

An Innovation Financing Ecosystem To Power The American Economy



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The National Academies – GUIRR
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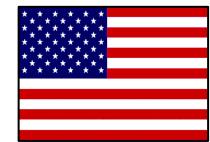
AMERICA NEEDS A NEW INNOVATION FINANCING ECOSYSTEM



Legacy R&D funding system



- Innovation struggles



America's choice



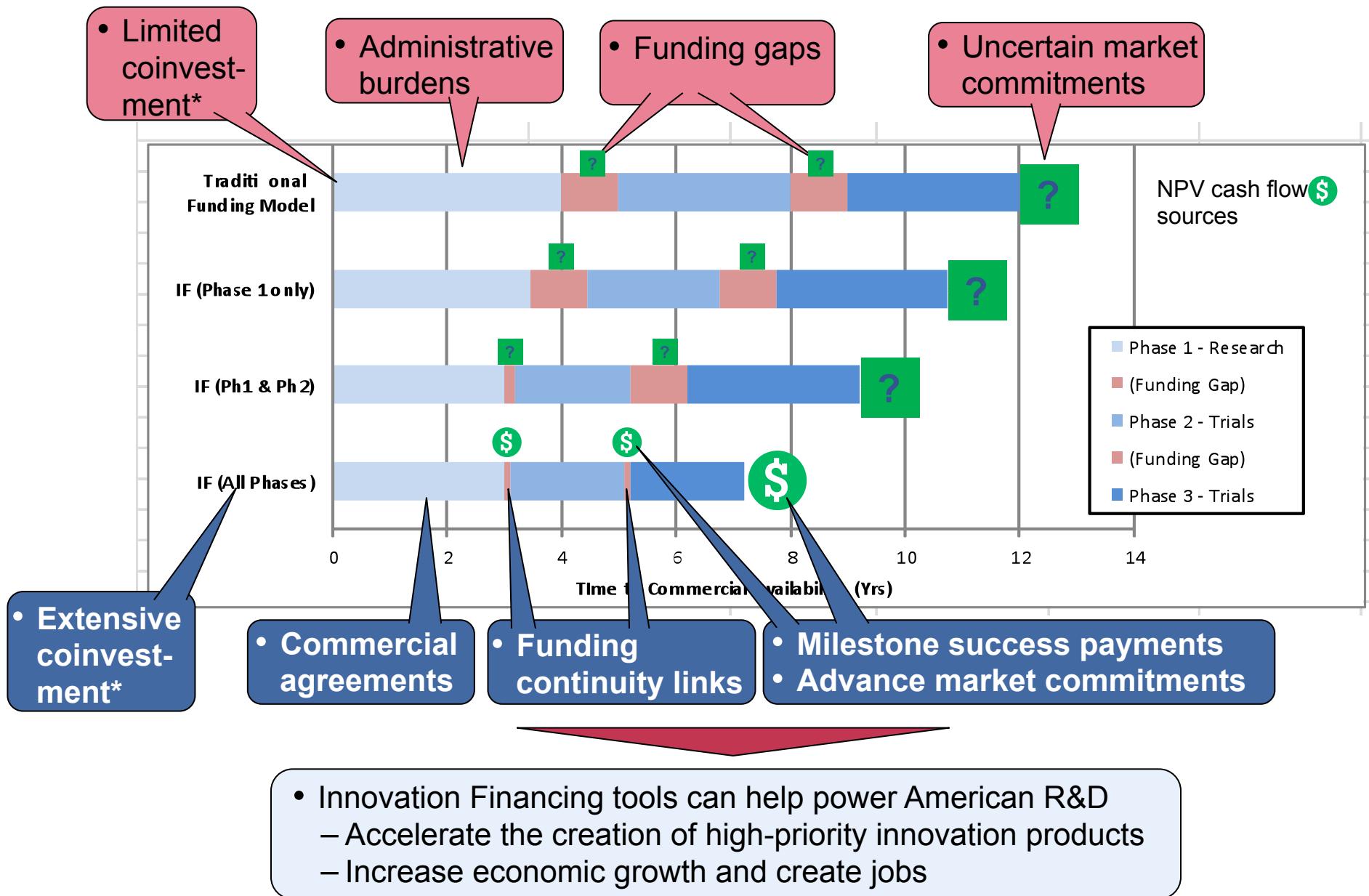
New modern American innovation financing ecosystem

