Utah’s Experience with Technology-Based Economic Development
Lessons Learned for Nevada Economic Development

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Presented by
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http://newmedia.innovationutah.com/
UTAH
- 2.8 million people, 80% in urban areas
- History of mining and tourism
- Strong software, digital media, and medical devices industries
- 49th in per capita income
- Distant suburb of San Francisco Bay Area
- 2 public research universities

NEVADA
- 2.6 million people, 85% in urban areas
- History of mining and tourism (gaming)
- Dominates U.S. gaming industry
- 20th in per capita income
- Economically connected to California and Arizona
- 2 public research universities
Utah is now the BCS Buster of Economic Growth in the United States!

- Business Costs Rank: 8
- Labor Supply Rank: 5
- Regulatory Environment: 6
- Economic Climate: 1
- Growth Prospects: 20
- Quality of Life: 1
Utah – A State of Opportunity

**WHAT OTHERS ARE SAYING ABOUT UTAH...**

As Utahns we recognize all that our State has to offer and “singing our own praises” comes naturally. Of course, it’s always great when someone else is doing the singing for you. Our State has received many accolades. Take a look at the list below and I think you’ll find one that resonates for you.

<table>
<thead>
<tr>
<th>#</th>
<th>Source</th>
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| Utah #1 | “Most Dynamic Economy”  
Kaufmann Foundation 2009 |
| Utah #1 | “Most Fiscally Fit State”  
Forbes Magazine 2010 |
| Utah #1 | “Best States to Live”  
Gallup Healthways 2010 |
| Utah #1 | “Expected Economic Recovery”  
and “Economic Outlook”  
American Legislative Exchange Council 2010 |
| Utah #1 | “Technology Concentration and Dynamism”  
Milken Institute 2009 |
| Utah #1 | “Volunteerism”  
Corporation of National and Community Service |
| University of Utah #1 | for number of research produced business start-ups  
The Association of University Technology Managers 2010 |
| Brigham Young University #1 | for the number of startups, licenses, and patent applications per research dollar spent  
Association of University Technology Managers 2010. |
| SLC #5 | “Best Cities for the Next Decade”  
Kiplinger 2010 |
| Utah #8 | “Top States for Business”  
CNBC 2010 |
| Utah #8 | “Best Transportation Infrastructure”  
Business Facilities Magazine 2010 |
| Utah #9 | “States that will create the most jobs annually through 2015”  
IHS Global Insight |
| Utah #10 | “State Business Tax Climate”  
The Tax Foundation 2010 |
| Cache County #10, Utah County #11, & Davis County #18 | “Best Areas for Finding a Job”  
Money Magazine 2010 |

Update for Nevada 01/07/2011
Utah’s Recent Results (2010)

- Unemployment rate consistently 2% below the national average, up and down
- State projecting small revenue surplus for 2011-12 fiscal year
- AAA Bond Rating with $150 million in the rainy-day fund
- University of Utah ranks among the top universities in commercialization
  - #1 tie with MIT for spinoffs generated
  - Commercialization revenues approaching >$75 million
  - With BYU, highly ranked on measures of efficiency per dollar
  - Universities are a hub for statewide innovation spinoffs
2005: Why USTAR

- Sustainable Economic Development is alignment of 6 areas
- Governor Huntsman’s (R) 10-Point Plan in 2004 recognized alignment
- USTAR became a joint venture between industry (old economy and tech economy), higher education, executive branch and legislative branch
USTAR’s role in TBED

What is the nationally recognized Technology-Based Economic Development (TBED) framework?

1. Expanding the Research Infrastructure
2. Commercializing Research
3. Improving the Competitiveness of Existing Industries
4. Enhancing the Science and Technology Workforce
5. Increasing Access to Capital
6. Building Entrepreneurial Capacity

What USTAR programs are in place relative to TBED framework and what are the results to date?
SBA study found areas with greatest successes in creating technology-based companies had both:
- Entrepreneurial environment
- Environment with significant innovation

In 2005, Utah had 3 “nexus” cities in the top 10 of 394 U.S. metropolitan areas:
- 3. Provo
- 8. Logan
- 10. Salt Lake City
- Other ranked cities included Raleigh, NC; Austin, TX; Boston; Denver; San Jose, CA; and Atlanta

Utah’s research universities have a track record of commercialization success that supports this ranking
Human Capital
Attracting World-Class Innovators

- **Fact:** 5% of faculty attract 50% of federal research funding
- **USTAR Goal:** Recruit more 5%ers

Source: U of U Funding Statistics 2002 - 2004

50% of research funding
$409 mm out of $817 mm total Industry and federal grants
USTAR Return on Investment

University Commercialization

-$25$ Million annual state investment & $250$ Million for buildings

-$4.9$ Billion new external research funds

$422$ new companies

$123,406$ new jobs paying $62$ Billion in salaries

$5$ Billion in new tax revenues for Utah

Is the Critical Path
USTAR Funding: Three Program Areas (2006)

USTAR Research Team Funding
$15mm/yr
- Attract and retain world class faculty
- Focus on strongest innovation focus areas

