

Under the Patronage of His Excellency **Eng. Abdulrahman bin Abdulmohsen AlFadley**
Minister of Environment, Water & Agriculture

منتدى المياه السعودي
saudi water forum

SWF 2024



Innovation and Investment in Emerging Water Technologies - Inventor lens

Neil Reynolds @ SWCC @ Portfolio Career @ Mentor to many



29 April – 01 May 2024



Hilton Riyadh Hotel & Residences
Riyadh, Saudi Arabia

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وزارة البيئة والمياه والزراعة
Ministry of Environment Water & Agriculture



المؤسسة العامة لتحلية المياه المالحة
Saline Water Conversion Corporation (SWCC)



شركة المياه الوطنية
National Water Company



الشركة السعودية لشراكات المياه
Saudi Water Partnership Company



المؤسسة العامة للمياه
Saudi Water Partnership Company



منظم المياه
Water Regulator

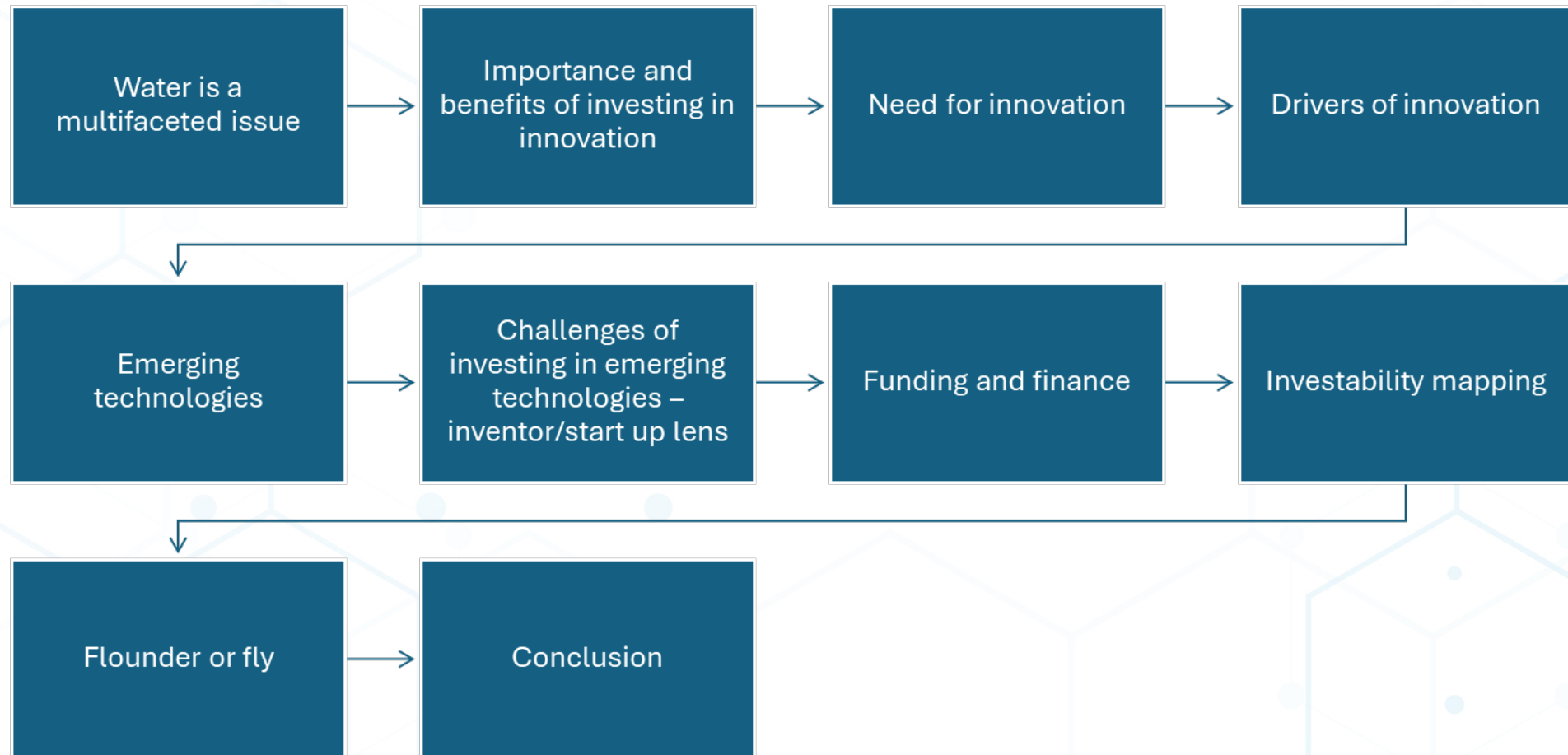


المركز الوطني لكفاءة وترشيد المياه
NATIONAL WATER EFFICIENCY AND CONSERVATION CENTER
MAEE



Organizing Partners

Agenda



The provision of water is a multifaceted issue



Geography and climate



Governance and management



Crucially connected to energy and food nexus and nature and



Technology and innovation



Crucially connected to funding and finance



The importance and benefits of investing in emerging technologies



Improved water quality



Increased efficiency



Cost savings



Resource conservation
and environmental
sustainability



Innovation and
economic growth



Resilient infrastructure



Enhanced access to water

The need for innovation

Current challenges

- Population growth
- Climate change
- Aging infrastructure

Limitations of traditional approach

- Centralisation
- Fragmentation
- Conservative
- Risk adverse