- Innovation thrives

Goals

- Foster a much needed new framework for financing American innovation
- Establish non-profit Roundtable & convene key stakeholders
- Develop open-standards, de-risked, commercial innovation financing tools that align gov't R&D funding & capital markets
- Finance high-priority innovation projects
- Undertake broad, collaborative efforts to build a new innovation financing ecosystem

LEGACY OBSTACLES AND INNOVATION FINANCING SOLUTIONS FOR TRANSLATIONAL R&D FINANCING



*Available Co-investment = net present value (NPV) of milestones and advance market commitments, adjusted for continuity link risk, administrative burden/delay risk, other risks, and enhancements

Source: Innovation Financing Roundtable

COMMERCIAL AGREEMENTS FOR GOVERNMENT-SUPPORTED AEROSPACE R&D



Commercial Space Program



SPACEX



Orbital



BOEING



"NASA Figures Show That Commercial Rocket Costs Less Than Half as Much as Government-Run Effort Would"

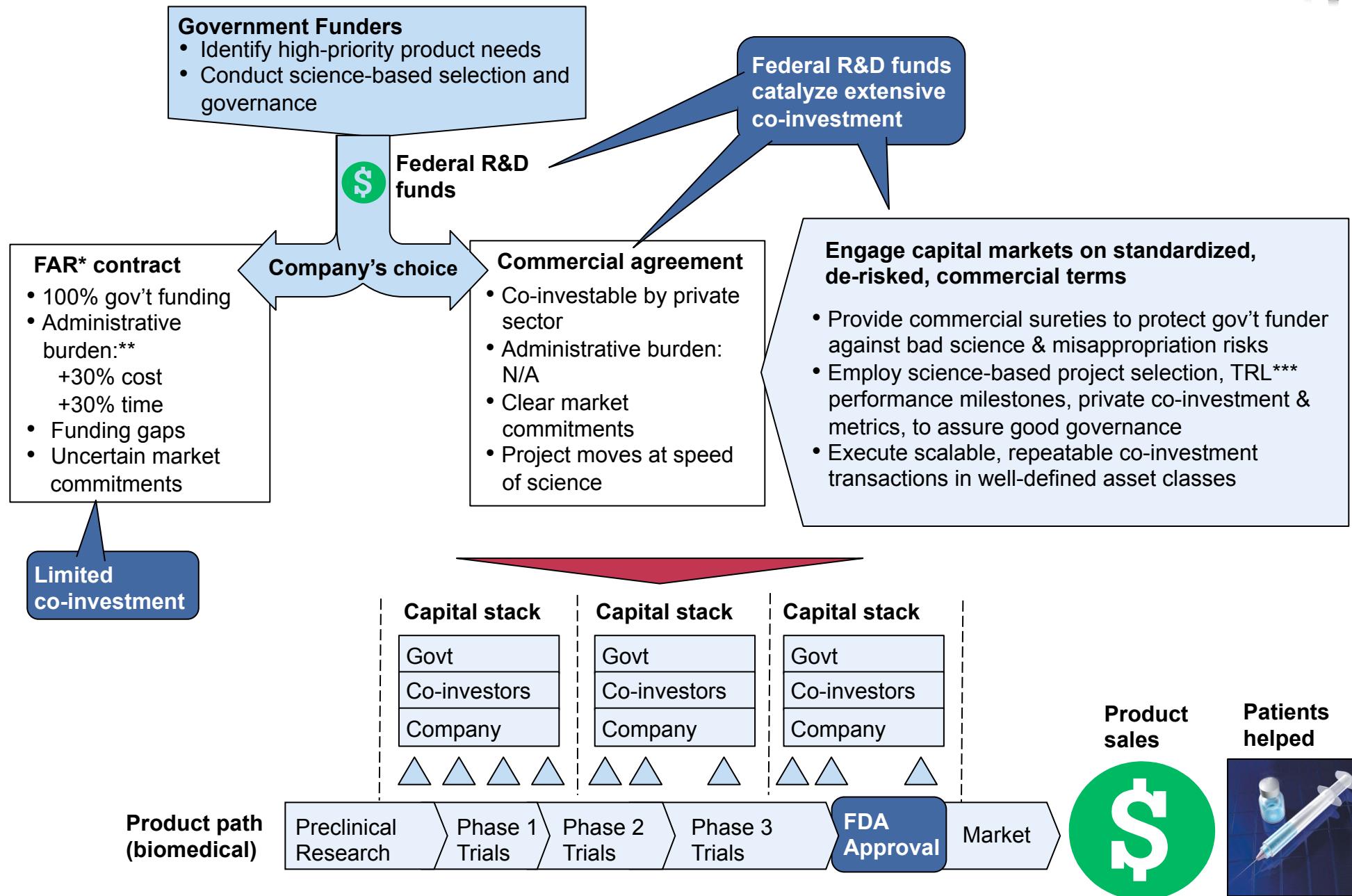
-- Scientific American

"Houston, We Have a Market: Privatizing Space Launches Pays Off Big"

-- Forbes

Model for large-scale, multi-stage government-funded R&D using commercial agreements

INNOVATION FINANCING FRAMEWORK



Source: Team analysis

*FAR – Federal Acquisition Regulations; **Estimated averages compared to commercial R&D

*** Technology Readiness Levels

INNOVATION FINANCING ASSET CLASSES



	Description
Innovation Bonds	<ul style="list-style-type: none">• Government R&D funds securitized as taxable revenue bonds
Innovation Return Vehicles	<ul style="list-style-type: none">• Short-term or long-term venture investments receiving return from cash, royalty, or equity participation in government R&D milestone payments and government or commercial product sales
Milestone Investments	<ul style="list-style-type: none">• Medium-term debt, equity, and/or convertible investments to fund individual project stages. Returns based on government R&D and milestone payments, milestone prizes, and/or equity conversions
Full Project Investments	<ul style="list-style-type: none">• Advance agreements for multi-stage projects to finance the next tranches as project stages are completed, all the way to product approval and acquisition
Portfolio Investments	<ul style="list-style-type: none">• Debt and/or equity investments in portfolios of multiple projects aiming at one or more target products
Innovation Facilities Hybrids	<ul style="list-style-type: none">• Bond investments for the construction of R&D laboratories, equipment acquisition, or other facilities, with a component of the bond proceeds allocated for the conduct of R&D by tenants of the facilities
Industrial & Infrastructure	<ul style="list-style-type: none">• Investment products delivering combined funding for infrastructure, facilities, and R&D within regional clusters
Other	<ul style="list-style-type: none">• Additional appropriate asset classes

