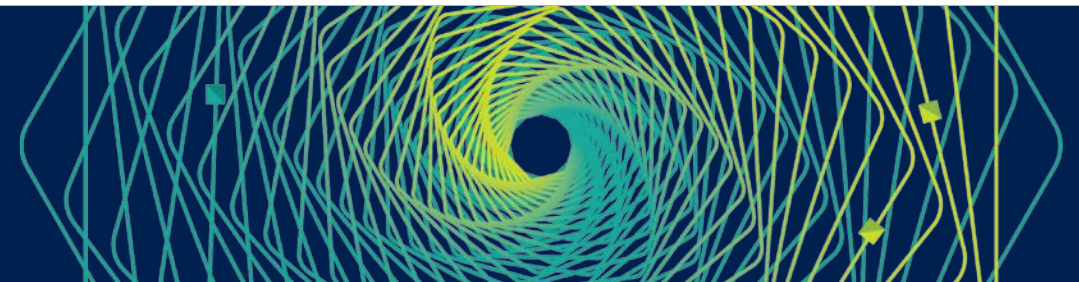




Office

 Word  PowerPoint  Excel

 OneNote  Outlook

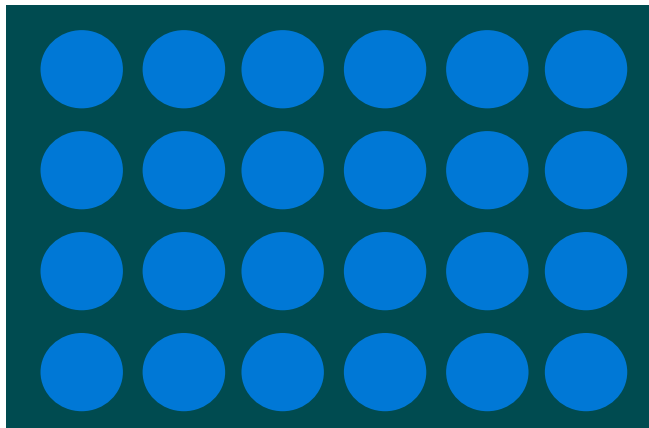


The Successful Legacy of Office

- Since 1990 Office apps have shipped about every 2-3 years

1 release

Every ~3 years,
many features at once



Windows Focused

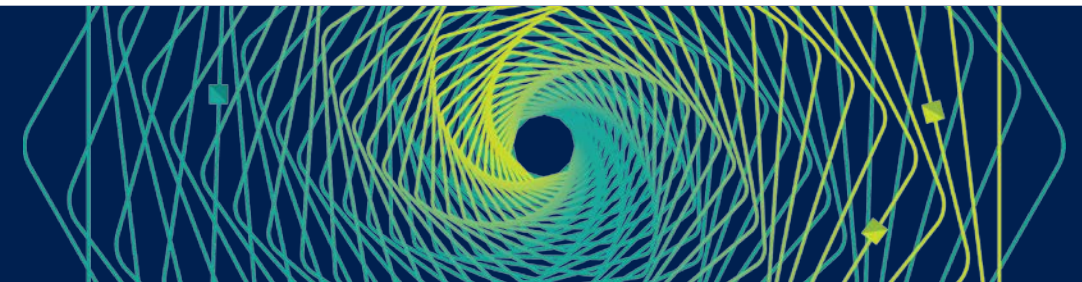
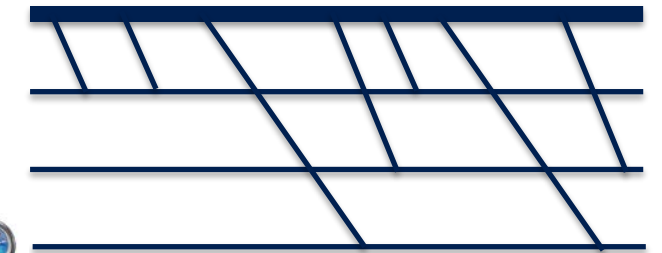
Windows and **Mac** both start in 1990