- Resource intensive
- Slow to adopt
- Lack of innovation

Divers of innovation

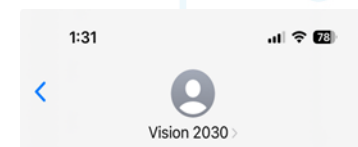
“The successful drivers of innovation in the water industry are shown to include: a **supportive culture at the water utility**; a **regulatory regime that allows or even promotes innovation**; the **financial ability to undertake research and implement improvements**; and crucially, **the backing of the public**.”

WIRES Water 2015, 2:301–313. doi: 10.1002/wat2.1082

“To tackle formidable water challenges, governments must orchestrate strategic collaboration between academia, and industry in open innovation networks, and through optimal pairing of push and pull policies, serve as catalysts for continuous innovation and human progress”

- Utopia

Neil Reynolds (Industry Veteran)



Text Message
Friday 2:03 PM

عشناها.. وحققتها معًا
قيادة وشعب
مواطن ومقيم
شركات وأفراد
اطلع على التقرير السنوي لرؤية
السعودية 2030
[http://
www.vision2030.gov.sa/ar/
annual-report-2023/](http://www.vision2030.gov.sa/ar/annual-report-2023/)

Emerging Technologies (Examples)

FOAK (First-of-a-Kind)

- Electrochemical desalination
- Hydrogen Fuel Cells
- Solid State Far UVC Technology

NOAK (Nth-of-a-Kind)

- Reverse Osmosis (RO) Desalination
- Membrane Bioreactors (MBRs)
- Ultraviolet (UV) Disinfection

“The Oxford English Dictionary defines the verb ‘to innovate’ as ‘to bring in (something new) the first time’ and ‘to make changes in something established’.”

“Disruptive innovations are not breakthrough technologies that make good products better; rather they are innovations that make products and services more accessible and affordable, thereby making them available to a much larger population.”