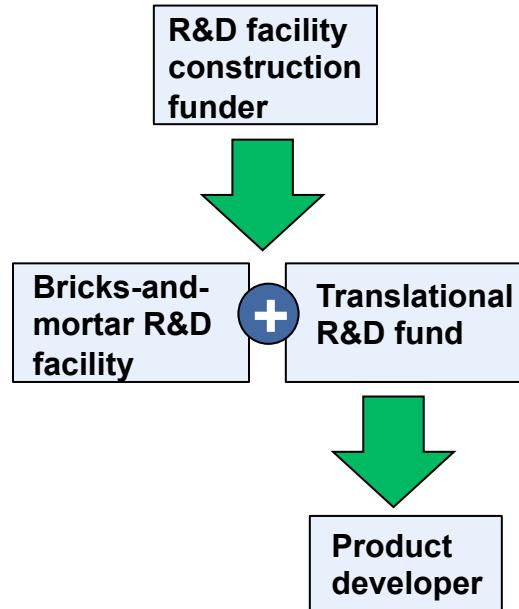
Can be used for all innovation sectors

SELECTED INNOVATION FINANCING ASSET CLASSES

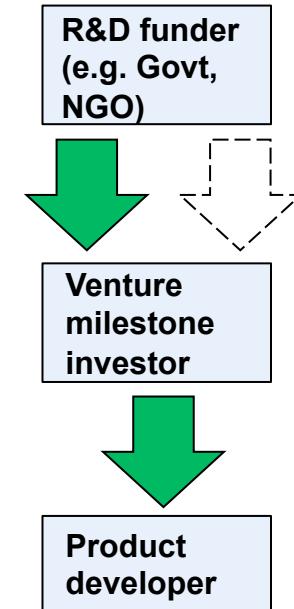
Innovation Bond



Innovation Facility & Research Bond



Venture By Milestone (Pay For Success)



Approach

- R&D funder (e.g. govt, NGO) pays company to perform science, funds delivered via taxable revenue bond
- R&D funder pays 100% of science cost regardless of science success or failure

Benefits

- FAR administrative burden removed
- R&D funder covers risk of science failure
- Product advances at speed of science, not paperwork

Approach

- R&D facility construction funder uses revenue bond to finance construction of bricks-and-mortar R&D facility, including design, engineering, construction, and equipment
- In addition, certain proceeds of revenue bond or associated tranche are used to set up a translational R&D fund
- Product developer uses translational R&D fund for support of translational R&D

Benefits

- Bricks-and-mortar R&D facility has available cash to support translational R&D from opening day
- Utilization of R&D facility is high from opening
- Products advance at speed of science
- Preliminary data generated helps leverage receipt of additional Government R&D funding

Approach

- Milestone investor pays company to perform science
- R&D funder pays:
 - On science success: 100% of science cost plus agreed rate of return (e.g. +25%)
 - On science failure: nothing (or agreed partial payment)

Benefits

- FAR administrative burden removed
- R&D funder pays only for success
- Milestone investor receives opportunities to
 - Deploy and cycle capital
 - Receive fast monetary return for science success
- Product advances at speed of science

TAXABLE REVENUE BONDS CAN ACCELERATE BIOMEDICAL PRODUCT DEVELOPMENT

NIH Revenue Bond Example



Project

- National Institute of Allergy and Infectious Diseases (NIAID) headquarters built using taxable revenue bonds
- Mission-critical 491,000 sq. ft. build-to-suit headquarters will house 2500+ NIAID staff
- Project oversight via construction milestones
- Completion expected Q2 2014

Financing

- \$131M in lease-backed secured notes
- Stream of lease payments assigned to bond investors (securitized GSA lease)
- Bond investors advanced up-front capital for development
- Transaction structured and placed by Bostonia Group

• Taxable revenue bonds enable development of **mission-critical facility** in 2 years instead of 15

Revenue Bonds To Accelerate Biomedical Product Development



“We can do this today!”
-- Peter Flynn, Bostonia

Projects

- High-priority drugs, vaccines, medical devices
- Multi-year translational R&D funding awarded based on top-quality initial science data (e.g. funding from NIH, NGOs, etc.)
- Project oversight via science milestones
- Patients need products completed as fast as possible

