

Consultancy Project: Identification of Proxies

Improving Katapult's Anti Portfolio Performance by identification of Proxies

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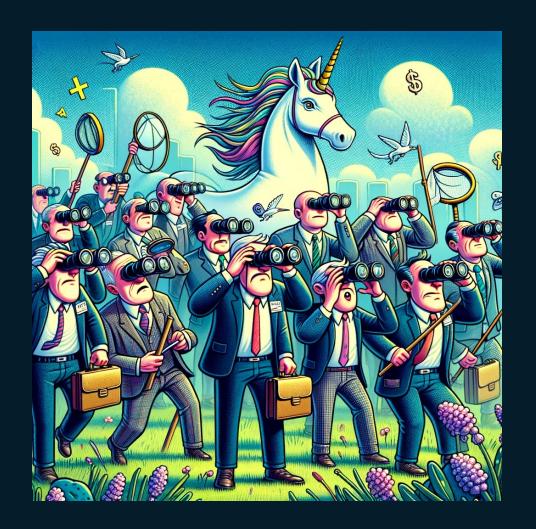
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Introduction to Problem

Katapult's Anti-Portfolio Program (APPE) includes companies that passed through its deal-flow but did not receive funding or chose not to proceed. Despite not meeting Katapult's initial investment criteria, these firms have achieved significant success. Katapult intends to study the factors behind this success to refine its screening process.

The issue arises from the fact that a significant proportion, up to 50%, of these companies are not present in major databases. For those that are listed, only about 30-40% provide useful valuation information, which increases investment risk substantially and may lead to more missed opportunities.

By identifying proxies that indicate growth beyond conventional financial metrics, we aim to better recognize successful startups that might otherwise be overlooked due to the limitations of available data.



Problem Statement

Context

Many Startups have limited or missing data in available databases.

Valuation of such companies is therefore a complex task and could lead to missed opportunities for successful investments. To counteract this we are identifying proxies based on available metrics that indirectly indicate company's growth and success during screening and due diligence.

Criteria for success

- Identified proxies must reliably predict potential for success in startups
- The proxies should scalable and implementable into Katapult's existing technological infrastructure

Stakeholders

- Investment Division
- IT department
- Data Analytics & Al Department
- Accelerator Division
- Board of Directors

Scope

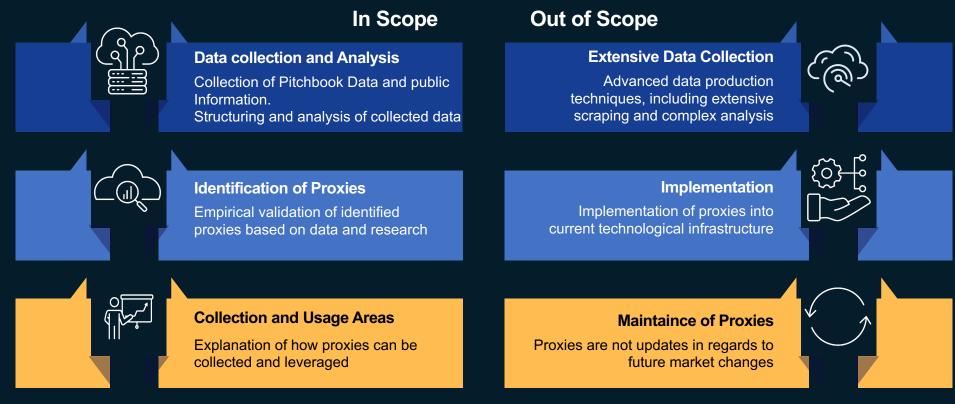
- Data collection and Analysis of company information
- Identification of Proxies
- Collection and usage areas for proxies

Constraints

- Data sources are limited to pitchbook database and public information
- Proxy development should fit into existing resource and technological framework

Scope and Boundaries

Defining Our Focus Area



Assumptions

- Katapult has a system in place to filter ESG/Impact Startups.
- Katapult can Incorporate 3rd Party services for data collection.
- Companies with similar characteristics with Antiportfolio sample is regarded as being part of Katapults antiportfolio. This is made in order to empirically justify identified proxies based on a sufficient sample size
- Katapult has GDPR measures in place to implement proxies.

