بسم الله الرحمن الرحیم

در مسیر کارآفرینی دانش بنیان

جلسه ی هفتم:

تشکیل تیم استارت آپی

رضا لطفی

استاد گروه مهندسی برق دانشگاه فردوسی مشهد

و رییس بنیاد نخبگان خراسان رضوی

۱۸ مرداد ۱۴۰۰

إِنَّ اللَّهَ لَا يُغَيِّرُ مَا بِقَوْمٍ حَتَّى يُغَيِّرُوا مَا بِأَنْفُسِهِمْ

سوره رعد

خدا حال هیچ قومی را دگرگون نخواهد کرد

تا زمانی که خود آن قوم حالشان را تغییر دهند

هدف از برگزاری این نشست ها

- هم می توانیم و هم باید «بیشتر» ارزش آفرین باشیم.
- مهمترین ضعف ما در این مسیر، عدم آشنایی کافی ما با «طرز فکر کارآفرین» و «مسیر کارآفرینی دانش بنیان» هست.

تغییر چیزی نیست که همراه با یک چک لیست بیاید. در دنیایی
زندگی می کنیم که بادها و دریا دائما در حال تغییر هستند و گنج دو
بار در یک مکان پنهان نمی شود. در عوض، آنچه ما در اختیار داریم،
یک قطب نما است.

وظیفه ی ما ایجاد طرز فکر، فرهنگ و روابطی است تا انسانهای داخل
سیستممان به گونه ای توانمند شوند که بخواهند و بتوانند که بادبانها
را در هر شرایط آب و هوایی در جهت جدید و صحیح تنظیم کنند.

از مقدمه ی ناشر در کتاب
The Innovator's Mindset

Example of Divergent Thinking

A man who lived on the 10th floor of an apartment building took the elevator to the ground floor every summer morning in order to get to work. When coming home in the late afternoon, the man took the elevator to the 5th floor and walked up the stairs to his apartment on the 10th floor except on rainy days when the man took the elevator all the way to 10.

How do you explain this behavior?

Example of Divergent Thinking

1. The man was a little person and could only reach as high as the 5th floor button. On rainy days, though, he could use his umbrella to hit the 10th floor button.

2. The man enjoyed the exercise of walking up steps but could only manage 5 floors at a time. On rainy days he would create a muddy mess in the hallway so he took the elevator to 10 then.

3. The stairs from the 5th to 10th floor are outside and unprotected. The man took the stairs when convenient to enjoy the late afternoon sun and view overlooking the Pearl river. On rainy days that was out of the question.

Making Connections is Important!

1. Rain connects with umbrella
   umbrella connects with long stiff rod
   long stiff rod connects with enabling a higher reach
   this suggests solution 1.

2. Rain connects with mud
   mud connects with mess
   mess is to be avoided
   this suggests solution 2

3. Absence of rain connects with sun
   sun connects with pleasure outdoors
   this suggests solution 3

سرفصل مطالب این هشت جلسه ان شاء الله

1. طرز فکر و طرز فکر رشد
2. نوآفرینی و طرز فکر نوآفرینی
3. Design thinking
4. از ایده شروع کنیم یا از مساله؟ چه مسائلی ارزش حل کردن دارند؟
5. بوم کسب و کار و بوم نوآفرینی
6. خلاقیت و حل خلاقانه ی مسائل
7. ویژگی های یک تیم خوب / هنر جذب سرمایه
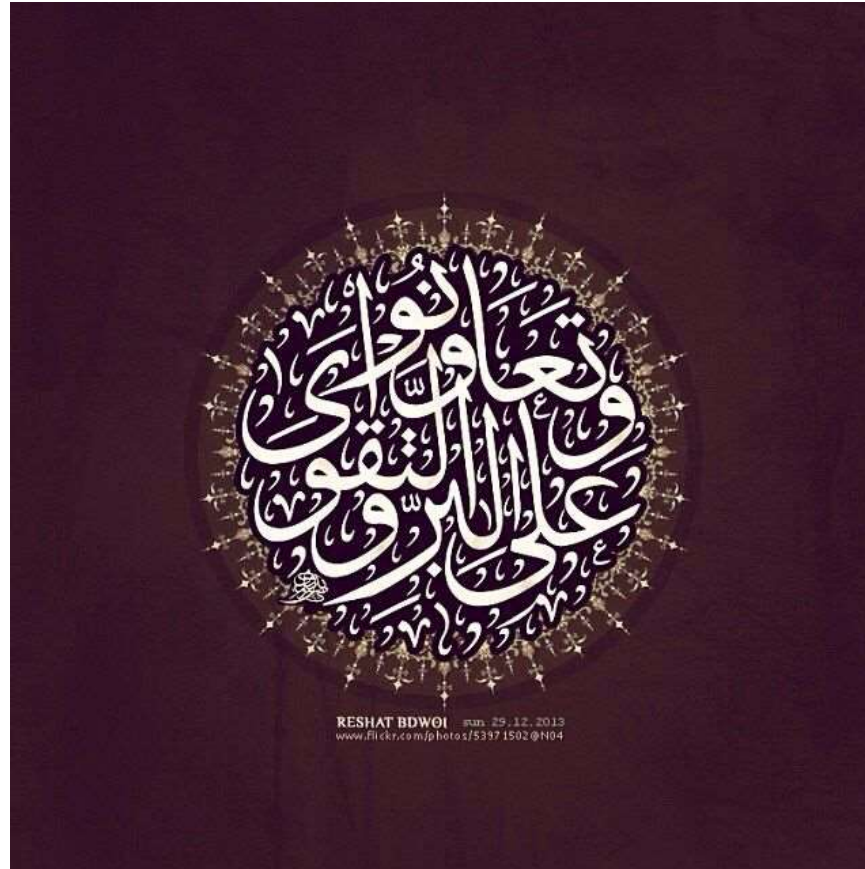8. فرهنگ کار / آنچه در دانشگاه نمی آموزیم

سرفصل مطالب

- اهمیت «تیم خوب»
- ویژگیهای یک تیم خوب
- ساختن تیم استارت آپی
- چند کلمه درباره ی «هنر جذب سرمایه»
- جمع بندی

اهمیت ((تیم خوب))

اهمیت تیم خوب

در مسیر کارآفرینی دانش بنیان: "تشکیل تیم استارت آپی"

اهمیت تیم خوب

The Complete Guide to Building Hardware Startup Teams: Part 1 (Founders + Culture)

Ben Einstein   Aug 17, 2017 · 11 min read

در مسیر کارآفرینی دانش بنیان: "تشکیل تیم استارت آپی"

اهمیت تیم خوب

Zero to One

why work at [your] startup?

