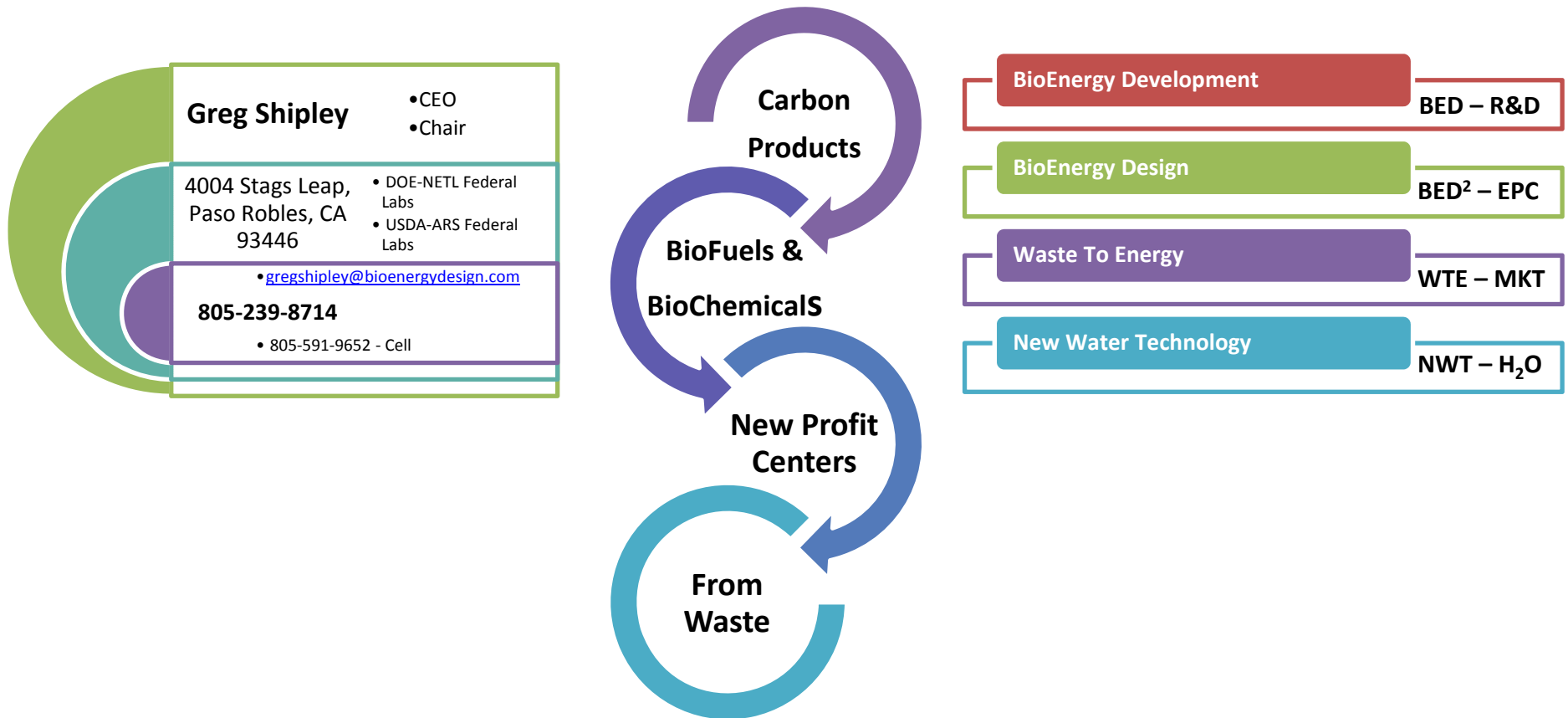