Root Cause Analysis

Why Venture Capitalists Overlook Successful Startups?



Root Cause

The root cause is connected to an over reliance on traditional financial metrics, which are often inadequate or entirely absent from databases. This reliance poses a significant challenge in evaluating the potential of early-stage startups and increases investment risk substantially.

Overview of Problem

Question

How can we identify accurate and scalable proxies that indicates growth and success in early-stage startups to reduce reliance on traditional financial metrics in evaluating potential investments

Objective

The objective is to identify proxies that indicate startup success. We are to use public databases and information to gather data to empirically justify the identified proxies.

Opportunities

- Identify Undervalued Startups: Identify startups with high potential that might be undervalued by traditional metrics
- Advance Screening Process: Utilize additional data sources for better risk management and accurate results

Challenges

- Data availability and feasibility: Ensure that identified proxies rely on accessible and reliable data sources
- Adapting to market changes: Ensure the proxies remain relevant despite changing trends

Constraints

- Limited information: Data sources are limited to pitchbook database and public information
- Resource efficiency: Proxy development should fit into existing resource and technological framework

Criteria for success

- Accuracy in Prediction: Identified proxies must reliably predict potential for success in startups
- Practical: The proxies should scalable and implementable into Katapult's existing technological infrastructure.

Stakeholder Analysis

Strong interest for Primary and Secondary Stakeholders

Primary Stakeholders

Investment Division

Important to leverage suggested solution and implement it into current investment strategies and screening process

Data Analytics & Al

Crucial in extraction, analysis, validation and interpretation of proxy data.

IT Department

Provides insights into the feasibility and scalability of collection of Proxy data into existing technological infrastructure

Accelerator division:

Close interaction with startups can provide additional insights in how identified proxies could be improved.

Primary Stakeholders: Secondary Stakeholders Investment **Division** Legal and IT **Board of Directors** Compliance team Department **Data Analytics & Al** Accelerator Division **Regulatory Bodies** Marketing and Communication **Partners** Team Venture **HR** department Capitalist Community **General Public** High Low

Interest

Power

Data and limitations

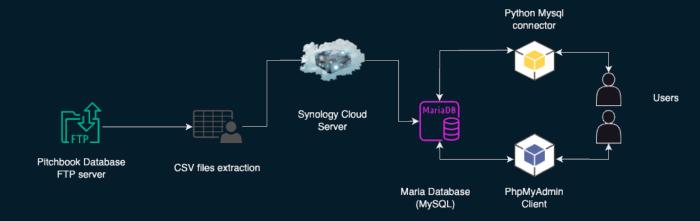
Lightweight process of reconstructing the Databases

Reconstruction of Pitchbook Database

- Our analysis is based on the snapshot of (Nov. 10th, 2023)
- The .csv files were extracted from the pitchbook database.
- The relational database was reconstructed after preprocessing the .csv files.

Reconstruction of Katapult's portfolio and anti-portfolio.

- We scraped Katapult's website to get their portfolio and created a subset of the pitchbook database.
- The Anti Portfolio was constructed with the assumption that Katapult
 has had potential contact with all companies listed in the PitchBook
 database. Based on this premise, we extracted the full list of
 companies currently in Katapult's portfolio from this pool, leading to
 the creation of the Anti Portfolio.



Pitchbook Database		Katapult's Portfolio		Assumed full Anti-portfolio	
PK	<u>CompanyID</u>	PK	<u>CompanyID</u>	PK	<u>CompanyID</u>
	Row 1		Row 1		Row 1
	Row 2		Row 2		Row 2
	Row 3	Te	Row 3 xt is not SVG - cannot display		Row 3

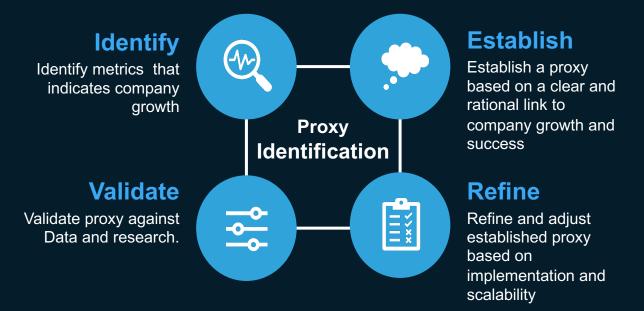
Process of identifying Proxies

Identifying Key Metrics

Defining Proxies

We define a proxy as an indirect measure used to infer the value of an attribute that is not directly observable or measurable.