Challenges of investing in emerging technologies – through an inventor/start up lens



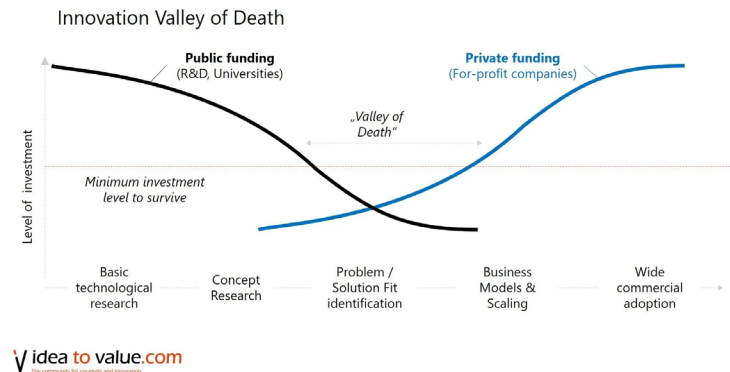
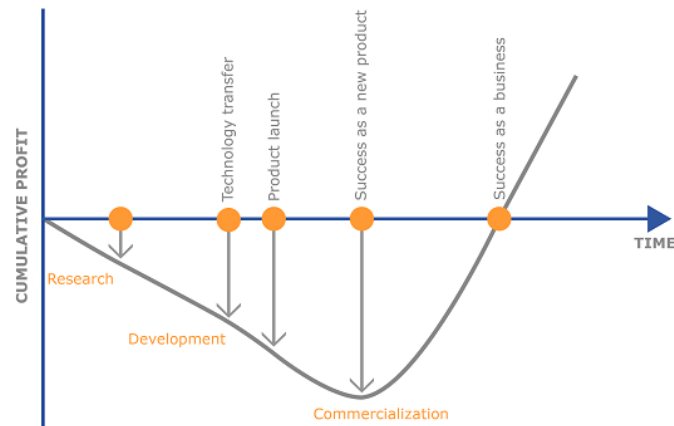
Challenges

- High upfront costs
- A regulatory regime that supports innovation
- Technical risks
- Intellectual Property/Licensing
- Start-up failure rates
- All-terrain vehicle founder skills
- Growth vs scaling
- Skills, learning and development
- Founder struggles and fatigue
- Daily fundraising (yes....daily)

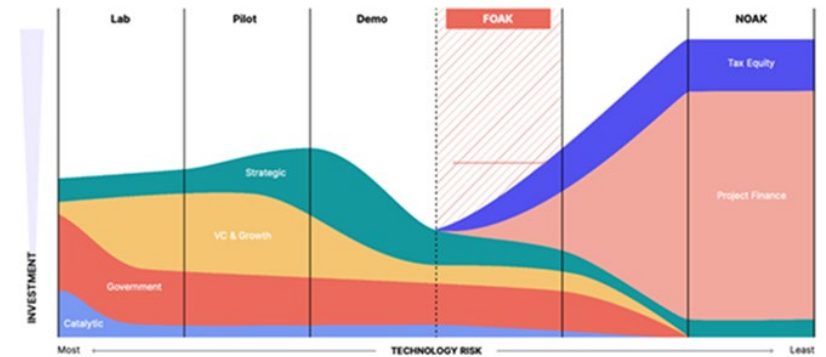
Mitigation

- Collaborative partnerships/entrepreneurial ecosystem
- Government incentives and support (grants, training)
- Pilots and Demonstrations
- Technology innovation funds and venture capital
- Regulatory support and streamlined permitting
- Pick the right team
- Investability mapping
- Advisors/Mentors/Coaches

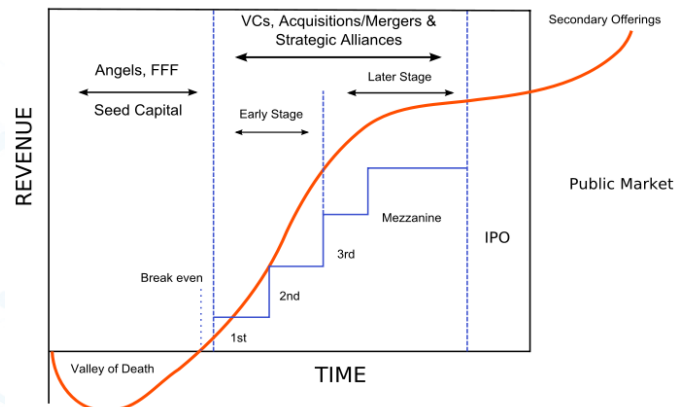
Innovation is crucially connected to funding and finance



