

Financing Innovation: Funding the Phases of Knowledge Transfer



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Financing Innovation

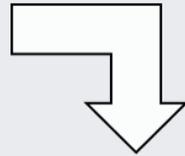
- *Technology transfer as an economic engine*
- *The four stages of financing*
- *Financing mechanisms and partnerships*

The Unique American System

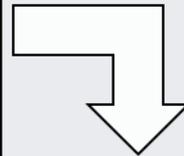
- *Laws, rules, regulations aimed at development*
- *Incentives for commercialization*
- *Researchers face same competitive marketplace as all other entrepreneurs*
- *Tech transfer offices at research institutions across the land*

FY2005 AUTM Survey

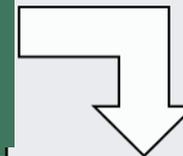
Research
\$42 billion



Discovery
17,382 disclosures
1 per \$2.4 million



Intellectual Assets
10,270 new patent applications
1 per \$4.0 million



Transfer for Commercialization
4,932 licenses and options
628 company starts

New Companies and Products

- *628 new companies in 2005*
- *5,171 new companies since 1980*
- *527 new products in 2005*
- *3,641 new products from 1998-2005*

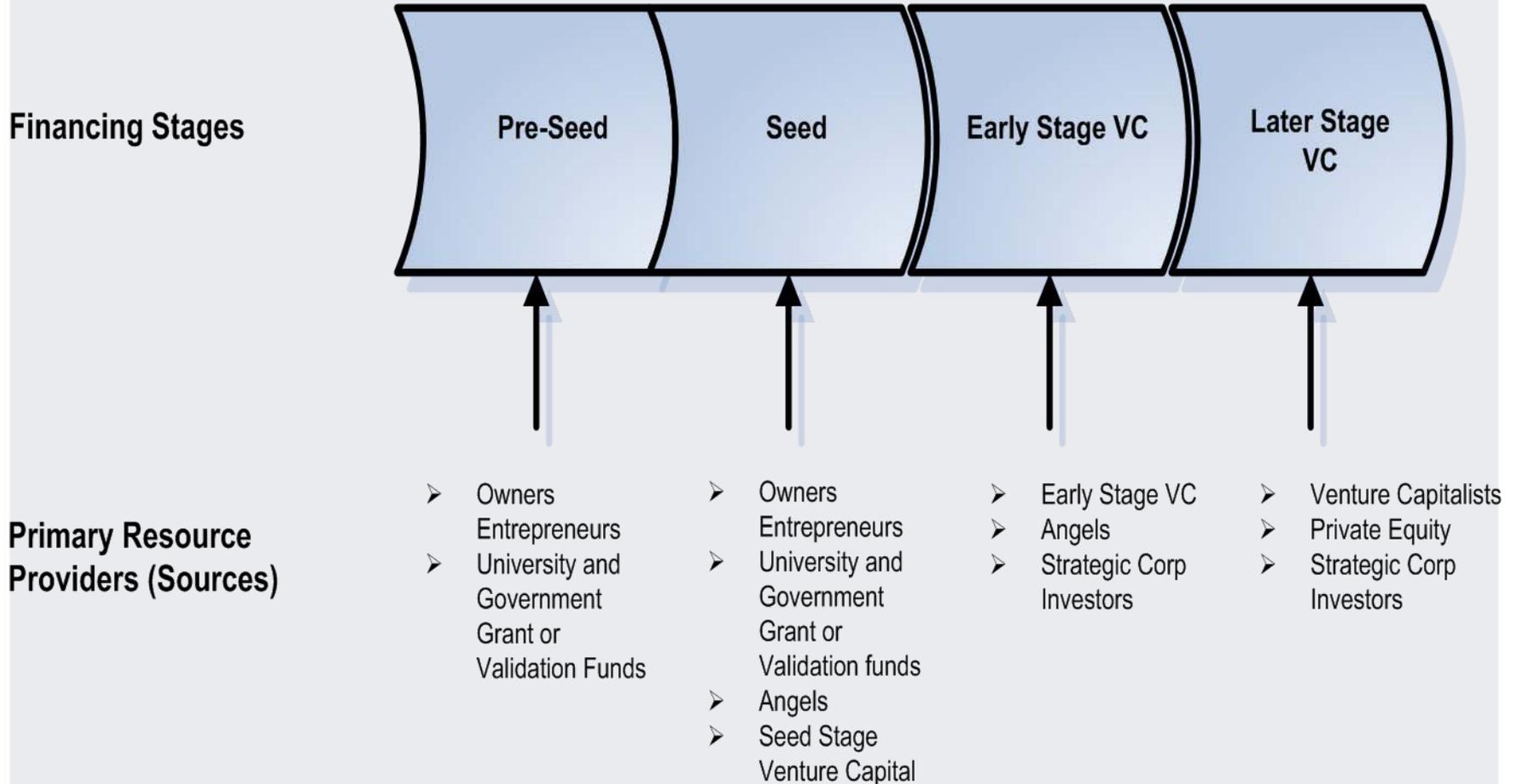
Success Stories

- *Humulin: UCSF*
- *Procrit: University of Chicago*
- *Rituxan: Stanford*
- *Neupogen: Sloan Kettering*
- *Taxol: Florida State*

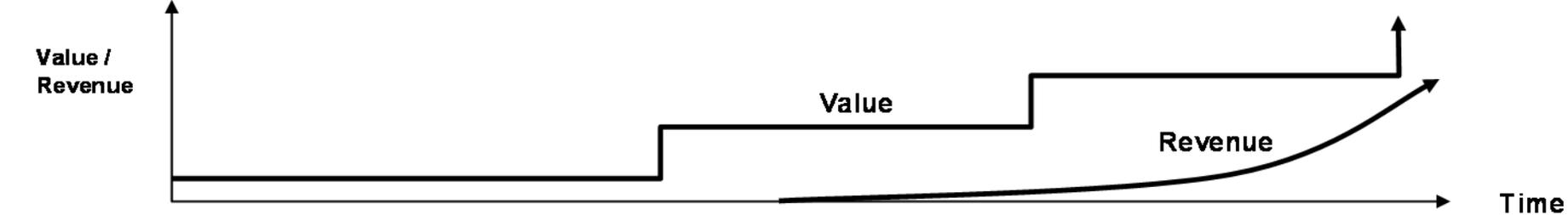
Not Just Biotech

- *Google: Stanford*
- *Gatorade: University of Florida*
- *Lycos: Carnegie Mellon*
- *Akamai: MIT*