Proxies allow for investors to estimate the future potential of startups based on observable metrics, when direct measures of performance are not available



Exploring Growth drivers: What Drives Companies? We Identify the main drivers of Growth



Network Insights: Leveraging Issue Tree Findings

The Network around a startup indicates level of growth and success

Network as a Predictor of Performance

The ability of **startups** to **extend beyond firm boundaries** for resources, talent, and partnerships. A strong network **correlates significantly with enhanced venture performance** (Mayer et al., 2013)

Network Stability and Resource Access is key

Startups often face the challenge of establishing stable relationships and extensive networks, leading to a reliance on less familiar connections and a disadvantage in resources compared to well-established companies.

Network Growth Potential

These categories aims to indicate early stage networks that could be undervalued by traditional financial valuation methods.

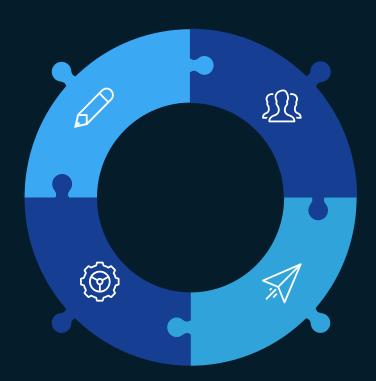
Environment

Business Environment Market

Financial Assets

Funding Rounds R&D & Patents

Four Areas investigated



Human Capital

Characteristics of Founders Company size

Social Assets

Online Presence Social Media

Geography as a Catalyst: Regional Impact on Startup Success

Analyzing Startup Growth and Regional Dynamics

Location plays a vital role in setting the stage for growth
 Historically U.S based startups have had a 30% increased
 likelihood of success compared to Europe based startups and
 tends to advance more often. (McKinsey & Company 2020)

Network Density and Success

Geographical areas with a high density of startups foster a collaborative network, enhancing knowledge exchange and network building.

Variable Regional Barriers

Different continents present unique challenges, including language diversity, legal systems, economic disparities, and market sizes, which can impact startup success trajectories.

Unicorn Startup Concentration

Silicon Valley have produced 251 companies valued at >1B\$ and which have not yet exited compared to the global average of 4 (Startupgenome, 2023).





Data collection
 Databases
 Industry Reports
 Government Records for new establishments



Automation
 Implement web scraping tools-where permitted
 Collection via API



 Data Enrichment possibilities
 Presence of accelerators/ incubators
 Company Age
 Operating Countries

Implementation

Industry Analysis: Assessing Performance and Growth Potential

Market Saturation, Revenue Potential, and Investment Trends for Startups

Degree of Competition within Industry

Analyzing the competitive landscape can reveal how saturated the market is and whether there is potential to capture market share.



Make baselines on existing competition within industries for evaluating startups in screening process.

Market Size

Proxies

Understanding the Total Addressable Market and trends helps understand the potential revenue that a startup could capture



Obtain data and market research reports, analyze penetration rate on new products or services based on past adoption rates, SoMe scraping

Access to Investments

Frequent investment in an industry signals investor confidence and often correlates with market activity and startup success.