You can do **irreplaceable work** on a **crazy problem** with **amazing people** that **no one else is going to get done.**
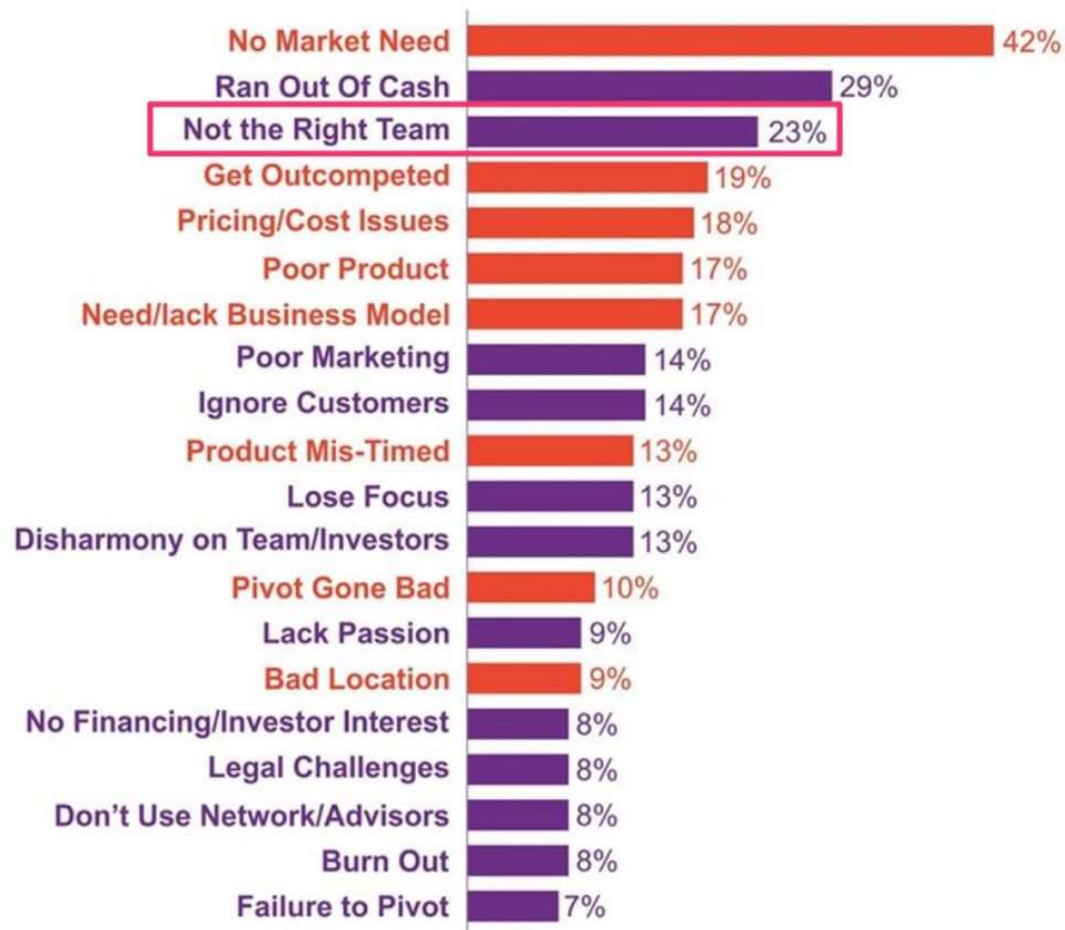
در مسیر کارآفرینی دانش بنیان: "تشکیل تیم استارت آپی"

اهمیت تیم خوب

Top 20 Reasons Startups Fail

Based on an Analysis of 101 Startups Post-Mortems

Reason	Percentage
No Market Need	42%
Ran Out Of Cash	29%
Not the Right Team	23%
Get Outcompeted	19%
Pricing/Cost Issues	18%
Poor Product	17%
Need/lack Business Model	17%
Poor Marketing	14%
Ignore Customers	14%
Product Mis-Timed	13%
Lose Focus	13%
Disharmony on Team/Investors	13%
Pivot Gone Bad	10%
Lack Passion	9%
Bad Location	9%
No Financing/Investor Interest	8%
Legal Challenges	8%
Don't Use Network/Advisors	8%
Burn Out	8%
Failure to Pivot	7%

اهمیت تیم خوب

Top 10 skills

in 2020

1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgment and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility

in 2015

1. Complex Problem Solving
2. Coordinating with Others
3. People Management
4. Critical Thinking
5. Negotiation
6. Quality Control
7. Service Orientation
8. Judgment and Decision Making
9. Active Listening
10. Creativity

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در مسیر کارآفرینی دانش بنیان: "تشکیل تیم استارت آپی"

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- جمع بندی

"Must-Have" Characteristics of a Tech Startup Founding Team
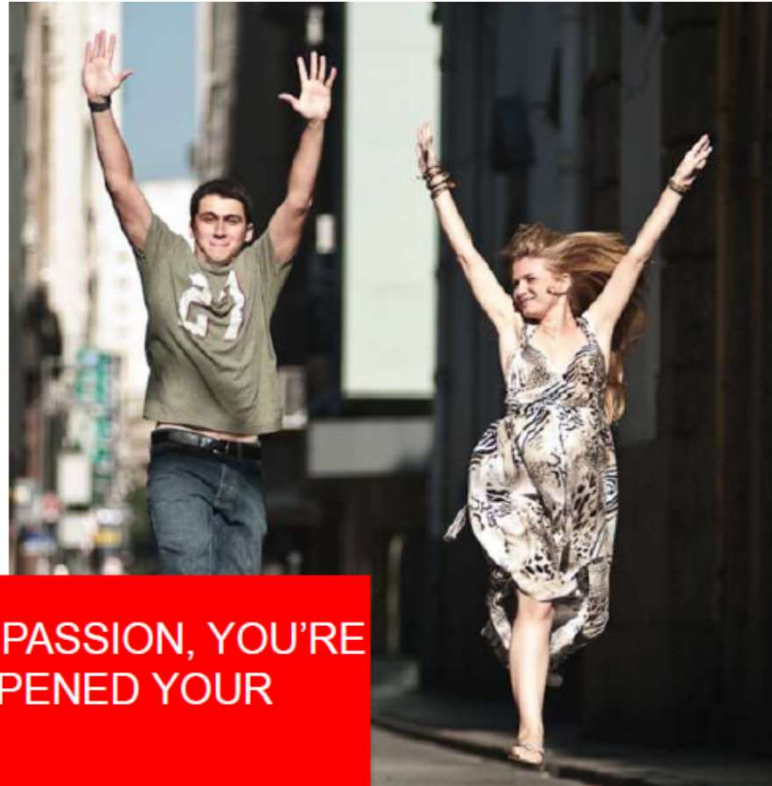
در مسیر کارآفرینی دانش بنیان: "تشکیل تیم استارت آپی"

https://entrepreneurshandbook.co/13-traits-that-really-matter-in-a-startups-founding-team-454fe4d4535e

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14. IF IT'S NOT ABOUT PASSION, YOU'RE DEAD THE DAY YOU OPENED YOUR DOORS

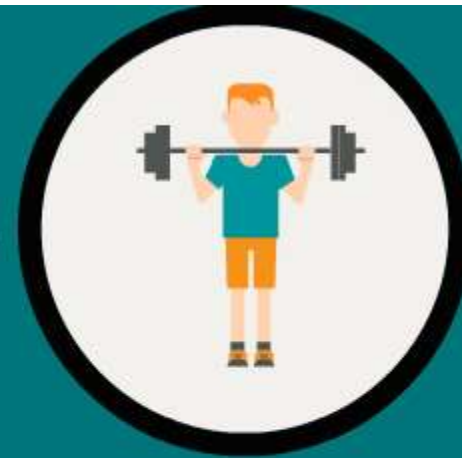در مسیر کارآفرینی دانش بنیان: "تشکیل تیم استارت آپی"

17. COMMUNICATE AND SHARE LEARNING

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در مسیر کارآفرینی دانش بنیان: "تشکیل تیم استارت آپی"

Know Strengths & Weaknesses

A good team member understands their own & each team members strengths & weaknesses to ensure everyone contributes and adds value.

Communication Skills

A good team player is able to share information and resources with other team members and communicate whatever is necessary

Flexible

A good team player needs to be flexible to accommodate the needs of the team and to work well with others.

Willing To Compromise

A good team player is able to compromise when their point of view or ideas are not embraced or the right fit for the team.

Listen

A good team player knows how to listen to teammates. Understanding about the team and what needs to happen, gaining valuable feedback and knowing where others stand on issues.