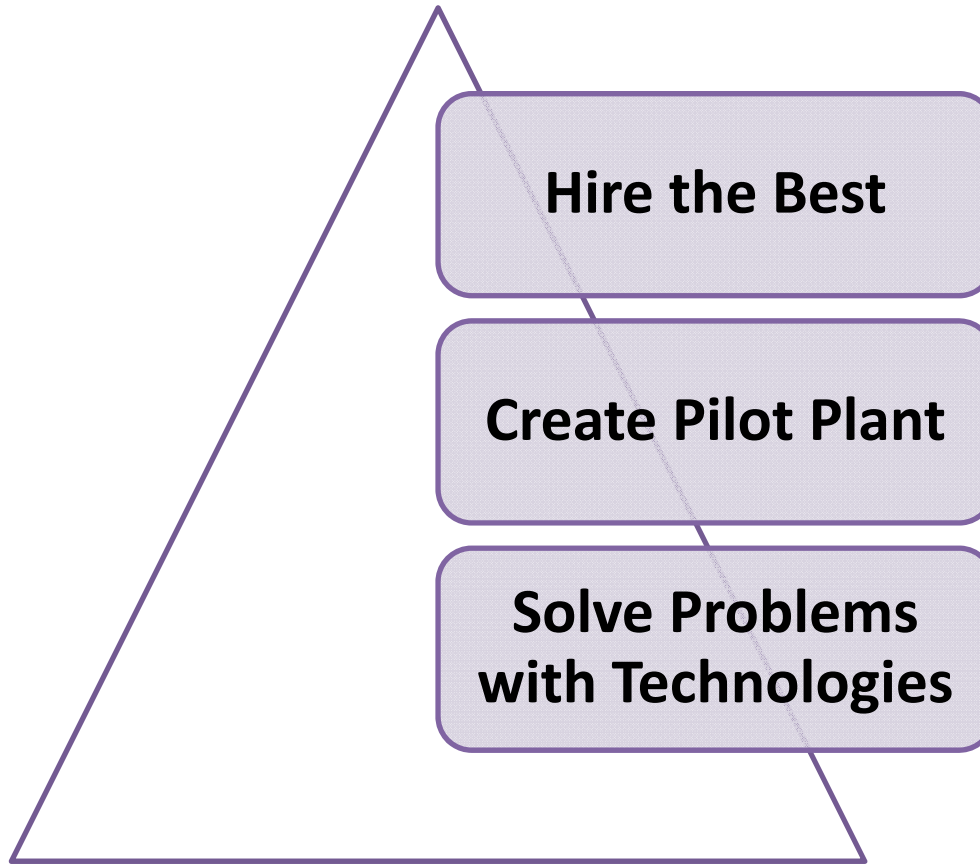


