

GREATER PHOENIX INNOVATION-ENABLING INFRASTRUCTURE

Greater Phoenix's ability to seed new and transitioning industries is limited by relatively small R&D investments

1 Arizona ranks 15th in overall R&D spending, but must increase spending by \$5B to be in the top 10.

2 Industry spending drives Arizona R&D, but R&D spending in Arizona is industry-driven, but industry-funded R&D at Arizona universities is low, as is university share of federal grant funding.

Greater Phoenix industries produce sophisticated knowledge, but full commercial potential is currently limited

3 The aerospace industry produces few knowledge spillovers because of national security restrictions on defense contracts, but defense cuts provide the opportunity for diversification

Major contractors are increasing their commercial aerospace presence
Supply chain companies are positioned to take on greater R&D and seek out new markets

The majority of the world's most powerful semiconductors will continue to be made in Chandler, but the industry shift to mobile technologies creates uncertainty

4 Increasing technology licensing and commercialization for the biomedical industry will be critical to its growth

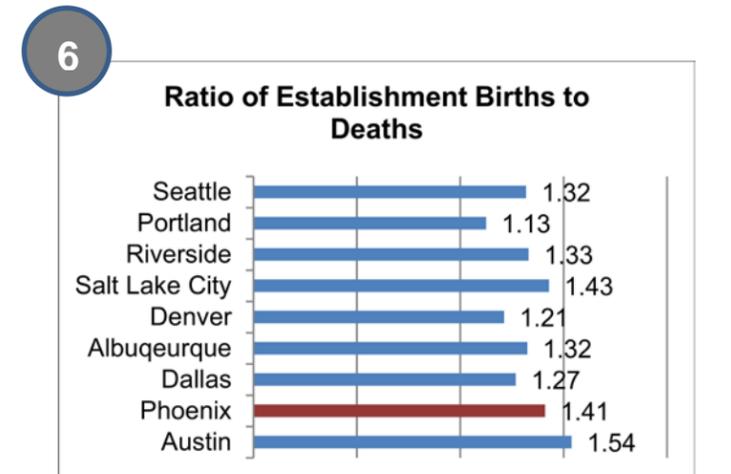
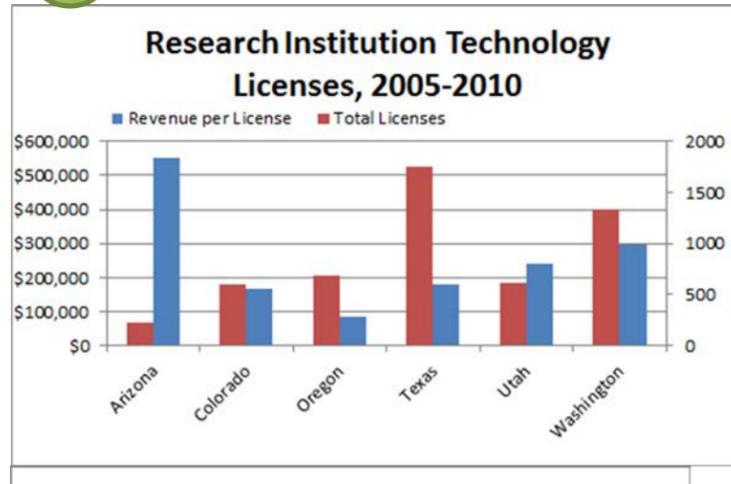
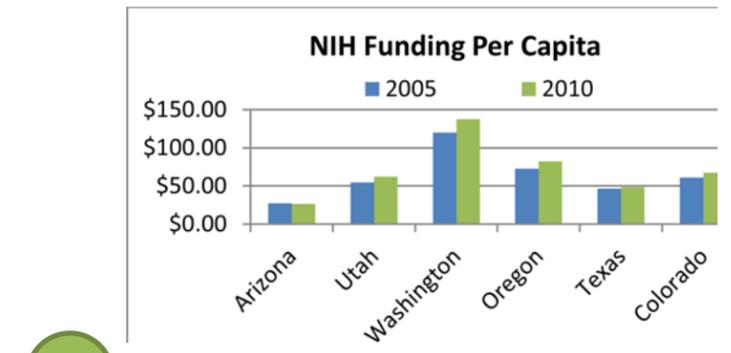
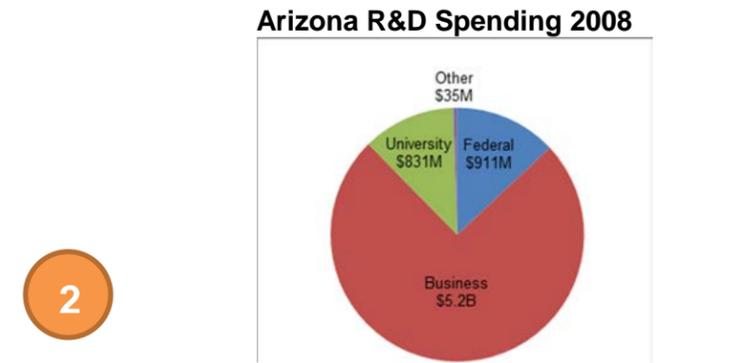
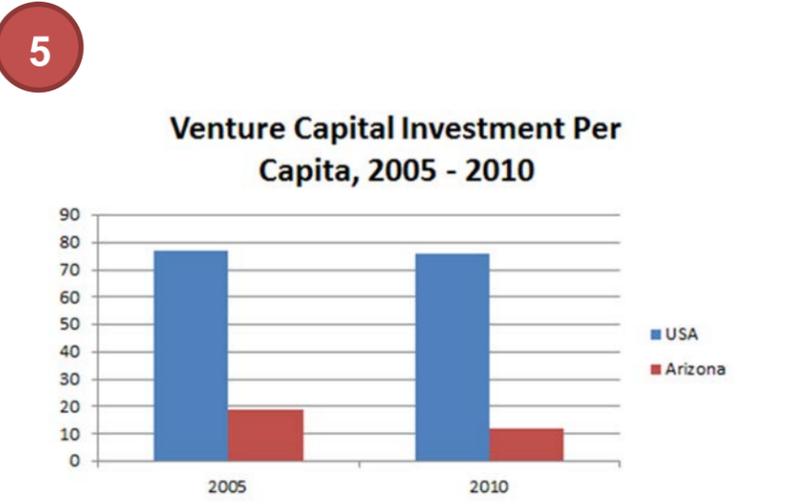
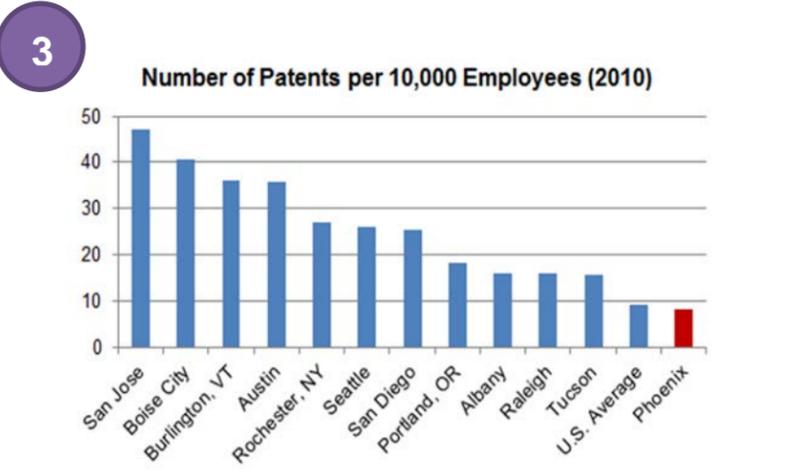
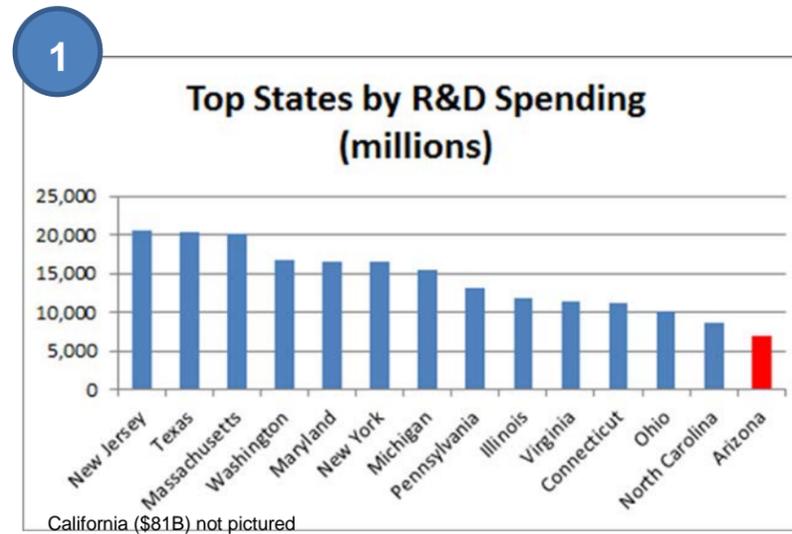
The telecommunications industry has a strong outlook developing health IT and education IT, but more industry cooperation is needed

The ability of entrepreneurs to generate knowledge and commercialization is limited by lack of connectivity to resources

5 Venture capital investment levels are very low

Local entrepreneurs report a lack of knowledge about available startup resources

6 Greater Phoenix's business dynamic is high churn, but a high survival rate



Sources:

- 1) NSF Science and Engineering Indicators 2012 State Data Tool
- 2) NSF Science and Engineering Indicators 2012 State Data Tool
- 3) Michael E. Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School
- 4) Association of University Technology Managers
- 5) PricewaterhouseCoopers MoneyTree
- 6) Brookings analysis of 2007 Small Business Administration Data