USTAR Building Construction
$160mm
- +$40mm match from Univ. of Utah and Utah State for $200mm total budget
  - $130mm at U of U
  - $70mm at USU

Tech Outreach Program
$4mm/yr
- Broker, engage, screen, connect, assist, disseminate, and share
  - Between research, industry, and start-up companies
Technology Commercialization Centers

- Statewide innovation backbone providing business access to technology resources
- Integrated with the State’s Business Link Network
- Includes access to seed capital and financing/advisory support for technology start-ups
- Advice from seasoned entrepreneurs with a personal interest in the communities they serve
The USTAR Vision…adjusted BHAG

- 1st model developed by Bureau of Economic and Business Resources (Oct05 Economic Prospectus)

- Revised model based on Mar06 Legislative Session approved $15mm / Year in Research Team Funding (vs the $25MM/year that was modeled)
USTAR Economic Leverage

Papers . . . . . . . . . . Patents . . . . . . . . . . Products

$15M/year Team Investment

$160M One-time Infrastructure Investment

Average $166M/year Research Funding

242 USTAR Companies

73,000 USTAR Jobs

Average $166M/year State Taxes
Economic Impact Associated with USTAR

- New earnings
- New jobs
- New tax revenues

USTAR Teams
- Faculty hired
- Research facilities completed

USTAR Research
- Grant applications submitted
- Grants funding (federal, industry sponsored)
- GOED Centers of Excellence funding

USTAR Technology Development
- Disclosures filed
- IP applications filed
- Patents issued

USTAR Commercialization
- Spin-off companies
- Commercial research
- Licenses to firms

FY2007 - FY2015
FY2010 Results vs. 2005 Projections

* NB - The Economic Prospectus published in 2005 was based on research team and Technology Outreach funding through FY2010 of $103 million. To date, actual funding has been $63 million. To formulate the baselines used in this annual report, we have adjusted the Economic Prospectus predictions to 61.4 percent of those published in 2005.
FY2010 Results vs. 2005 Projections

189% of projected inventions

244% of projected companies
Leveraging the State’s investment

- $63 mm grants won FY2007-FY2014
- Plus DOE subcontract & other federal energy funding committed for FY2011 ($40 mm)

199% leverage of investment

* $63 mm grants won FY2007-FY2014
Plus DOE subcontract & other federal energy funding committed for FY2011 ($40 mm)
Grants est. jobs (20 per $1 mm)

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<tr>
<th>Projeceted Jobs Created</th>
<th>Actual Jobs Created</th>
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<td>2,000</td>
<td>1,984 vs. 1,864</td>
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USTAR Process in 2005

The USTAR Journey began in Feb05 legislative session with a $350,000 planning grant; 100+ people joined onto the planning process

1. Clusters Team
2. TBED Best Practices Policy Team
3. Innovation Assets Team
4. Technology Commercialization Team
5. University Infrastructure Team
6. Economic Prospectus Team

Delivered Executive Summary and detailed analysis to the Legislature in Oct05
USTAR Funding:
Three Program Areas (funded in Mar 2006)

USTAR Research Team Funding
$15mm/yr
- Attract and retain world class faculty
- Focus on strongest innovation focus areas

USTAR Building Construction
$160mm
- +$40mm match from U of U and USU for $200mm total budget
  - $130mm at U of U
  - $70mm at USU

Tech Outreach Program
$4mm/yr
- Broker, engage, screen, connect, assist, disseminate, and share
- Between research, industry, and start-up companies
What is the nationally recognized technology-based economic development (TBED) framework?

1. Expanding the Research Infrastructure
2. Commercializing Research
3. Improving the Competitiveness of Existing Industries
4. Enhancing the Science and Technology Workforce
5. Increasing Access to Capital
6. Building Entrepreneurial Capacity
Results to date:

- Expanding the Research Infrastructure; (USTAR Research Team funding and USTAR building and infrastructure)
  - 34 USTAR faculty hired
  - At USU: $70 Million USTAR BioInnovations Building opened October 7, 2010
  - At U of U: $130 Million James L. Sorenson Molecular BioTechnology Building – a USTAR Innovation Center progressing quickly
  - More than 800 construction jobs in second half of 2010
Program 1 Emphasis:
Innovation Focus Areas

Focus areas:
- Based on existing University strengths
- Have vast commercialization opportunities
- Address large and strategic global markets
- Leverage Utah industry strengths

Strategy:
- Attract all-star research faculty from outside the state with a reputation for innovation and commercialization
USTAR Team Funding

- **Start-up: average $5 million/team**
  - 3 Principal Investigators per team
  - Teams average 30 members
  - Computers and scientific equipment
  - Moving costs for research
  - Salaries and benefits costs are ongoing costs

- **Research funds pay salaries after 4 years**
  - Hire more teams
  - Need long term salary support at $500,000 per team for expenses not covered by federal grants
Success Story: Recruiting All-Star Talent
USU USTAR BioInnovations Building

Opened October 7, 2010

USU USTAR Core Facilities
• Clinical nutrition center
• Bio Safety Level 3 Lab
• Vivarium
• Life science labs

Biofuels Infrastructure

USU BEERC:
Hybrid Energy R&D Ctr
UofU USTAR Core Facilities

- Nanofabrication
- Small Animal Imaging
- Optical Imaging
- Vivarium
- Labs for Neuroscience and BioTech
The impact of microtechnologies and nanotechnologies will be greater than US $3 trillion by 2015.

