

# MICRONANO BUSINESS GROWTH OUTLOOK

July 2004 Micronano Breakthrough Conference  
Portland, Oregon

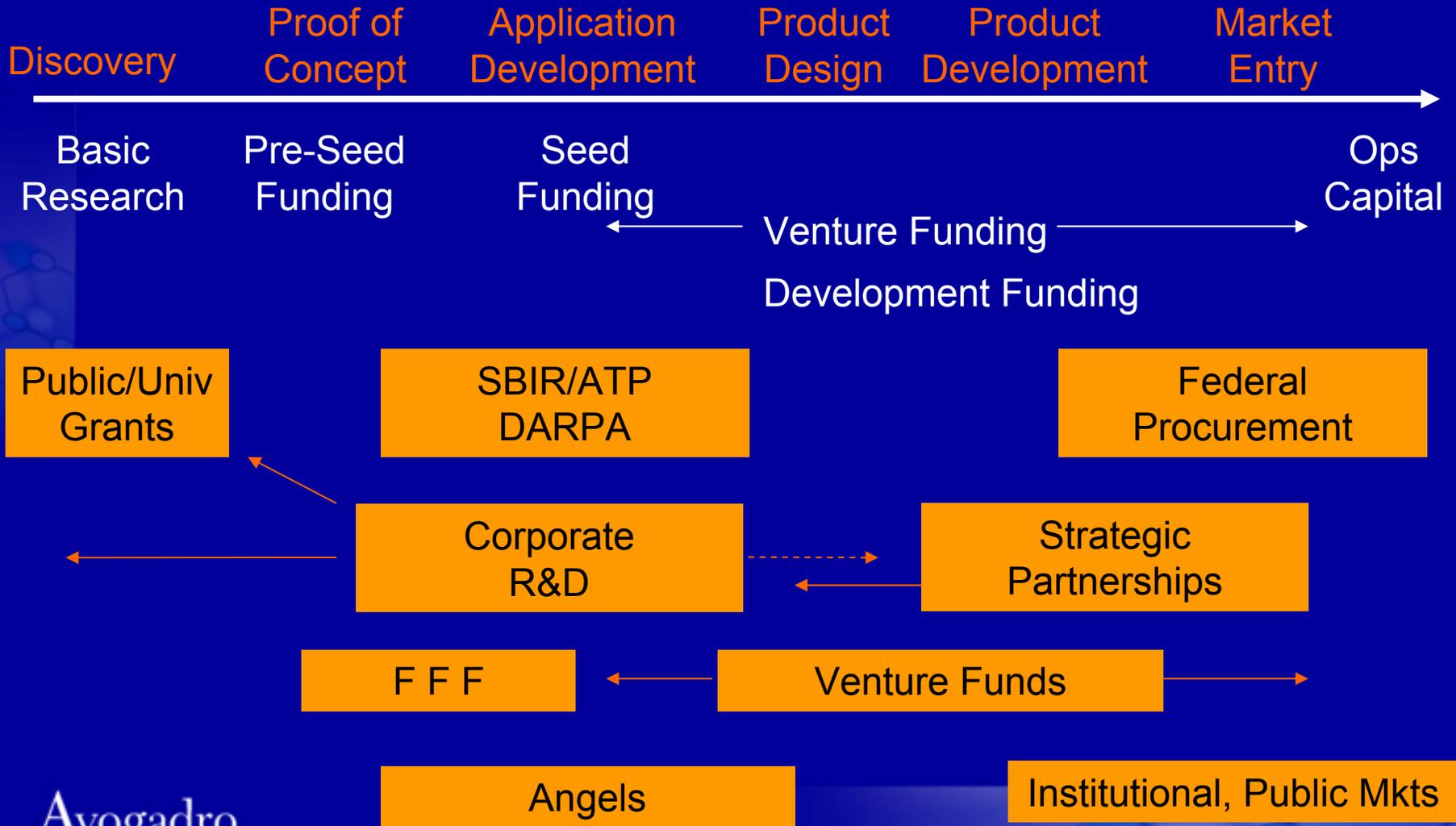
# Drivers of Micro and Nano Markets

- **New Approaches to Miniaturization**
- **Smaller, Cheaper, Faster**
- **Significant Public & Private Investment**
  - Advanced materials
  - Homeland security & next generation defense systems
  - Medical diagnostics, therapeutics & devices
- **Healthy Economic Trends**
- **Global Competition & Innovation**