Web Version first shipped in 2008

iPhone and **Android** released in 2013

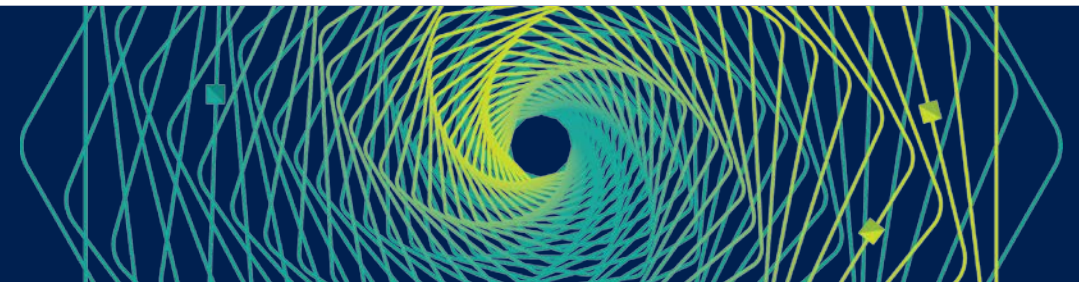
Forked Code

Each platform treated
independently



Office 2016 is different

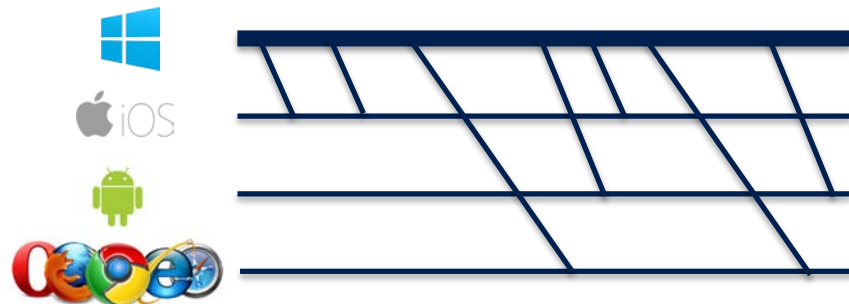
- Microsoft 2015 earnings report indicates the change in market
 - “Windows OEM Pro revenue decreased, primarily due to benefits realized from the **expiration of support for Windows XP** in the prior year, and **declines in the business PC market**”
 - “Office Consumer **revenue declined** \$249 million or 7%, reflecting the **transition of customers to Office 365** Consumer as well as continued **softness in the consumer PC market.**”
- Office 2016 shipped in October 2015
 - Transformation in the way Office is delivered to consumers was already underway



Office 2016: Modernizing Office Development

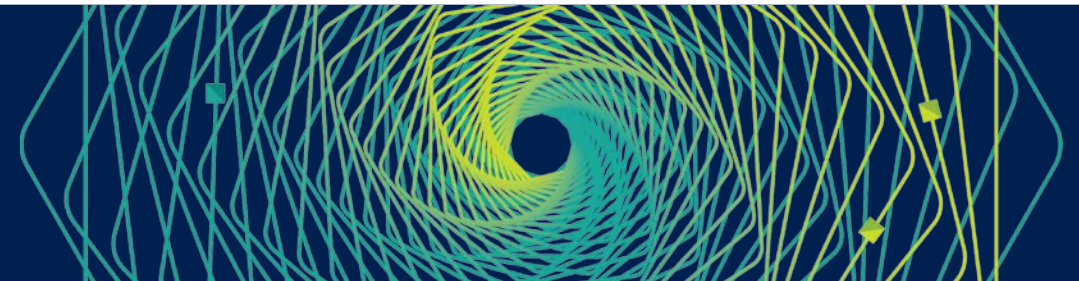
Forked Code

Each platform treated independently



Shared Code

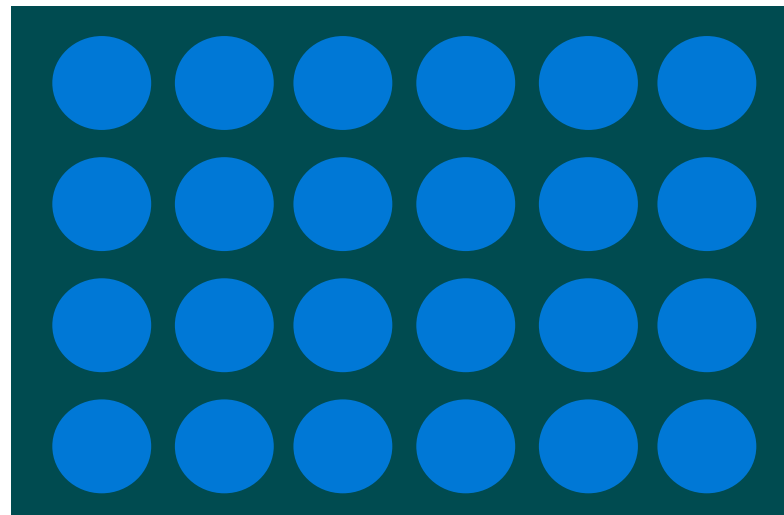
Each platform shares and works as one product