FINANCING HURDLES

California Bioreources Alliance Symposium 2018



LESSONS LEARNED



Engineers/Consultants

Expensive – but Necessary

Technology Agnostic



BED

R&D

BED²

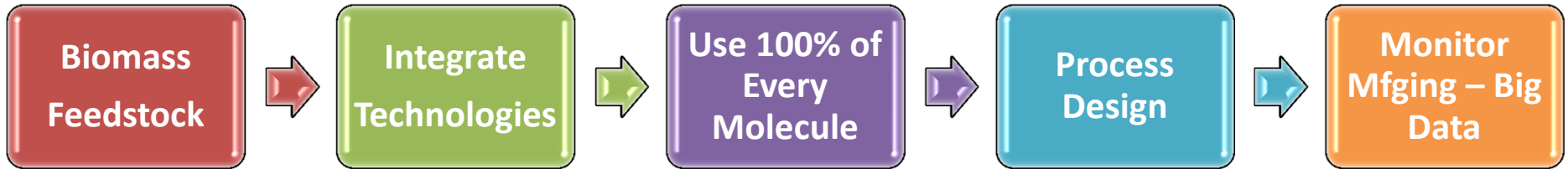
EPC

WTE

Market Development

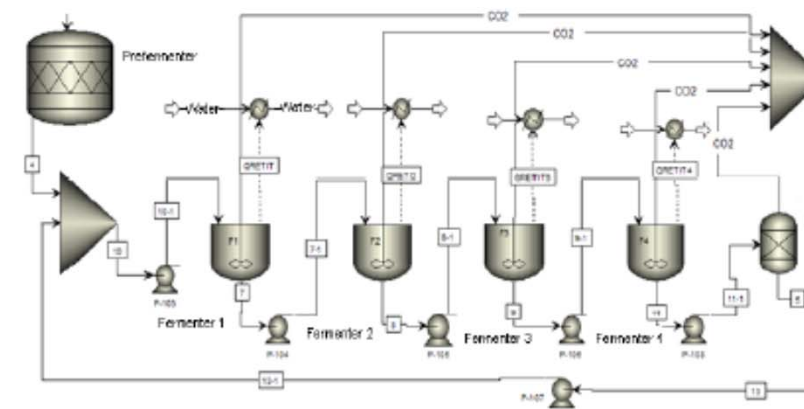


Using Process Engineering Tools for BioRefinery Production Process Modeling

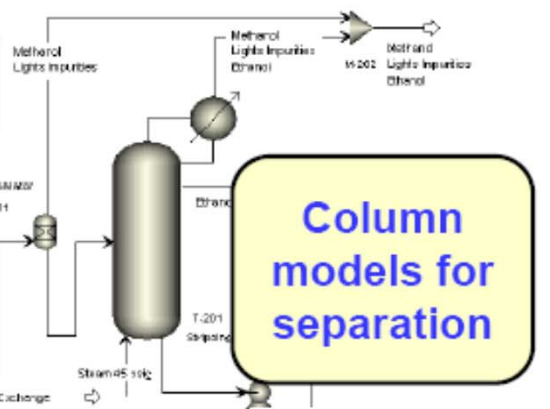


Ultanal / Proxanal
To characterize biomass

Exchanger Design



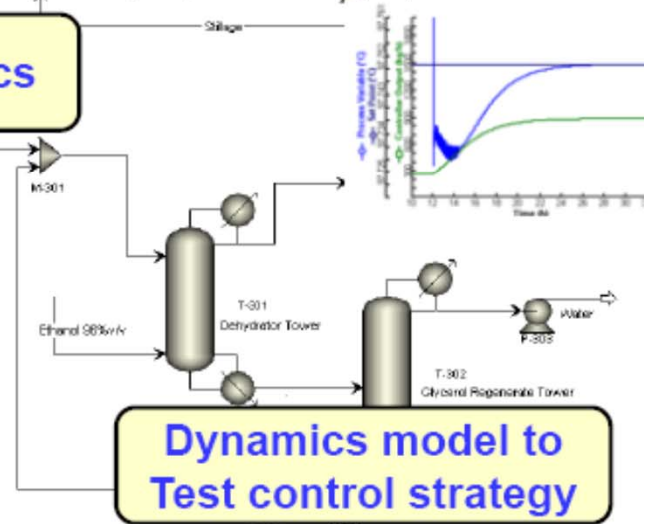
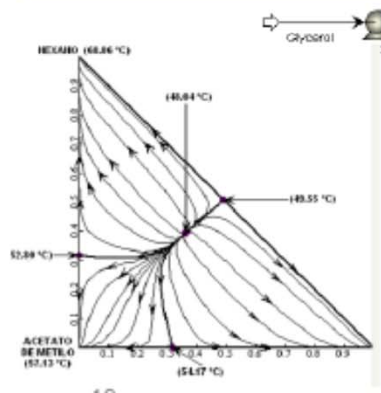
Process economics



