Optimization is Key – with more fidelity

Source: Rolls-Royce Shyam Neerarambam
HPC Game Changers

1. Maturity in HPC sector
   • Broader adoption requires different access model
   • More sophistication requires UQ

2. Economic development recognition
   • Beyond HPC agencies: DoD, DOE, NSF
   • Front end, Microsoft, Azure, Amazon, petascale

3. GAPS
   • Information, access, code licensing & parallelization
   • Fragmented demand; dissimilar domains & sectors
   • Ecosystem for end-to-end production
   • Capability vs. Capacity
Examples

1. Why didn’t you tell us?
   - Council/NCSA/Fortune 50 user firms in Washington
   - Attention to manufacturing supply chain

2. Fragmentation & Competition
   - Supply chain niches differ from OEMs
   - Application software digital supply chain

3. Similarities
   - Mfg supply chain representative of other sectors
   - Biotech, data analytics, climate, manufacturing
   - Ecosystem
Shared Interests

1. Domains & Sectors
   - Cross-discipline solutions follow single-domain success

2. OSTP, DOE, NASA, NIST, CTO/CIO, EDA, …

3. Form Factors and HPC derivatives
   - New users push form factors (e.g. consumer market)

4. Collaboration
   - Not enough $$ in any single sector
   - Software supply chain is increasingly important
   - Ecosystem becomes more important
   - HPC centers, public/private, front/back