Committed

A good team player is always committed to the team goal and focussed on the overall success of the team.

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The Complete Guide to Building Hardware Startup Teams: Part 1 (Founders + Culture)

Ben Einstein   Aug 17, 2017 · 11 min read

https://beneinstein.medium.com/the-complete-guide-to-building-hardware-startup-teams-part-1-founders-culture-773b62cced65

The Complete Guide to Building Hardware Startup Teams: Part 1 (Founders + Culture)

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- Building a team is the single most important task startups do on their journey.

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•Hire full-time employees

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- **Three unique stages of team building process:**

    1. Founders and Culture — this section focuses on the founding team and the culture they instill in the company. This stage of team building is all about laying the foundation for attracting the right types of people down the road.

    2. Contributors and Product —this section focuses on early contributors and the people required to build the first product. This stage of team building is all about validating the primary assumptions of the company and that product/market fit can be found.

    3. Management and Scale — this section focuses on the management team and scaling the company to attain market dominance. This stage of team building is all about company structure and repeatable growth.

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- Selecting your co-founder is the most important decision you make when starting a company.

The Best Founders

SMARTS
Raw intellectual horsepower. Always searching and learning. Never stands still.

NETWORK
Insatiable ability to meet (and attract) people to a core vision.

BRAVERY
Willingness to forge a new path.

RESILIENT
Never gives up, even under the toughest conditions.

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The Best Founding Teams

SUPPORT

Working hand in hand to solve hard problems. Sharing responsibility.

COMMUNICATION

Open and honest. Comfortable talking about the hard things.

CHEMISTRY

Something magic happens when together. Stronger as a group than separately.

COMPLEMENTARY

The weakness of one founder is the strength of another. Hacker + hustler paring.

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Finding Co-founders

The best founder teams tend to come from a few places

SCHOOL/COLLEGE
Known each other for years, lived together, classes together, etc

WORKED TOGETHER
Met at previous company, worked on same team.

PREVIOUS FOUNDERS
Founded previous company together or early employees together

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These Tend to Be Less Useful

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- Once you believe you have the right co-founder(s) around the table,

    1. Sit down as a co-founding team and write a list of each person's responsibilities. You can do this together, or perhaps more interestingly, as a blind exercise.

    2. Have hard conversations early. Here are a few critical ones: how to divide equity (50:50 often isn't right), what would trigger each founder to leave, what is needed for each founder to stay, how/when to shut the company down, and how much cash compensation is necessary for each founder.

    3. Put all of this in writing and sign/save it!

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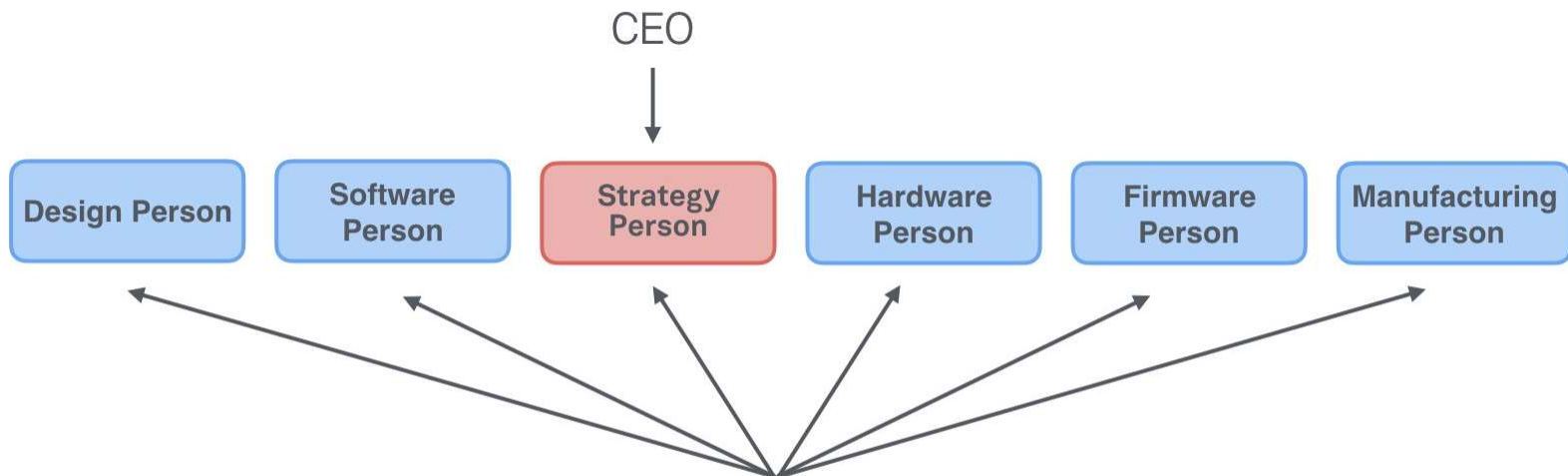
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The Right Founding Team

Aka how to build a high-performing, contributor-driven culture

CEO

| Design Person | Software Person | Strategy Person | Hardware Person | Firmware Person | Manufacturing Person |

Individual contributors

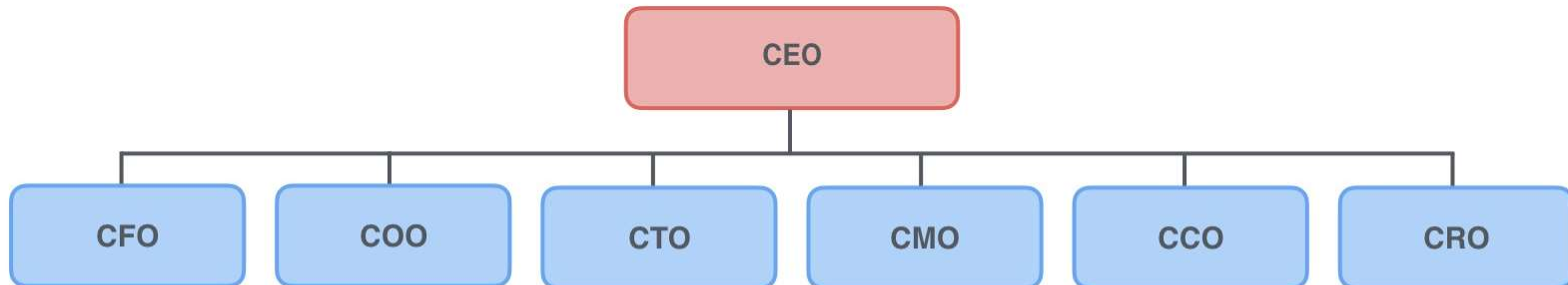در مسیر کارآفرینی دانش بنیان: "تشکیل تیم استارت آپی"

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The Wrong Founding Team

Aka how to build a non-performing, top-heavy team

> " *Managers should be a lagging indicator* "

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Maintaining the Relationship

GET OUT

Off-sites are your friend. Spend time alone as founders away from the office (and other employees).