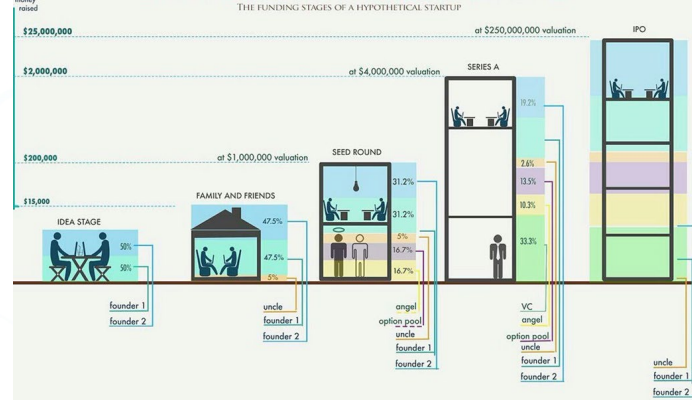
The blended capital stack: from FOAK to NOAK



Startup Financing Cycle

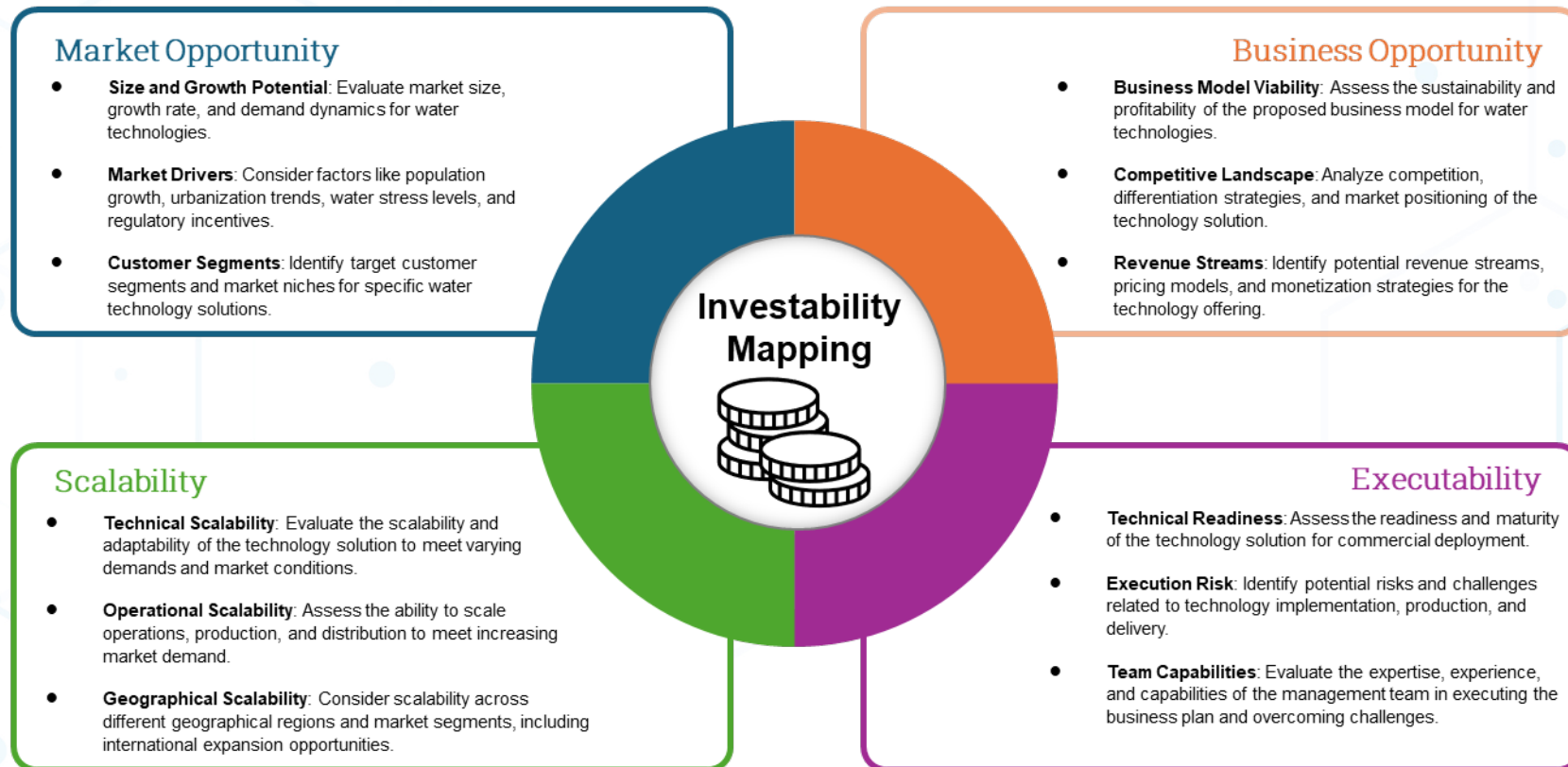


STARTUP FUNDING DEMYSTIFIED



But...Innovation occurs across areas of human endeavor where we confront challenges, not just where we get paid.

How investable are you?

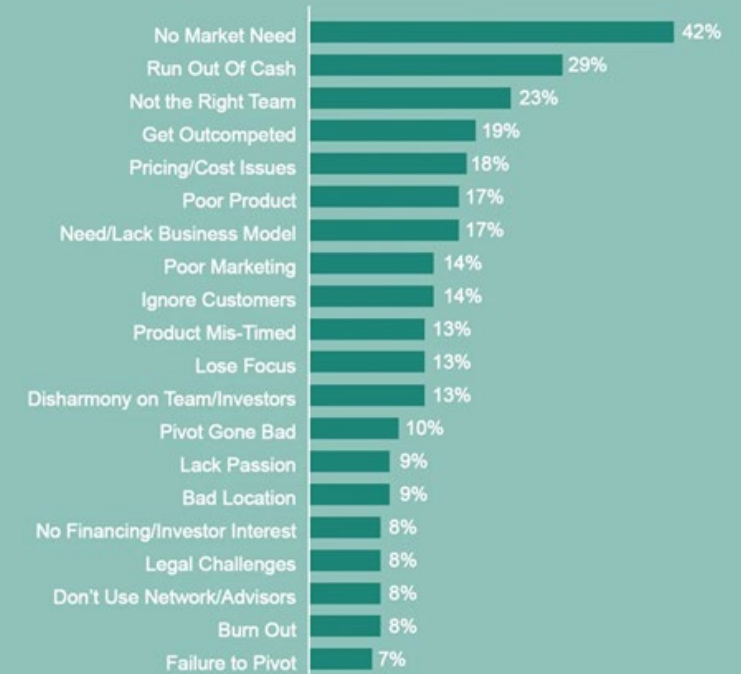


Flounder or fly

- Entrepreneurial personality and an executive personality
- Loyalty to comrades
- Task orientation
- Single-mindedness
- Working in isolation

About 90% of Startups Fail.

90% of new businesses usually shuts down.
The top 20 reasons why startups fail include:



Conclusions

- Innovation and technology is crucial to water conservation and security...but so is funding and finance...
- The idea is easy!
- The search and iteration for a value proposition and business model is hard.
- Know your market, raise money (daily..), pick the best team.
- Execution and scaling is where winners are decided.
- Supportive ecosystem (Government, Academia, Industry)

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THANK YOU



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