

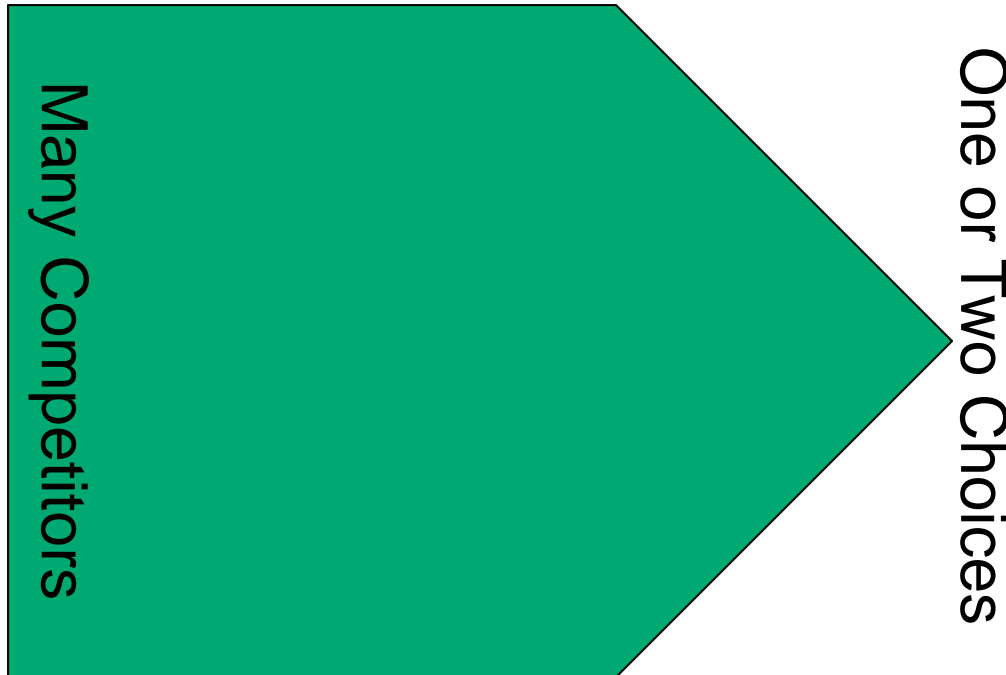
Service-based Frameworks

Brad Kizzort



PRODUCT VENDOR CHALLENGES

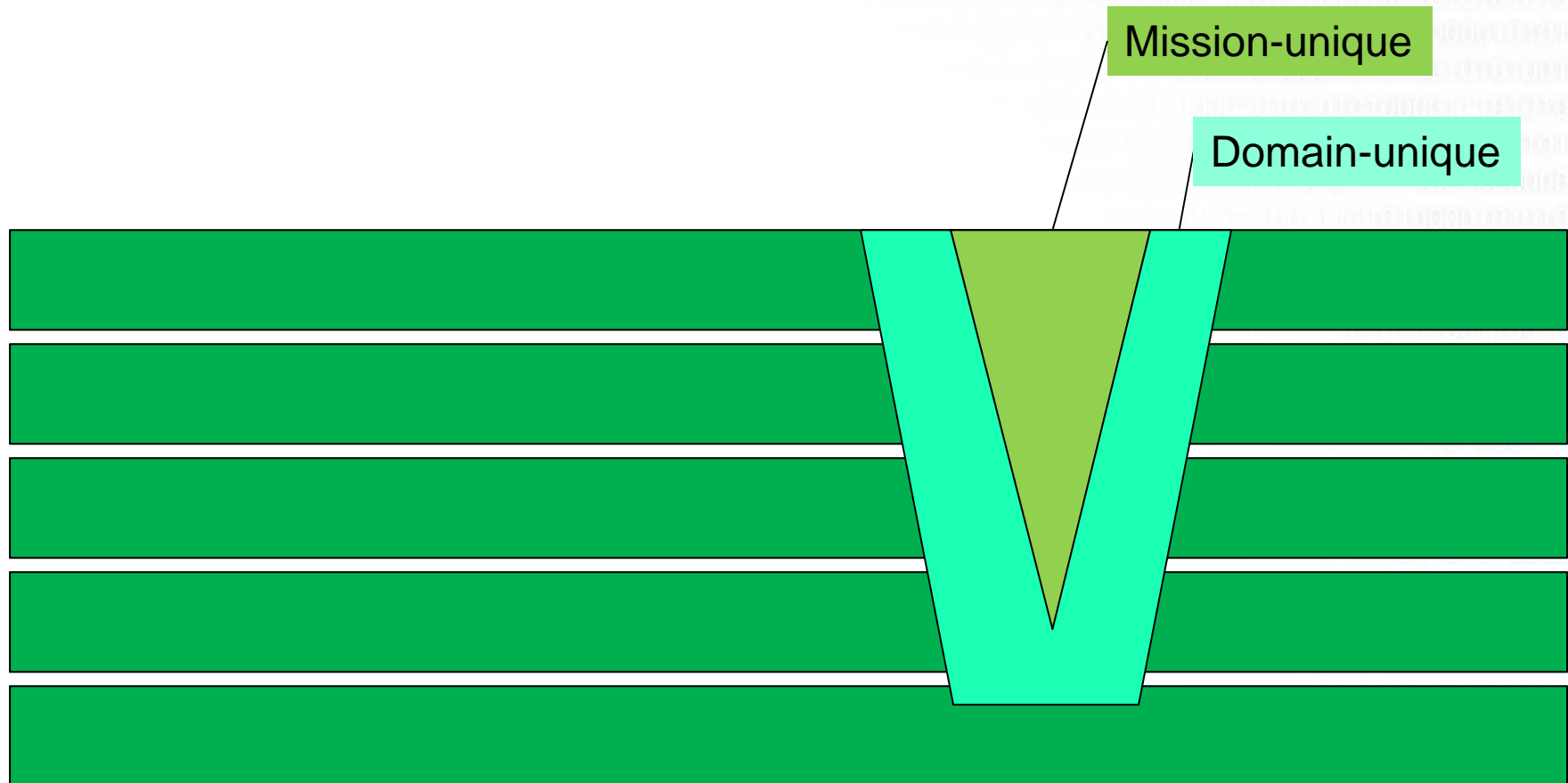
SOFTWARE TENDS TOWARD MONOPOLY/DUOPOLY



Microsoft Word, Google Docs
IOS, Android
Active Directory, LDAP
NFS, CIFS

- High Fixed Costs, Low Marginal Costs – Natural Monopoly
- End users want compatibility, interoperability of data, familiar interfaces
- More users of the same capability, more pressure to consolidate.

AVOIDING THE HIGH COST OF SW



- Maximize functionality from mainstream commercial & open source
- Minimize owned software
- Contribute to open source

- Establish interface specifications for enterprise services without killing off industry innovation and evolution
 - *segmenting the market with different interface standards will shrink the investment in each segment.*
- User interfaces and user interface toolsets are evolving quickly. The presentation layer represents a large part of the mission unique and domain unique development.
 - *auto-generated display pages may help reduce development costs, but good UX design helps avoid operational errors.*
- Software-intensive spacecraft have a more dynamic space/ground interface over the mission lifetime. Existing command/telemetry paradigms are not designed for managing software.
 - *Example: GEO's have gone from 6,000 telemetry items to 80,000 telemetry items primarily due to software telemetry.*