A BIT APART

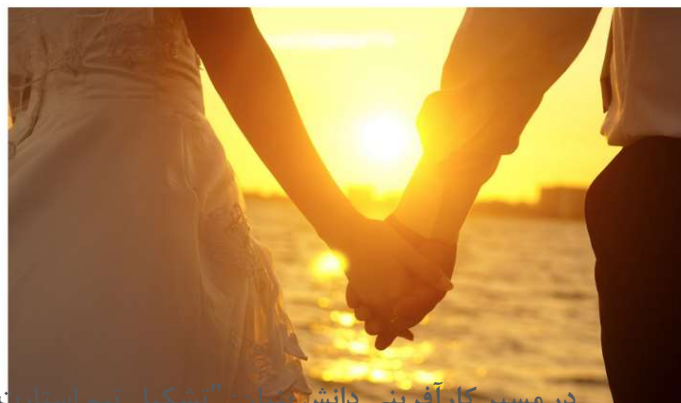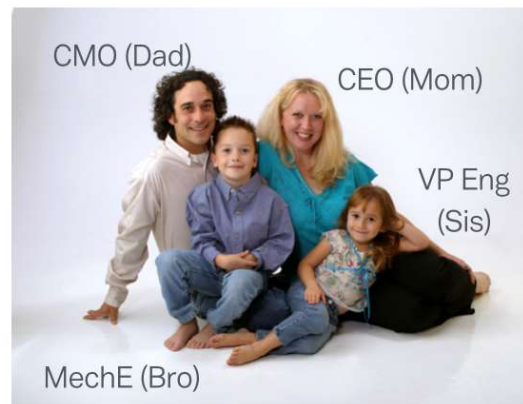But not too much! Spend enough time apart to remember yourself. Leaving your phone behind helps a bunch.

TALK TO JERRY

Management coaches or intimate advisors who are trained to help startup founders can be instrumental as you grow.

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Team Red Flags For Investors

ADVISORS AND INVESTORS
LOREM IPSUM IS SIMPLY PLACEHOLDER TEXT

INVESTOR NAME — Tempor justo iaculis.

CMO (Dad) CEO (Mom) VP Eng (Sis) MechE (Bro)

Bruce L. Hall, MD, PhD, MBA, FACS
Surgeon, American College of Surgeons
Vice President, BJC Healthcare

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Geography

Sales Team

Hardware Team

Software Team

Experts

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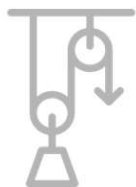
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The Almighty BoD

A good board is one of the most powerful corollaries with success
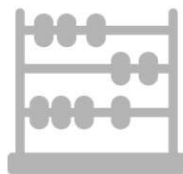
LEVERAGE   **ACCOUNTABILITY**   **NETWORK**

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A Bit On Culture

Culture answers the question "why?"

NOT A DOCUMENT

Culture is based on who you hire and how you support them, not on a mission statement you write.

STARTS ON DAY 1

Great culture grows and is fostered from day one, starting with the relationship between the founders.

TOXIC CULTURE WILL HAUNT

Bad culture can't be fixed easily, it haunts companies for years, making everything impossibly hard.

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Why Your First 10 People are So Important

Share principles (work ethic, etc) but additive in every other way
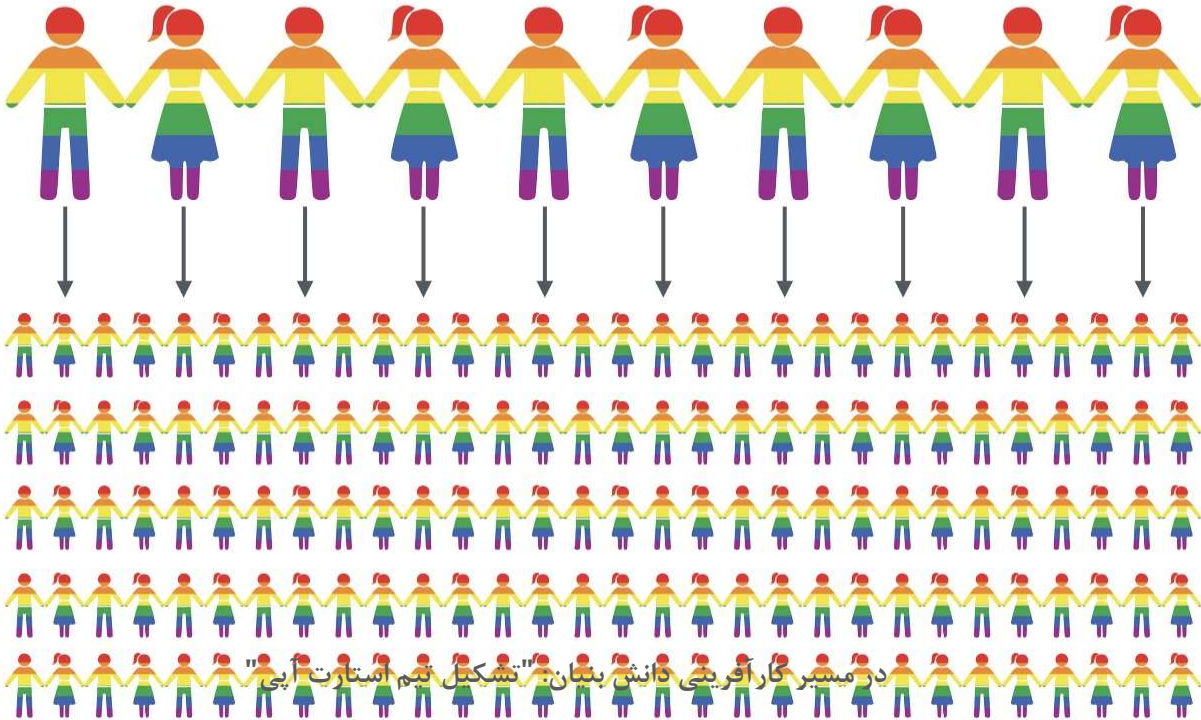
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Three Centers of Gravity

Most connected hardware teams take between 5-8 people to ship + support first product
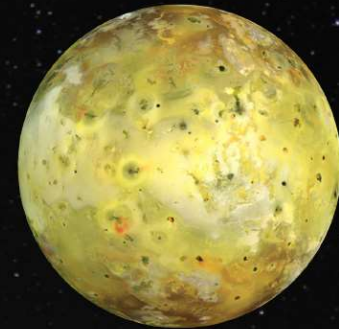
HARDWARE
Mechanical
Electrical
Firmware
UX/Industrial Design

SOFTWARE + WEB
Frontend
Backend
iOS/Android
Secret sauce?

SALES + BUSINESS
Marketing/Retail/Sales
Operations/SCM

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Roles vs People Framework

ROLES	PEOPLE
Mechanical Eng	Founder A
Electrical Eng	Founder B
Firmware	
Industrial Design	HW Person A
User Experience	
Front End Developer	HW Person B
Back End Developer	
Supply Chain Management	SW Person A
Product Manager/EPM	
Quality Control	SW Person B
Customer Support	
Retail/Channel Management	
Sales	
Business Development	

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Un-Matched Roles? Four Options:

HIRE
Find FTE or part-time team members with core competency in missing skills.

LEARN
Working hand in hand to solve hard problems. Sharing responsibility.

OUTSOURCE
Rather than a person, hire a firm to help you out. This is a short-term solution and has many drawbacks.

PUNT
Maybe this is something that can wait until a future revision or later date when you have more info?

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How to Pick?