Capital Sources by Stage of Activity



THE NEO VENTURE CAPITAL CONTINUUM – VALUE-CREATION STAGES



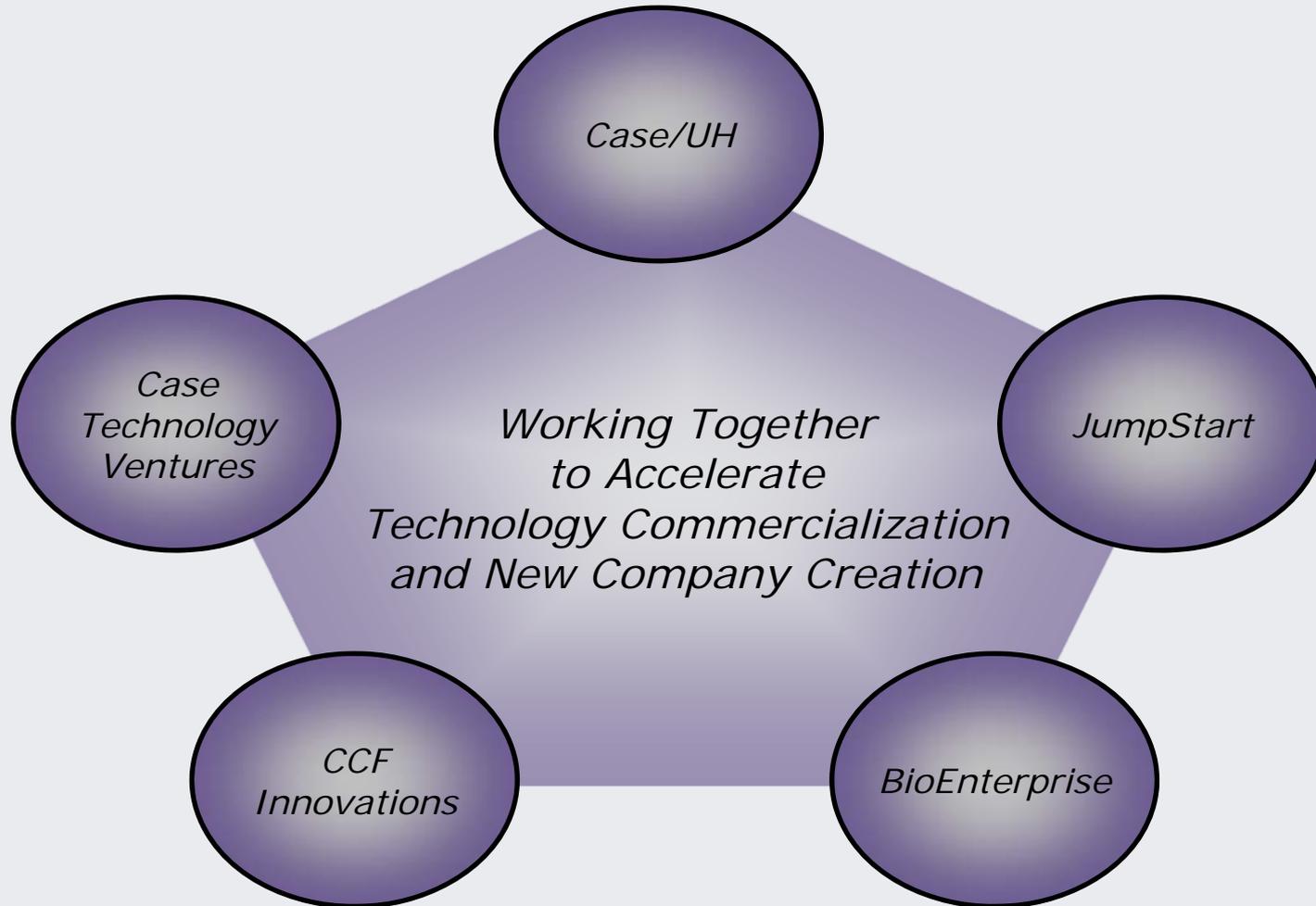
Company Age (Yrs)	0.5 - 1.0	1.5 - 4.0	2.5 - 7.0
Stage Duration (Yrs)	0.5 - 1.0	1.0 - 3.0	1.0 - 3.0

Financing Stages	Pre-Seed		Seed		Early-Stage VC		Later-Stage VC		Targeted liquidity event
Financing Round	-1	0	First	Second	Third	Fourth/bridge			
Aggregate Funding	\$25,000-250,000		\$150,000-750,000		\$1-2.5 million	\$2.5-5 million	\$5-10 million	\$10-50 million	
Business Attributes	<ul style="list-style-type: none"> Initial business case development Technology (invention or IP) development Preliminary IP searches Laboratory proof of principle 		<ul style="list-style-type: none"> Business plan Product performance definition Proof of concept Prototype IP validation Expressions of customer interest 		<ul style="list-style-type: none"> Refined revenue/profit model and business plan Customer validation, customer adoption and at least some revenue Realistic plan for positive cash flow and/or profitability Prototypes performing to commercial specs Market generated proof in the areas of production, service, distribution, sales, marketing, etc. 		<ul style="list-style-type: none"> Revenue/customers Clear timeline to positive cash flow/ profitability and/or establishment of positive cash flow/profitability Scaled execution of growth plan 		

Financing Mechanisms and Partnerships at Case

- *The Innovation Network*
- *Case Technology Ventures*
- *Ohio Third Frontier*
- *Wright Centers of Innovation*

The Innovation Network: Expanded Ties to the Region



Case Technology Ventures

- *Internal venture fund*
- *Multimillion dollar*
- *Invest at pre-seed stage*
- *Companies based on Case research*

Ohio Third Frontier Project

- *Created in 2002*
- *10-year, \$1.6-billion initiative*
- *Build world-class research capacity in Ohio*
- *Support early-stage capital formation and development of new products*
- *Finance advanced manufacturing*

Wright Centers of Innovation

- *Collaborations among Ohio universities, nonprofit research organizations, and companies*
- *Multimillion dollar*
- *Highly competitive*
- *Fuel cell research*
- *Research into stem cells and regenerative medicine*

References

- *NorTech (The Northeast Ohio Technology Coalition): www.nortech.org*

Learn More About Tech Transfer at Case

To learn more about the Technology Transfer Office at Case Western Reserve University, please visit our Web site at:

<http://techtransfer.case.edu>

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