Office 2016: Modernizing Office Release

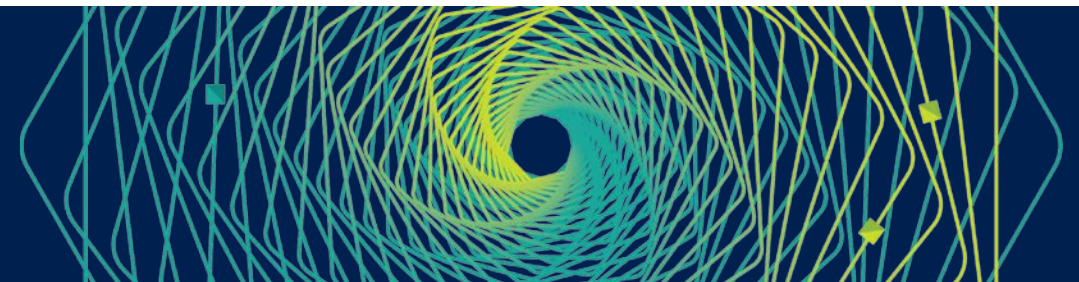
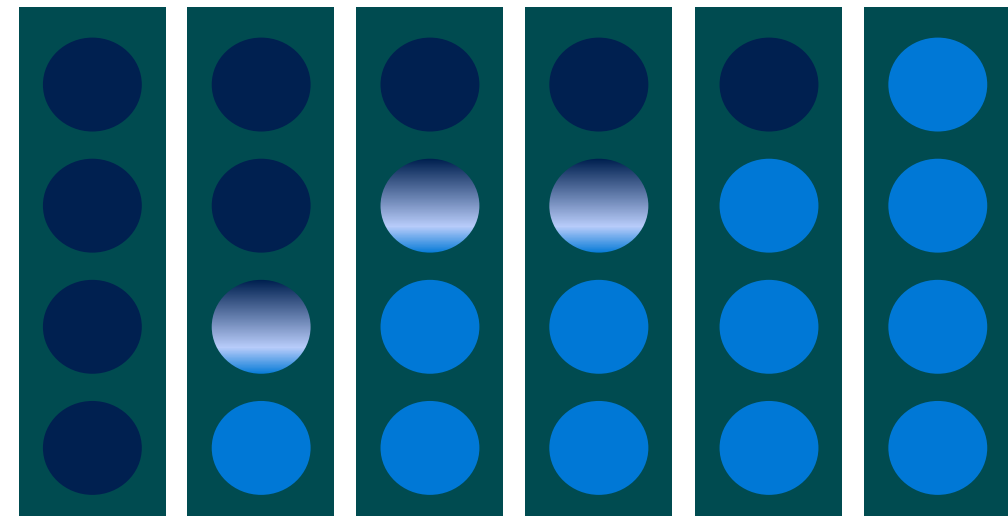
**1 release
every 3 years**

many features at once



**12 releases
every year**

features exposed gradually



Office 2016 Development By the Numbers

Checkins

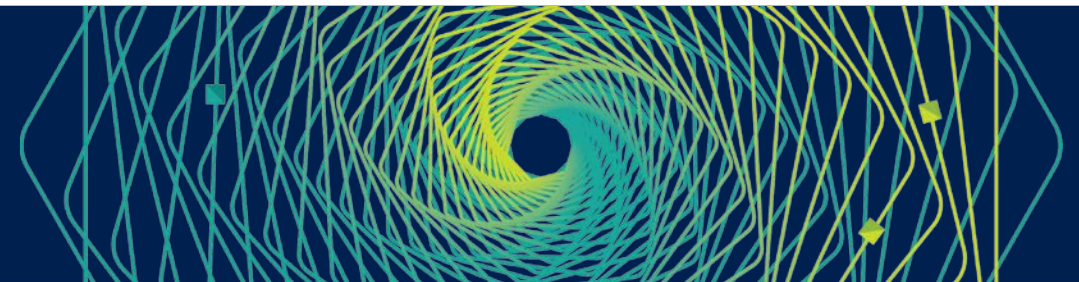
- 3.8k active engineers checking in
- One checkin every 20-25s peak
- Nearing 1k checkins per day