Expensive

OUTSOURCE

NOW HIRING

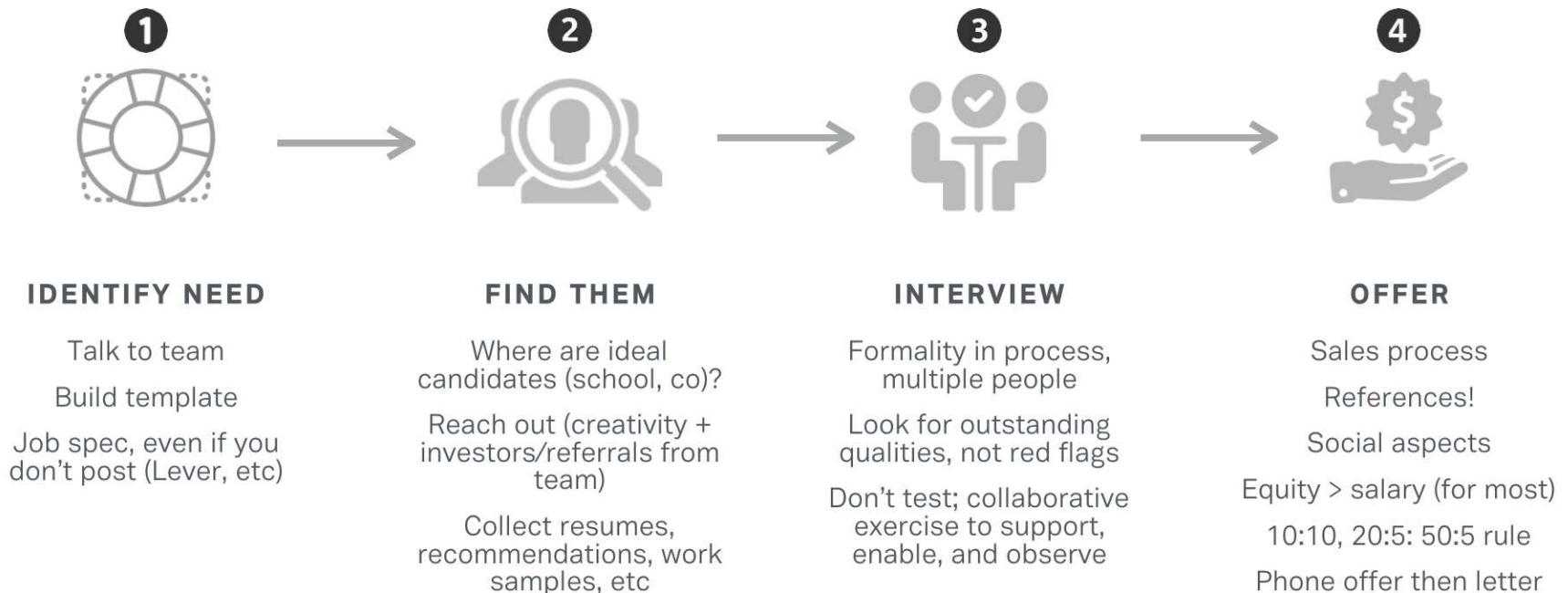HIRE

Easy — Hard

PUNT

LEARN

Cheap

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The (Nearly Always) Best Option: Hiring

① IDENTIFY NEED

Talk to team

Build template

Job spec, even if you don't post (Lever, etc)

② FIND THEM

Where are ideal candidates (school, co)?

Reach out (creativity + investors/referrals from team)

Collect resumes, recommendations, work samples, etc

③ INTERVIEW

Formality in process, multiple people

Look for outstanding qualities, not red flags

Don't test; collaborative exercise to support, enable, and observe

④ OFFER

Sales process

References!

Social aspects

Equity > salary (for most)

10:10, 20:5: 50:5 rule

Phone offer then letter

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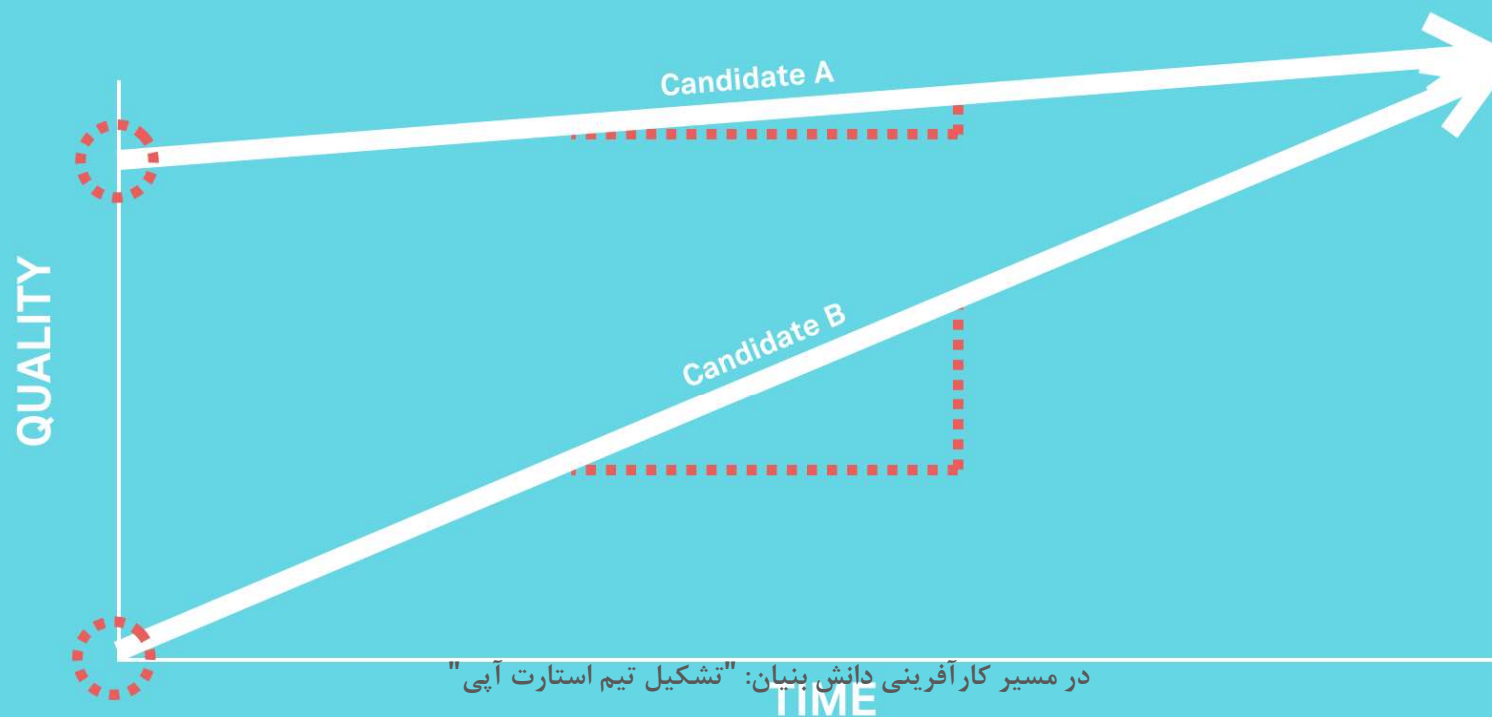در مسیر کارآفرینی دانش بنیان: "تشکیل تیم استارت آپی"

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Hire for Slope, Not Y-intercept

