Time to Redesign, Finally

SALC Annual Retreat

Michael M. Crow
Tucson, Arizona
December 1, 2017
“Everyone designs who devises courses of action aimed at changing existing situations into preferred ones.”

–Herbert A. Simon
Nobel Prize in Economic Sciences, 1978
Arizona and Metro Tucson

Economic Summary
Arizona Gross Domestic Product, 2005-2016

Data: Bureau of Economic Analysis, Regional Economic Accounts. 2009 dollars
Metro Tucson Gross Domestic Product, 2005-2016

Data: Bureau of Economic Analysis, Regional Economic Accounts. 2009 dollars
Per Capita GDP Relative to US Average, 1997-2015

Data: Bureau of Economic Analysis, Regional Economic Accounts
Arizona and Metro Tucson Economic Summary

Finding

Steep decline

Slow recovery

Historic design is maxed out and now in need of an update

Action

Total reconceptualization of economic and education infrastructure

Initiation of a design thinking process
Arizona and Metro Tucson

Sector Summary
Arizona Economic Output by Metro and Sector, 2015

Data source: Bureau of Economic Analysis, Regional Economic Accounts
Growth of Economic Sectors in Tucson Metro Relative to 2008

Data: Bureau of Economic Analysis, Regional Economic Accounts.
Per Capita Personal Income Relative to US Average, 1970-2015

Data source: Bureau of Economic Analysis, Regional Economic Accounts
Arizona and Metro Tucson Sector Summary

Finding

Weakness across sectors

Labor issues

Income issues

Action

Need new design for education and labor development

Identify and network emerging entrepreneurs across sectors

Target new technologies and new industries that are not locally present (Ex. Singapore)
Singapore GDP per Capita as Percent of US GDP per Capita, 1960-2016

- Export-Led Industrialization through MNCs
- Liberalization, Promotion of Innovation, Development of Business Services
- Investment in Education and Productivity Enhancements

Data: World Bank
Singapore and US GDP per Capita, 1960-2016

- Export-Led Industrialization through MNCs
- Liberalization, Promotion of Innovation, Development of Business Services
- Investment in Education and Productivity Enhancements

Data: World Bank
Metro Tucson

Workforce Configuration and Population

Data: US Census Bureau, American Community Survey, Table S0101.
Percentage Point Difference Between Metro Tucson Population and US Population, 2008-16

Data: US Census Bureau, American Community Survey, Table S0101.
Percentage Change in 25-34 Year Old Population in 53 Largest Metros, 2008-2016

Data: US Census Bureau, American Community Survey, Table S0101
Finding

- Retain working-age population, attract millennial creatives and millennial college graduates

Action

- Create innovative programs linking UA to Tucson
- Support development of differentiated Tucson brand and esthetic, and project it beyond Arizona
- Create an art- and culture-driven economic sector
Metro Tucson

Labor Market
Change Metro Tucson Working Age Population by Educational Attainment, 2008-16

Data: US Census Bureau, American Community Survey, Table S2301.
Finding

Comparatively acute impact of educational attainment

Existing infrastructures maxed out some time ago

Action

Reconceptualize workforce and workforce development into a unified effort

Support degree completion by adult learners at all levels and in quick time

Build narrative of growth and competitiveness by popularizing stories of successful local businesses

Create new workforce sectors
Metro Tucson

Inventiveness
Percentage Change in Patents Granted to Western Metros Relative to 2000

Data: US Patent and Trademark Office
Patents Issued to Top 20 Tucson Metro Assignees, 2000-2015

- Seattle: 3,344
- Minneapolis: 1,696
- Phoenix: 673

Ventana Med.
U of A
Honeywell
TI
Raytheon
IBM

Data: US Patent and Trademark Office
Finding

Growing inventiveness

Not enough fertile soil for knowledge spillover

Action

Need fertile soil for companies

Need initiatives and linkages at all levels
American Megapolitans and the Sun Corridor
Cost of Living and Per Capita Personal Income in Megapolitan Regions

Data: Bureau of Economic Analysis, Regional Economic Accounts.
Gross Domestic Product by Megapolitan Region

Data: Bureau of Economic Analysis, Regional Economic Accounts.
Population by Megapolitan

Data: Bureau of Economic Analysis, Regional Economic Accounts.
Megapolitan Per Capita Personal Income

Data: Bureau of Economic Analysis, Regional Economic Accounts.
American Megapolitans and the Sun Corridor

Finding

Tucson and Phoenix have **low and nearly identical cost of livings and incomes** relative to Megapolitan peers

Greatest **opportunity for growth and expansion** of the Megapolitans

Action

Collaborate with metro Phoenix to develop new economic strategy based on knowledge rather than cost

Increase, enhance and beautify intra-Megapolitan/Sun Corridor Megapolitan infrastructure

Increase linkages to Southern California Megapolitan
Arizona and Metro Tucson

**Economy Action Items**

- Total reconceptualization of economic and education infrastructure
- Initiation of a design thinking process

**Sector Action Items**

- Need new design for education and labor development
- Identify and network emerging entrepreneurs across sectors
- Target new technologies and new industries that are not locally present (Ex. Singapore)
Metro Tucson

**Population Action Items**

- **Create innovative programs** linking UA to Tucson
- **Support development of** differentiated Tucson brand and esthetic, and project it beyond Arizona
- **Create an art- and culture-driven** economic sector

**Labor Market Action Items**

- **Reconceptualize workforce** and workforce development into a unified effort
- **Support degree completion** by adult learners at all levels and in quick time
- **Build narrative of growth and competitiveness** by popularizing stories of successful local businesses
- **Create new workforce sectors**
Metro Tucson

Inventiveness Action Items

Need fertile soil for companies

Need initiatives and linkages at all levels
American Megapolitans and the Sun Corridor

Action Items

Collaborate with metro Phoenix to develop a new economic strategy based on knowledge rather than cost

Increase, enhance and beautify intra-Megapolitan/Sun Corridor Megopolitan infrastructure

Increase linkages to Southern California Megopolitan
**Needed Consensus for Progress**

Tax incentives, physical infrastructure, and local knowledge generation are **necessary but not sufficient**

The broader environment in which individual businesses **operate partly determines** their competitiveness

The **innovation system in Tucson is underdeveloped**. The business community and policymakers should seek to (1) link and coordinate existing actors/entities and (2) establish/grow more actors/entities in more roles

A **better innovation system** will improve capacity of businesses to introduce new products, processes, and services

It is easier to capture the **benefits of emerging industries** rather than mature industries that are undergoing disruption