- Source: Organisation for Economic Cooperation and Development

The U of U Nanofabrication facility positions Utah to capture hundreds of millions in federal and industry-sponsored research grants over the next decade.
Example: Nanotechnology: (U of U)

Massoud Tabib-Azar
Wireless Nanosystems

- $10.9 mm in extramural funding
- Formed Utah Wireless Nanosystems in 2010
- Developed high-precision “nanotorch” for more efficient circuit board manufacturing
- Developing audio medicine labels for visually impaired
TBED: Commercializing Research

Results to date:

- Commercializing Research: (TCO Offices, COE, USTAR TOIP, U of U TCO Accelerator, USU’s Energy Dynamics Lab)

USTAR TOIP worked with over 175 companies in 19 counties

- U of U Accelerator opened July 29, 2010 with tenants...building on 100 start-ups in 5 years

- USU’s EDL on track to grow from 5 people in FY10 to 40 in FY11

- 6 USTAR PI companies launched to date
TBED: Competitiveness of Existing Industry

Results to date:

• Improving the Competitiveness of Existing Industries (GOED, DWS and UCAP partnership initiative)
  • Aerospace Ph I and II approved (WSU)
  • Energy Ph I and II completed (SLCC)
  • Digital Media Ph I underway (UVU)
  • UTC LS EiR working with USHE on BioVision
  • Projects being initiated at SUU and Dixie
Results to date:

- Enhancing the Science and Technology Workforce (USHE, InnovaBio program, BioInnovations Gateway_BiG)

- Four incubating tenants by Sept 30, 2010
- 80+ students trained in Spring 2010
- In running for national innovation award:

  "Unique model of business incubation and workforce development"
TBED: Increasing Access to Capital

Results to date:

- Increasing Access to Capital (FofF, COE, TCG, SBIR Ctr, Angel Networks)

- 68 TCG awarded in FY10 with 27 of the 68 to regional higher education

- SBIR: 69 clients served and 4 wins across the state

- Dixie Angels and Park City Angels growing
Funding (ARRA) from $12,000 to $90,000

- 68 projects at:
  - Dixie, DATC, SUU, SLCC, UVU, SLCC
  - USU, U of U
- >60 percent have industry co-applicant
- Fast-track commercialization:
  - Biomedical, IT, cleantech/energy, homeland security, aviation, advanced composites, outdoor products
- Early results:
  - 15 complete prototypes
  - 21 patent and disclosures filings
  - 6 new sales distribution agreements

DOE and National Lab personnel evaluate Ares Motorsports’ hybrid race car
Results to date:

- Building Entrepreneurial Capacity (USHE, GUV, UVEF, NFEA, Dixie Techs)

- Extensive business services provided to 15 Concept to Company winners
  - Partnership with industry including GUV, Zions Bank, Workman Nydegger, Ballard Spahr, CFO Solutions

- Six-Part “How to Raise Capital” series now running with FofF and COE
USTAR Governance and Org Chart

USTAR Advisory Council

USTAR Research Team Funding

USTAR Building Construction

Tech Outreach and Innovation Program

USTAR Governing Authority Board

USTAR Governing Authority Executive Director

TOIC
- TOIC No. Utah
- TOIC Central Utah
- TOIC South. Utah
- TOIC East. Utah

- Entrepreneurial Assistance
- Research interaction w/ Utah Co.
- Research collaboration between higher ed & faculty
The USTAR Governing Authority Board is an experienced and committed team of ten leaders with diverse experience in inventorship, entrepreneurship, financial capital, university research, and running and growing companies.

- Dinesh Patel, Ph.D., Managing Director, vSpring Capital (Chairman)
- Spencer P. Eccles, Executive Director, Governor’s Office of Economic Development (Vice Chairman)
- Scott Anderson, CEO, Zions Bank
- Richard Ellis, Utah State Treasurer’s Office
- Jim Dreyfous, Managing Director, UV Partners
- Hunter Jackson, Ph.D., CEO of Navigen Pharmaceuticals
- Dan Olsen, Ph.D., Brigham Young University
- Cynthia Burrows, Ph.D., University of Utah
- Charles J. Precourt, VP of Business Development, ATK
- Rich Linder, CEO, Coherex Medical Inc.
USTAR: A Strong Fit with Utah Priorities

Governor’s PRIORITIES

- Economic Development
- Public and Higher Education
- Energy Security
- Infrastructure
Summary

- USTAR research recruits are delivering ahead of projections
- USTAR research buildings are on track
- USTAR tech outreach is having an impact state-wide on existing companies and new company creation
APPENDICES

Key Links for additional information

USTAR:  www.innovationutah.com and http://newmedia.innovationutah.com/
BIG:  http://innovationutah.com/BiG.html
SBIR:  http://innovationutah.com/sbir.html