# Challenges facing Micro-Nano Startups

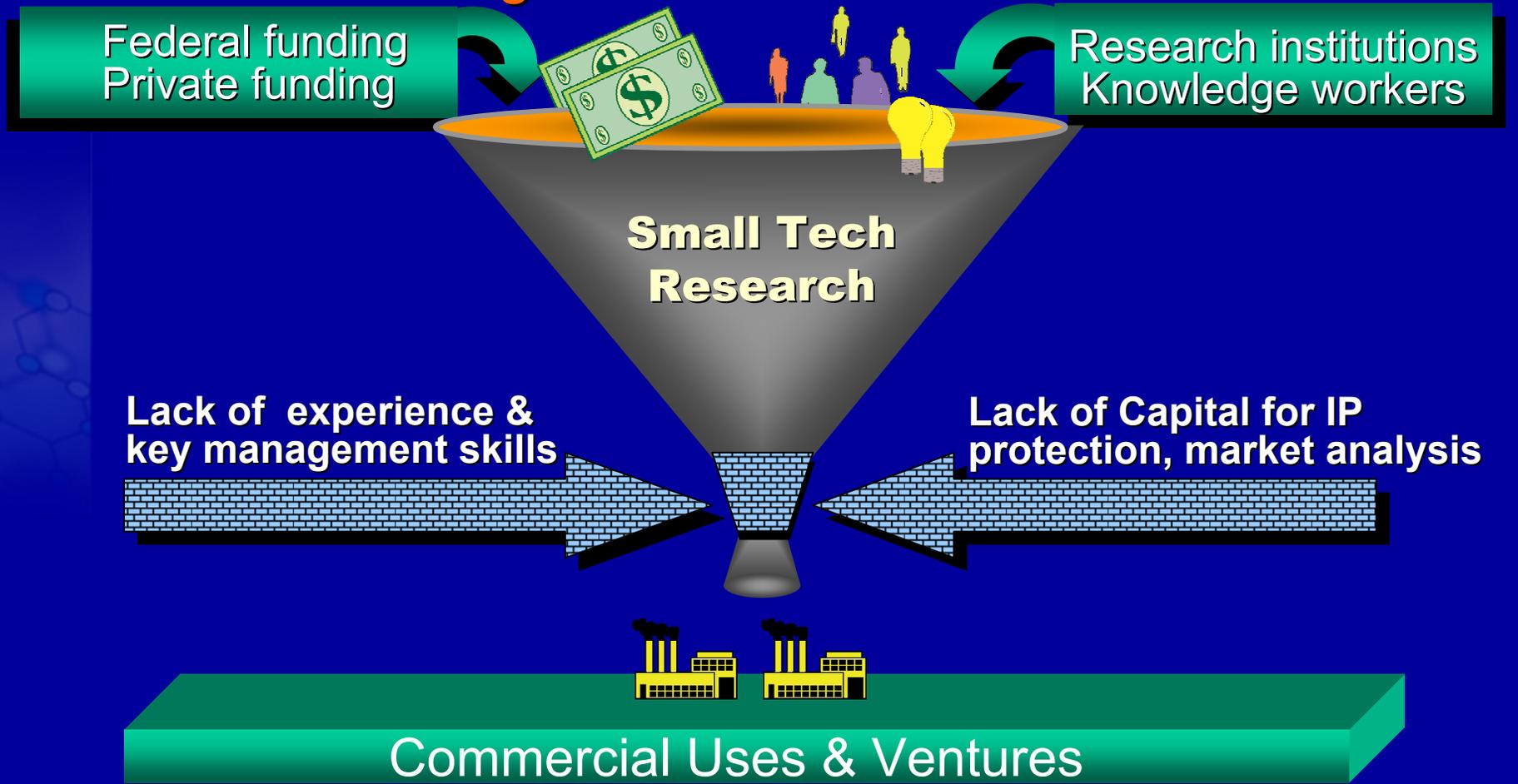
- Long Research & Commercialization Cycles
- Credible IP
- Complexity in Coordinating Multi-Disciplinary Teams
- Industry Classification Uncertainties
- Experienced Leadership
- Market Entry & Acceptance