Financing

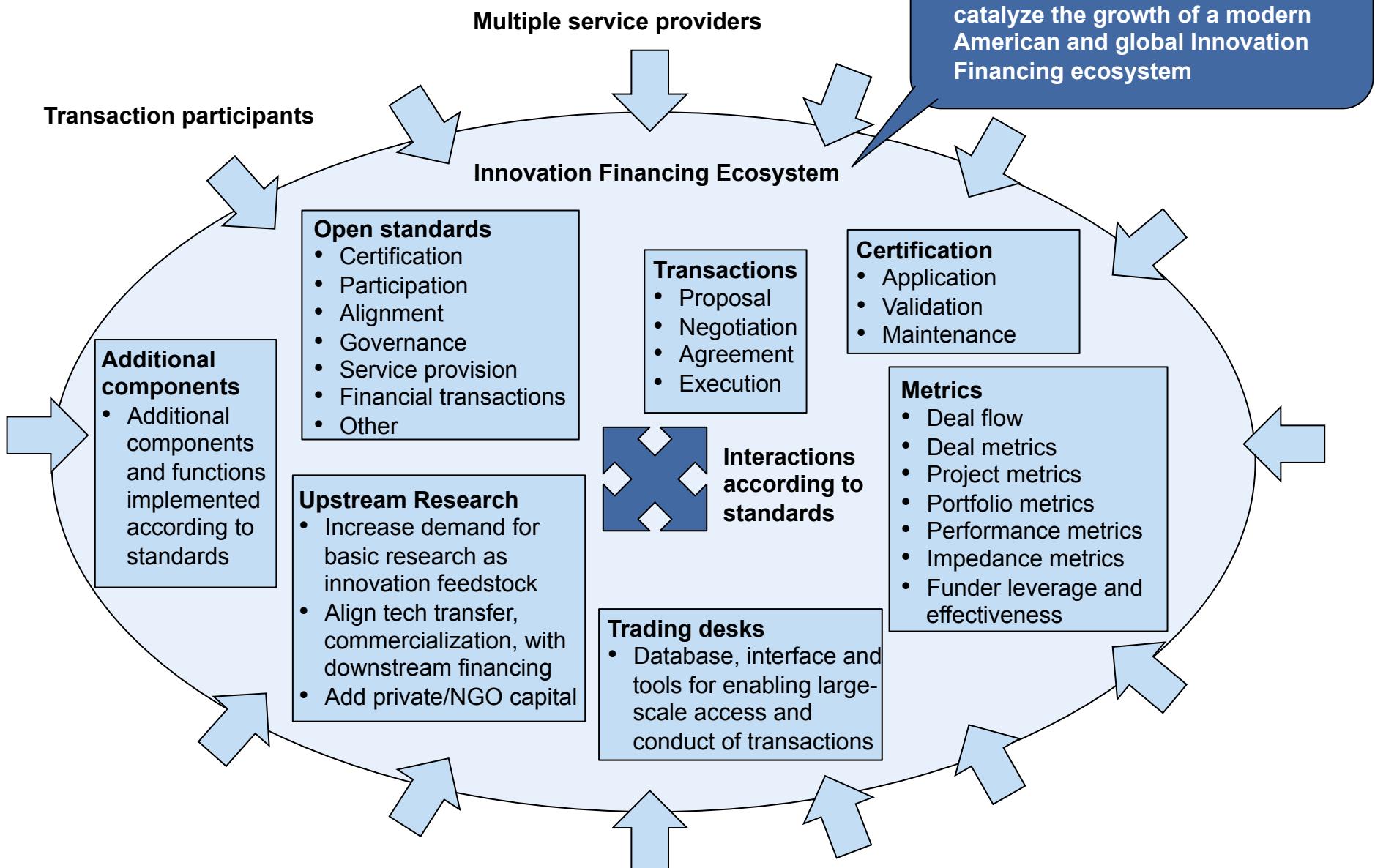
- \$10-100M+ in taxable revenue bonds backed by R&D funding award
- Stream of R&D payments assigned to bond investors (securitized commercial agreement)
- Bond investors advance up-front capital for product development
- Service providers ready to structure transactions

• 30-50% faster & cheaper than legacy system

- Taxable revenue bonds accelerate development of high-priority **biomedical products**
- Product development moves at speed of science
- Legacy financing obstacles removed

INNOVATION FINANCING ECOSYSTEM

Service providers and transaction participants



SUMMARY & NEXT STEPS

Innovation
Financing
Roundtable



Innovation Financing applies proven mechanisms for delivering government R&D funding on **commercial terms**, in tandem with private & NGO **co-investment** in capital stacks, well-defined **asset classes**, and **standardized financing transactions**, to drive America's high-priority, high-impact innovation projects rapidly forward.

- Expand Innovation Financing & Roundtable network
- Conduct initial Innovation Financing projects
- Convene annual Innovation Financing Summit on Wall Street
- Build the Innovation Financing ecosystem across the country
- Establish national Innovation vision, goals & agenda for projects, products, jobs and economic growth