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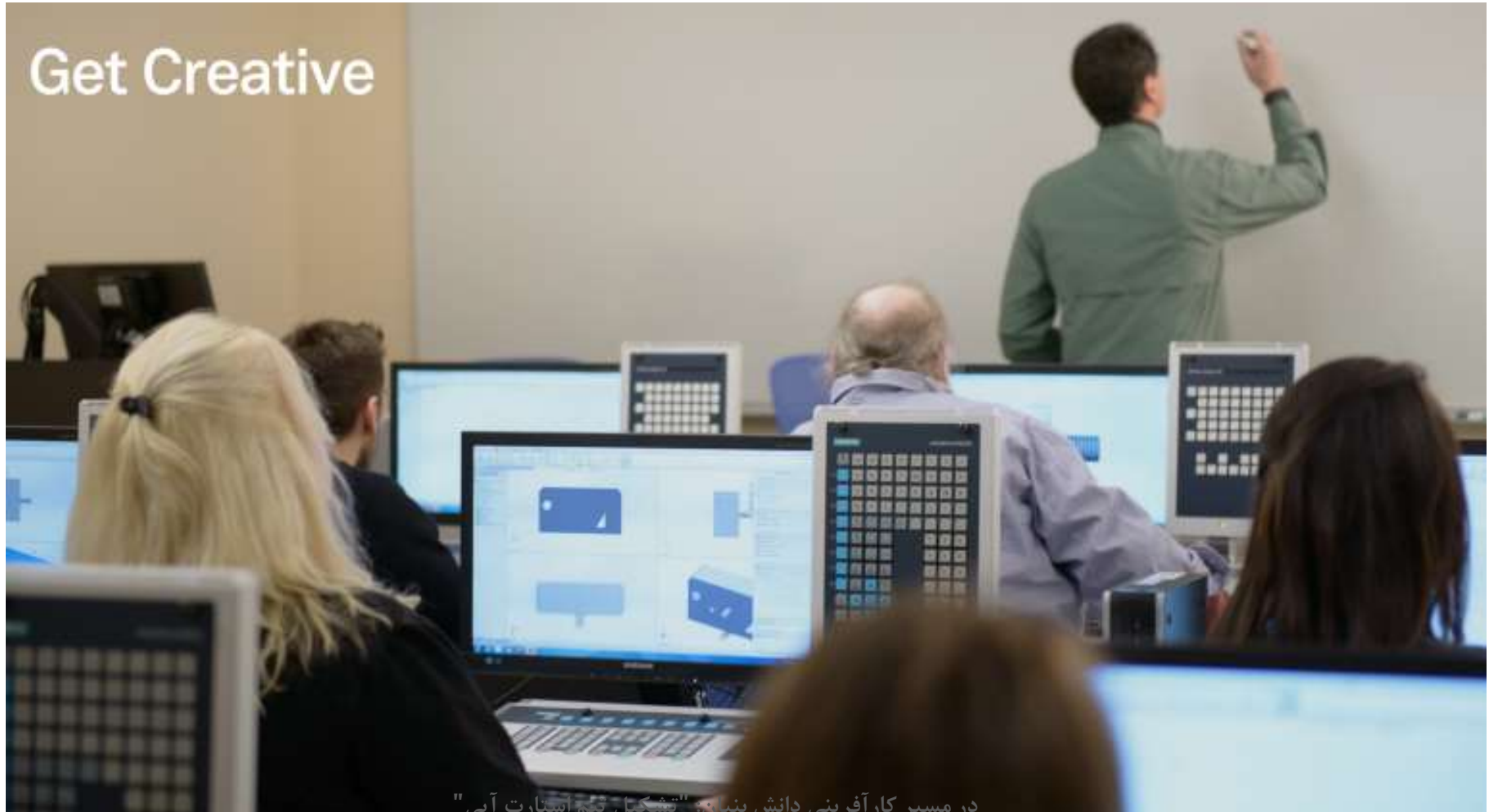
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We Need To Hire But "Can't Afford It"

Something I hear often from startups is "we need to hire but can't afford a really good person." I call bullshit! Don't use this excuse as a crutch to hire B-level (or worse) people. There are often alternative ways to get an excellent person on-board:

- Equity (the most powerful tool you have)
- Advisory or board-type role that grows into a full-time hire
- Raising more money from investors
- Figuring out alternative salary structure based on sales or other performance metrics paid over time

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Second Best Option: Figure it Out Yourself

WHAT TO LEARN

- Anything recurring over lifetime of company (engineering, supply chain, software, etc)

- Anything with a "slow ramp" (low-volume mfg, marketing)

- *Avoid:* high risk, long time constants (high-volume mfg)

- *Avoid:* specialized tasks with proven experts (optics, AI)

HOW TO LEARN IT

- Find the best people in the world and attract them (coffee, publicity, kindness, exchange)

- Online sources: blogs, videos, classes

- Talk to other companies that are ahead of you, how did they do it?

- Experiment

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Option 3: Dangerous Drug of Consultancies
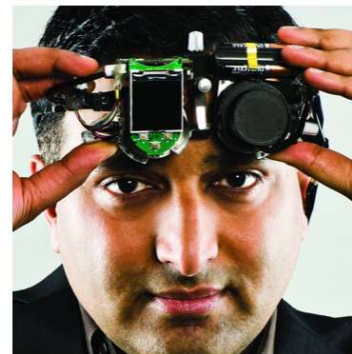
But can be very powerful if used carefully

LEARNING

Startups have one goal: learn as efficiently as possible. Consultancies are in direct opposition to this goal.

INCENTIVE

Startups don't win until they ship a product that delights users. Consultancies are incentivized by cash not success.

EXPERTS

Consultancies can be great for limited scope, focused areas of expertise like optics, antenna design, or RFQs

INDIVIDUALS

In most cases, a great individual consultant trumps an outsourced company, esp "bang for buck"

در مسیر کارآفرینی دانش بنیان: "تشکیل تیم استارت آپی"

The Complete Guide to Building Hardware Startup Teams: Part 2 (Contributors + Product)

Ben Einstein · Aug 25, 2017 · 9 min read

Keep Gravity Around the Company!

Maximizes organizational learning potential

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Ben Einstein · Aug 25, 2017 · 9 min read

Other Strategic Team Players

Most early hardware startups outsource these

LAWYERS

Experience in your area + stage trumps. Pennywise pound-foolish. Openness to standard docs and sharing existing.

Wilson Sonsini, Foley, Cooley, Schox

ACCOUNTANTS/'CFO'

Manage P&L, balance sheet, assets, coordinate with tax + audit if necessary.

Backops, EarlyGrowth, Kruze, Propeller

HUMAN RESOURCES

Payroll, insurance, benefits, risk + compliance, on-boarding, company manuals, training, etc

Trinet, Gusto, Zenefits

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Deciding When to Punt

You simply can't do everything well the first time

در مسیر کارآفرینی دانش بنیان: "تشکیل تیم استارت آپی"

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Punting Framework

QUESTIONS TO ASK

- Which features can be removed for first release?
- Which geographies can we wait to sell to?
- How can we lower SKU count?
- How can we eliminate/simplify non-critical components (packaging, accessories, SCM, etc)?
- How can we make fewer units?

OUTCOMES

- Focus on one or two key features
- Launch to a single geo
- Launch a single SKU (color, package, etc)
- No retail packaging, off the shelf accessories
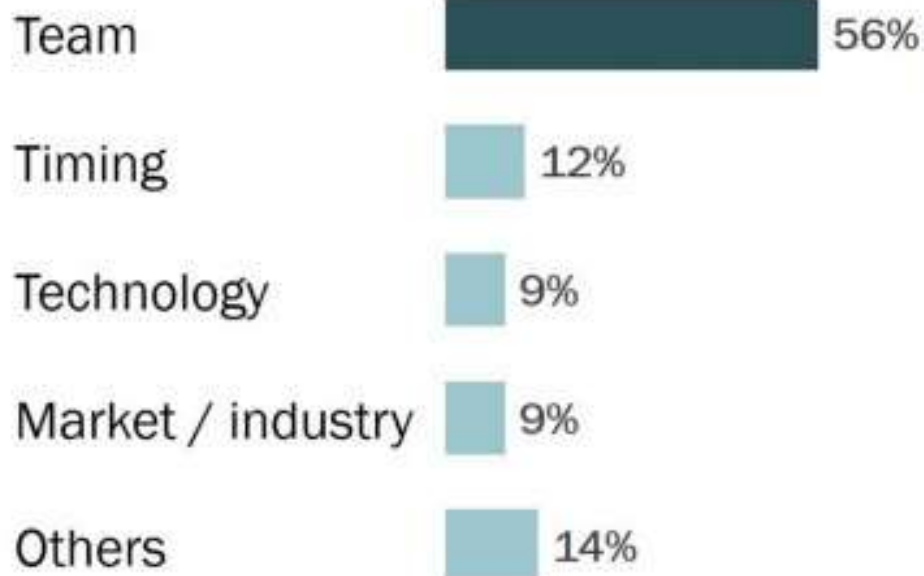- Make minimum number of units possible to demonstrate value inflection