# Micro-Nano Funding Life-Cycle



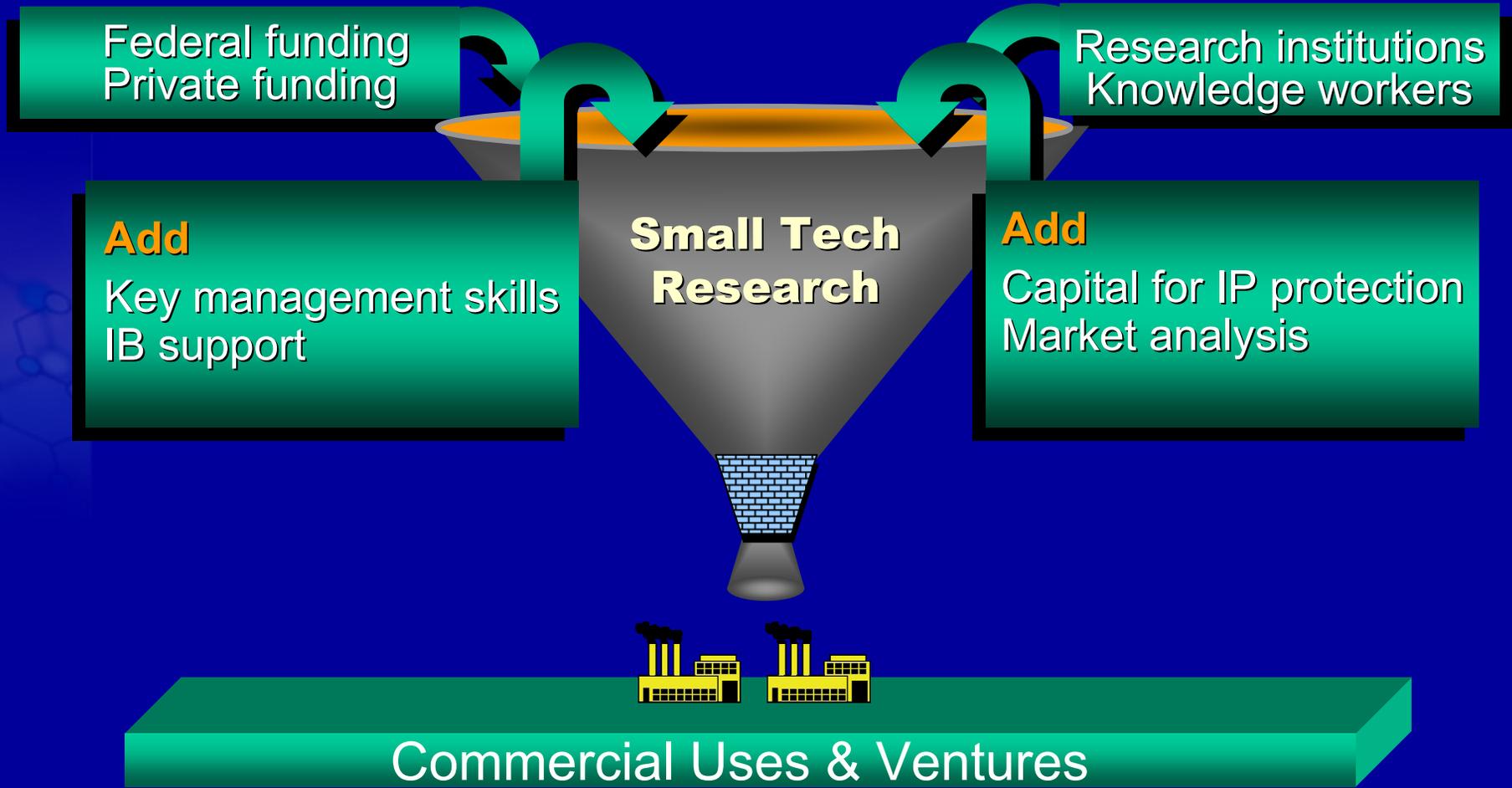
# The Problem

*Turning Research into Products*



# The Opportunity

## *Addition of Critical Resources*



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## *Addition of Critical Resources*

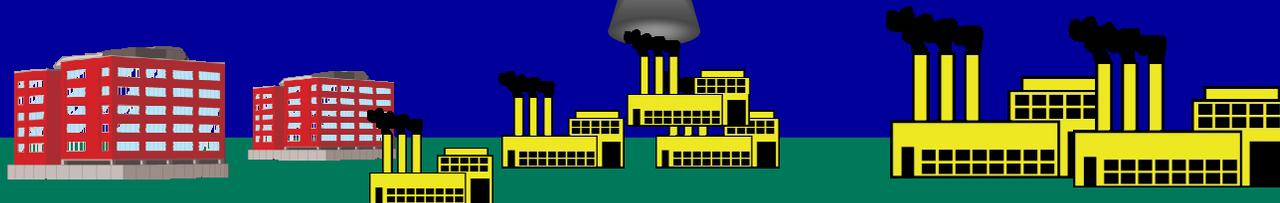
Federal funding  
Private funding

Research institutions  
Knowledge workers

**Add**  
Key management skills  
IB support

**Small Tech  
Research**

**Add**  
Capital for IP protection  
Market analysis



Commercial Uses & Ventures

# Maximizing Economic Impact of Public/Institutional R&D \$

## Technology Cluster Basic Ingredients

- Innovation (creativity & dynamics)
- Human Resources (H.Q.technical & entrepreneurial talent)
- Financial Infrastructure
- Physical & IT Infrastructure
- Business Climate
- Quality of Life

# **Beneficial Structural Changes** **(If R&D \$ Are Commercialized)**

- **Higher Wage Jobs-->Higher Employment Multipliers-->Larger Total Economic Effect**
- **Increasing % of Highly Trained Talent to Industry**
- **Economic Growth in Clean Industries**
- **Positive Impact on Public & Educational Infrastructure**

# Outlook: 2010

- Depends on Successful Execution of Micro-Nano Development Strategies
  - ONAMI
  - Bio21
  - WNI
- 5,000 New High Tech Jobs in WA & OR
- 30-40 New Micro/Nano Firms
- Reaching Critical Mass for Self-Sustaining Growth