Codebase

- Over 500M total lines across
- Product code
- Automation
- Language proofing
- Tools and eng systems

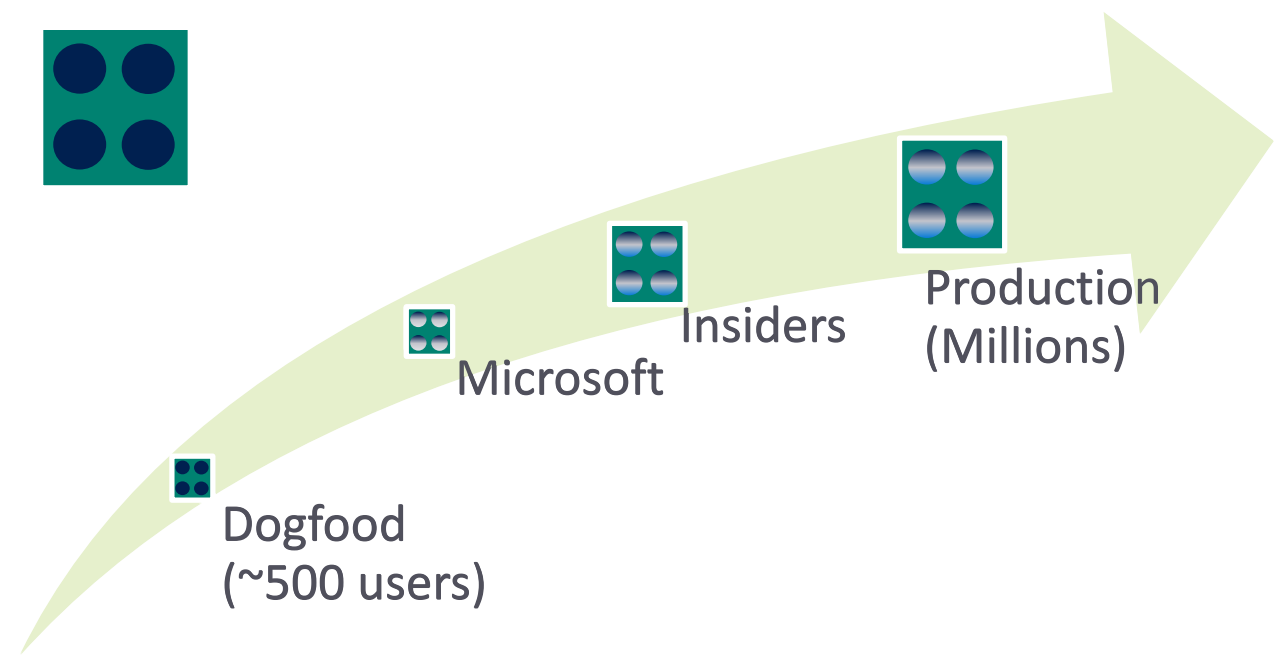
Test Suite

- Over 20k Jobs per day testing
- Tens of thousands scenarios
- 100k+ configurations