سرفصل مطالب

- اهمیت «تیم خوب»
- ویژگیهای یک تیم خوب
- ساختن تیم استارت آپی
- چند کلمه درباره ی «هنر جذب سرمایه»
- جمع بندی

هنر جذب سرمایه

Factors for successful VC investments[1],
% cited as most important factor

Team	56%
Timing	12%
Technology	9%
Market / industry	9%
Others	14%

- In a survey of 500+ VCs, 56% cite having the right team as a leading cause of their investment being ultimately successful

- Holding times are lengthening and later stage investing is more common—making talent that much more critical

1 Gompers et al. "How Do Venture Capitalists Make Decisions?", weighted average of early- and late-stage startups
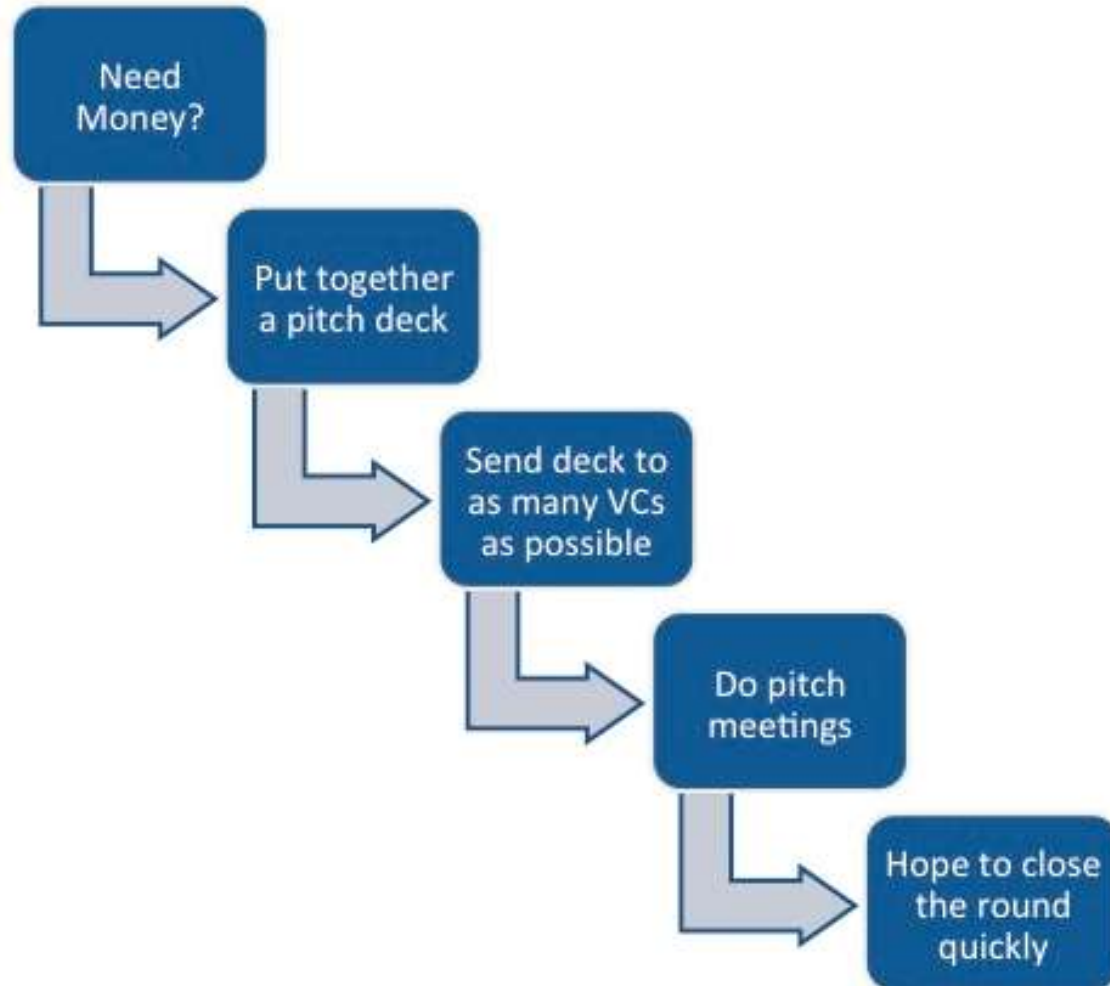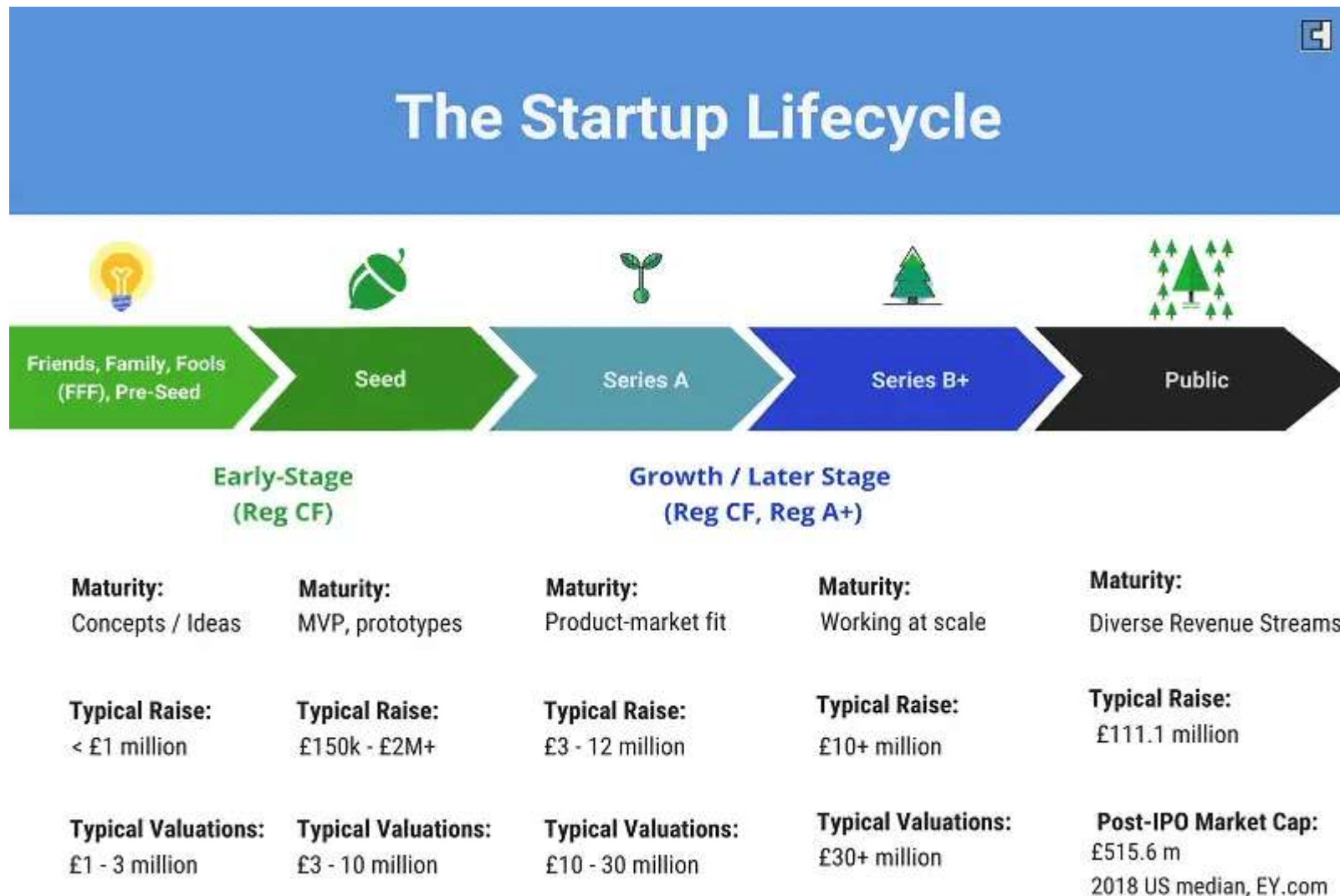
در مسیر کارآفرینی دانش بنیان: "تشکیل تیم استارت آپی"