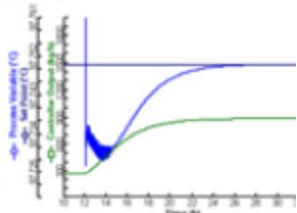
Column models for separation

Rate-based reaction Models for fermentation

Conceptual design extractive distillation



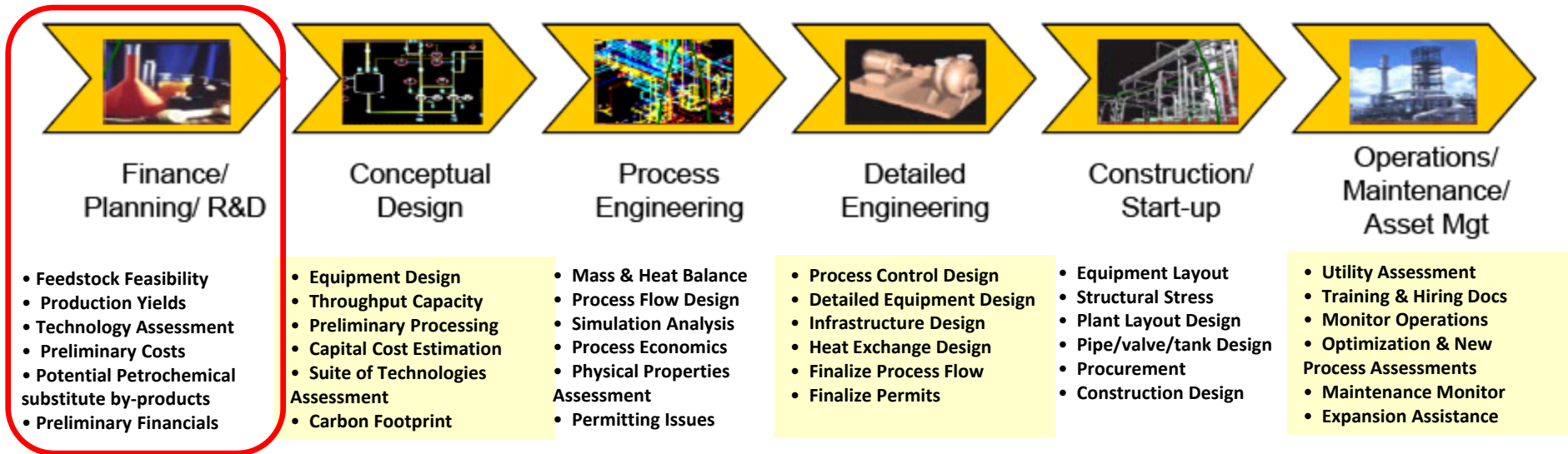
Dynamics model to Test control strategy





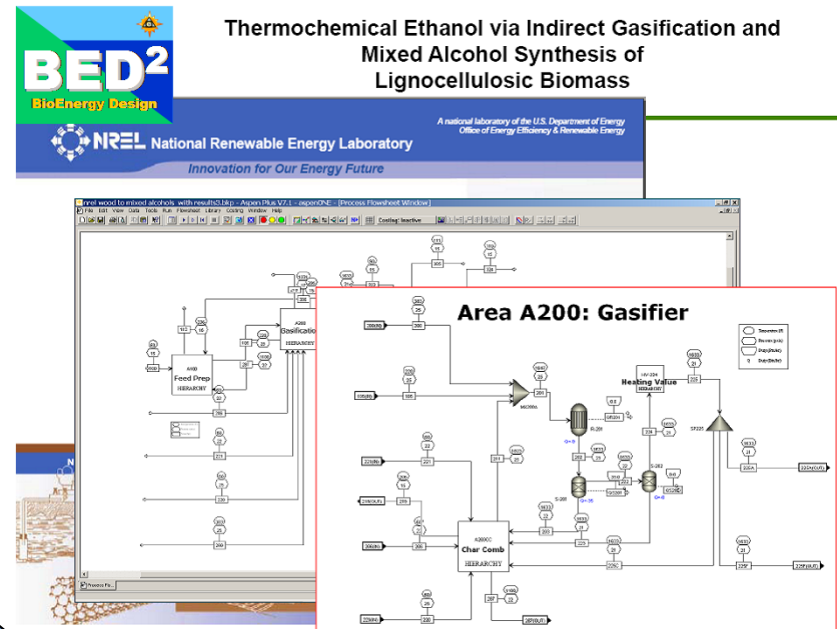
Customized Engineering to Support BED Technologies

COMPLETE ENGINEERING SERVICES AND FEES



BED² Assures Accuracy

- Complete Audit Trail
- Largest Database to support operations/R&D/Costs
- Complete documentation for all permitting processes. All changes are made throughout thousands of pages of engineering docs & designs
- Simulations, finite element analysis, and other design critiques
- Dedicated engineering software



THREE-LEGGED STOOL MODEL



FEEDSTOCK AGREEMENT

TECHNOLOGY

OFF-TAKE AGREEMENT

A horizontal bar with a blue background and a green triangle on the left side. It contains three logos and their corresponding text: a stylized globe logo above 'BED', a sun logo above 'BED²', and a star logo above 'WTE'.