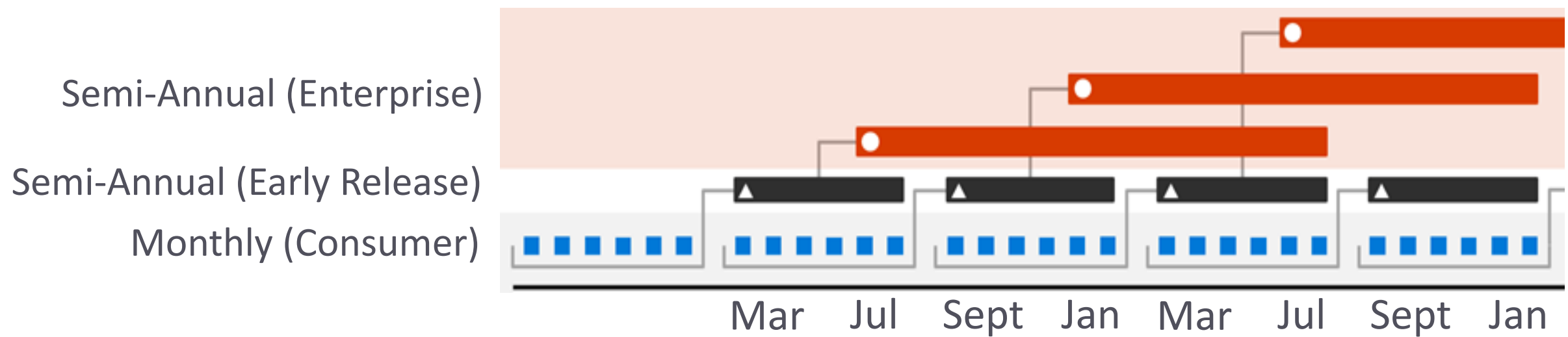


How do users get Office build releases and features?

- 1** Build candidate is ready and verified
- 2** Build is **released** to increasing audience sizes
- 3** **Features release** by % within the build

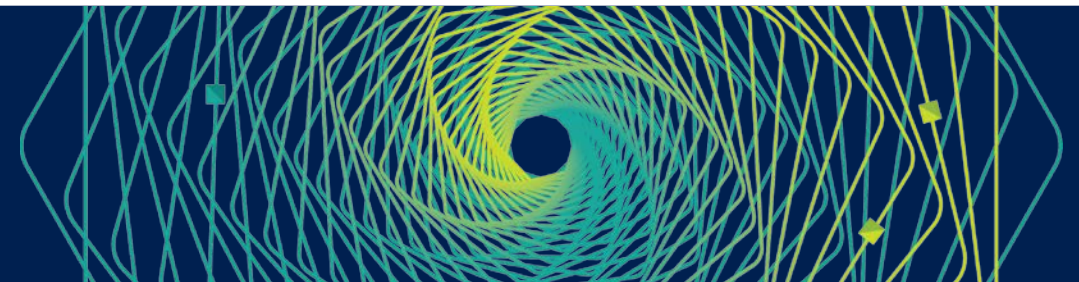


Channels split customers into more groups



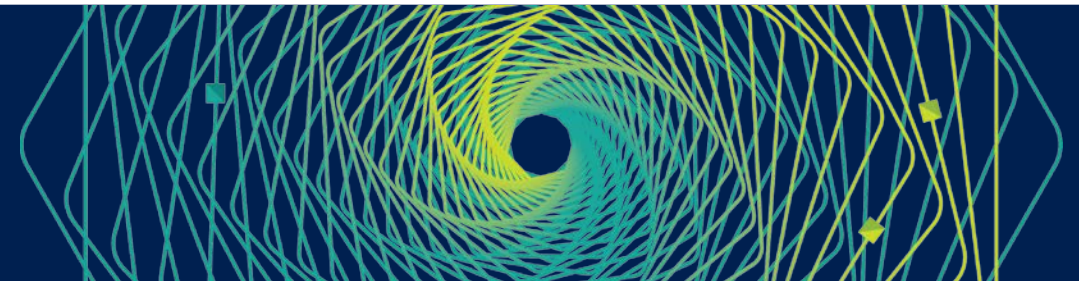
Huge Opportunities for Improvement and Optimization

- **Basics of CI/CD are missing – code base is older than the devs working on it**
 - *Fast Build and Release*: Builds and releases take a long time
 - *Micro Releases*: All apps ship as a suite
 - *Test Coverage*: Lack unit test coverage to catch regressions
 - *Big Data*: Missing instrumentation in code/lack of telemetry
 - *Dev Ops*: Slow adoption of new builds leaves hundreds of builds out in the wild
- **Lots of differences due to historical organizational structure**
 - Different platforms chose different technologies (i.e. instrumentation)
 - Different platforms have different philosophies



The Future for Office Development

- **Market pressures continue to push the speed of development**
 - Strong competitor in the Google Suite
 - Business pressures in Collaboration, Mobile, Web, Networks, ML/AI
 - GDPR, security, and privacy continues to be a focus area across Microsoft
- **New ways of developing Office experiences**
 - JavaScript Add-Ins as new way to develop and deploy
 - Service-based Experiences delivered in the clients



Thank you!