هنر جذب سرمایه

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هنر جذب سرمایه

The Startup Lifecycle

Angel Investor vs VC

The most important distinctions between angels and VCS are:

•Angels invest their own money; VCs invest other people's money.

•Angel investment is much more likely to be in hundreds of thousands than in millions of dollars.

https://www.plugandplaytechcenter.com/resources/simple-guide-startup-investment/
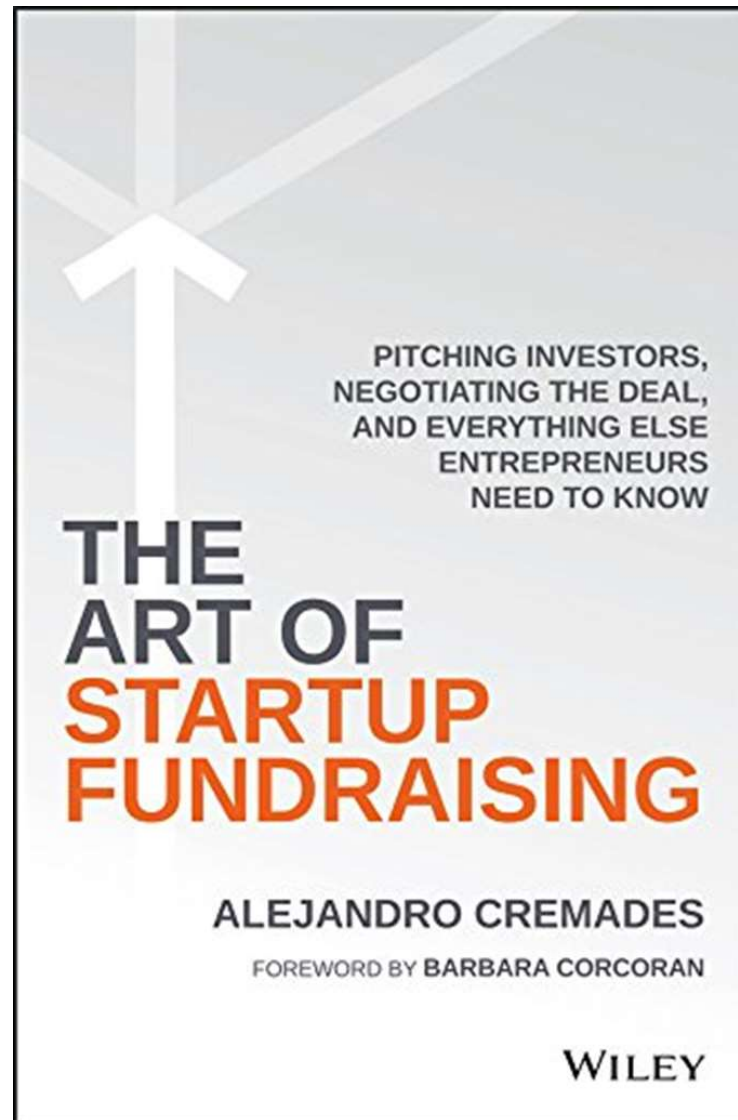
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بیاندیشیم

- چقدر team player خوبی هستیم؟

- آیا می توانیم مهارتهای کارگروهی را در خود پرورش دهیم؟

- آیا با من هم عقیده هستید که جای این مطالب در دانشگاههای ما خالی است؟

برای مطالعه ی بیشتر

برای مطالعه ی بیشتر

the same equation independently, then that person has done nothing wrong legally. Under a copyright regime, where independent invention is a valid defense, provided you have not reviewed and copied code from a copyright holder, you are free to write all the code you can dream up independently.

Because it doesn't offer a patent's monopoly protection, a copyright is, in some ways, weaker protection than a patent, but is there any evidence that innovation would be harmed without patent protection? Before the *In re Alappat* ruling by the U.S. Court of Appeals Federal Circuit in July 1994, software was effectively protected only by copyright; yet it would be difficult to claim that before 1994 the IT industry was short on innovation.

Copyright still provides protection from the sort of shady dealings that fair laws should prevent. If competitors find a way to copy code out of one program and paste it into

one of their own, or if pirates mass-produce copies of an installation CD, or if a disgruntled employee take the company's code base to a competitor, then those people could still be prosecuted under a copyright regime.

There are many considerations to molding copyright laws to fit software best, but in an industry with literally millions of independent inventors, a copyright is much less likely to stifle innovation than a patent or to impose the cost of hiring a standing army of lawyers. ∎

ABOUT THE AUTHOR
BEN KLEMENS has a Ph.D. in social sciences from California Institute of Technology, in Pasadena. He is currently a guest scholar at The Brookings Institution, Washington, D.C. His book *Math You Can't Use: Patents, Copyright, and Software* is to be published by the Brookings Institution Press.

THE ART OF DELEGATING
Assigning tasks to others is a key managerial skill BY CARL SELINGER

CAREERS

A colleague of mine spent a tough first year adjusting to being promoted to "acting manager." Recently, though, she told me how much she enjoyed managing her team of seven professionals. What had changed? She had learned how to delegate, and now believes that acquiring this one managerial skill was crucial for her career.

Another engineer I know, Ray, has 20 years' experience and a team that he supervises, but he wasn't keeping track of what his people were doing and wasn't deploying them effectively. As a result, Ray was being held back from a promo-

tion. His problem? He hadn't learned how to delegate work to his people.

Can delegating really make such a difference? Yes, it can. There comes a time in every engineer's career when he or she needs to start letting go and assigning tasks to subordinates or to contractors. Often, this is work that the engineer could still do, given the time, but now he or she should focus on the higher-value managerial skills needed to accomplish the work through the efforts of others. In short, being able to assign work is an important way to leverage your own effectiveness.

Delegating isn't easy, especially for en-

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RESHAT BDWOI   sun 29.12.2013
www.fllckr.com/photos/53971502@N04

در مسیر کارآفرینی دانش بنیان: "تشکیل تیم استارت آپی"

Backup Slides

The Complete Guide to Building Hardware Startup Teams: Part 1 (Founders + Culture)

Ben Einstein Aug 17, 2017 · 11 min read

- Building teams for hardware companies can be notably different in a few key ways:
  - Early stage hardware startups often need more people hours to ship a first product.
  - Hardware startups often involve multiple outside players (consultants, design firms, manufacturers, retailers, etc) and setting up these relationships strategically is tricky.
  - Differences in hardware and software management tend to drive more complex organizational structures.
  - Making small mistakes with team and product early on in a hardware company can cause disproportionate pain down the road (the long shadow effect).
  - hiring full-time employees