BED **BED²** **WTE**

R&D

EPC

Market Development

SEEK FINANCING



EQUITY v DEBT



BED

R&D

BED²

EPC

WTE

Market Development

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Financial Consultant



STARTUP DEVELOPMENT PHASES



Ideation

Potential scalable product/service idea for big enough target market. Some initial revenue models for how it would make money. One person OR only vague team; no confirmed commitment and/or no right skills balance in the team structure yet

Concepting

Having clear and meaningful target with clear direction for min. 3 years with milestones to get there, -> 3, 6, 12, 24, 36 months... Having team of two or three core founding people with balanced ownership. Can also already have some extended team with lighter commitment (stock options and/or cash compensation)

Commitment

Committed & skills balanced founding team. Able to develop the product/service (Minimum Viable Product) without dependency of uncommitted external resources OR already have initial product/service developed. Have signed shareholder agreement between founders, with milestones, committed time and money usage, for min. 2+ years with vesting etc.

Validation

Can already show some user growth and/or revenue (initial traction). AND/OR continue to attract additional resources (money or sweat equity) for equity or future revenues. Looking for clear market validation (Product Market Fit), to be able to move into scaling.

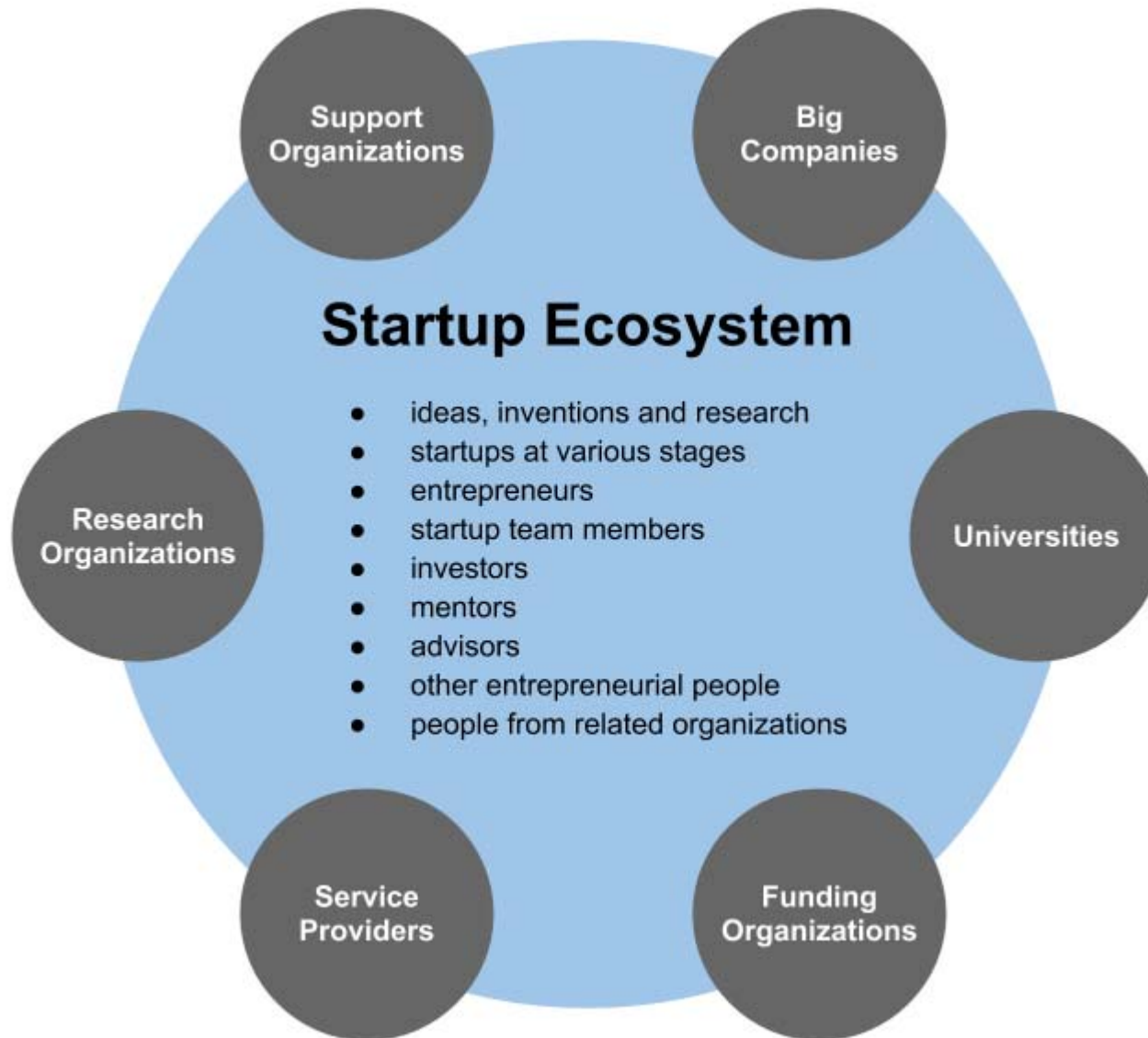
Scaling

Showing clear, growing and measurable user/market traction in big or rapidly growing target market. Can and want to scale fast. AND/OR is able to attract significant funding.

Establishing

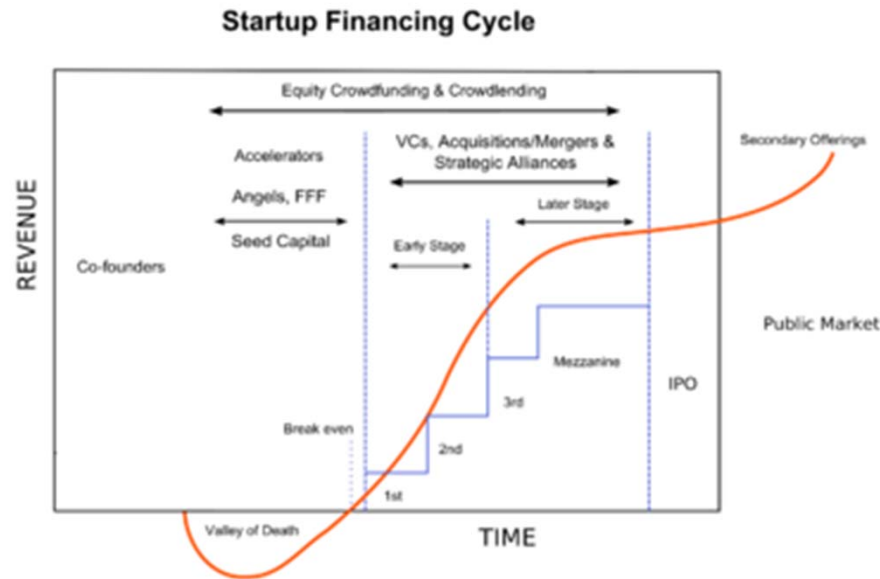
Achieved great growth, that can expected to continue strong. No longer need to "try" get resources and can get those easily. Continue to grow and often wants to culturally continue behaving like a "startup" for as long as possible. Founders make exit or continue biz as usual.

Jeff Tolle – Financial Consultant



Jeff Tolle – Financial Consultant

SEEK FINANCING



Jeff Tolle – Financial Consultant

DOCUMENTATION



Contracts

Engineering

Business Plan - Financials

Jeff Tolle – Financial Consultant