Collect data on investment activity across industries, identify types of active investments, Outcomes of funding rounds

Industry Analysis: Assessing Performance and Growth Potential

Analysis of Startups Companies within industries from Pitchbook Database

Competitors:

IT and Healthcare sectors have the highest number of startups, suggesting a competitive landscape. Despite this, the substantial average age of companies in these industries points to enduring business models and a greater probability of long-term success

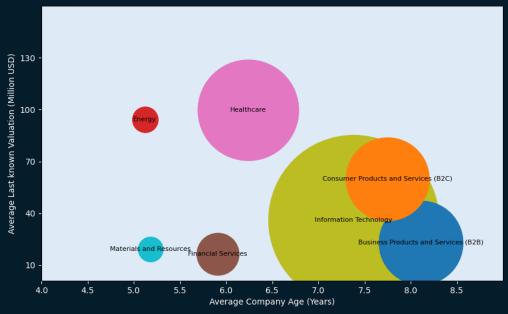
Market Size:

Limited presence and relatively young age of startups in industries like Energy, Materials & Resources, and Financial Services suggest dominance by large, established firms, posing significant survival challenges for newcomers or indicating a tendency for startups to be acquired by larger companies

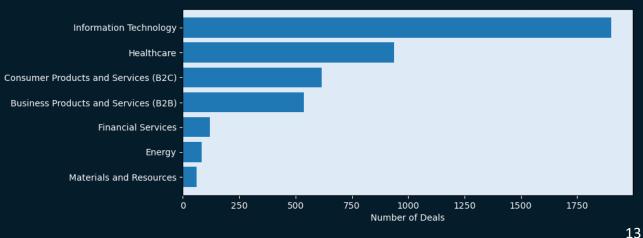
Access to Investments:

IT leads in attracting investment, as evidenced by its high number of deals and robust average company age, indicating a thriving startup ecosystem with a successful track records.

Industry Potential Based on Age, Competition and Valuation



Deal Numbers Across Industries



Data From Pitchbook is filtered for startups, sample size: 8195

Team Potential: Combining Proxies to Evaluate Founding Teams

Leveraging Educational and Professional Backgrounds to Predict Startup Strength

Education – University Rankings



Higher education levels, especially from top ranked universities, significantly correlate with startup innovation and leadership effectiveness (Martinez, 2019).

Employees – Team size



larger team size is associated with improved performance, According to a comprehensive review by Bernardo et al (2022), team attributes such as size is linked to startup success across various studies.

Employees – Previous work

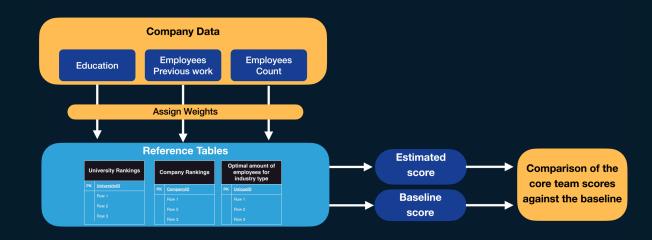


Founders with a background in large corporations or successful startups often have essential skills, a robust professional network, and a solid grasp of effective business strategies. To leverage this, data on founders work histories can be sourced from LinkedIn and similar platforms.

Implementation

We advise to establish a model that generates a given value based on the combination of these factors in order to evaluate the potential of the Founding Team.

- University Rankings
- Company Rankings
- Employees on Linkedin, Crunchbase, Pitchbook, Zoominfo



Online Success: The Role of Digital Presence

Leveraging Web Presence for Business Growth and Visibility

Active Website



An active website can be a proxy for potential for success. It significantly boosts brand awareness and visibility, offering a platform for the company to showcase its mission, values, and services.

Online Company Mentions



Increases a startup's visibility and credibility in the market. It reflects public interest and recognition, often correlating with product launches, funding rounds, or notable partnerships.

News | Number of mentions in News | Number of mentions in blog posts |

Positive Correlation

Pitchbook data shows a positive correlation between online mentions and financial metrics like Last known valuation and Revenue. Analysis is based on sample from one day. Analysis needs to be expanded to over time in order to get reliable results and identify rising companies gaining increased attention

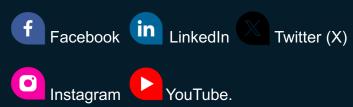
Social Media Influences: Assessing Corporate Social Performance

Streamlining Social Media Metrics for Enhanced Corporate Performance Evaluation

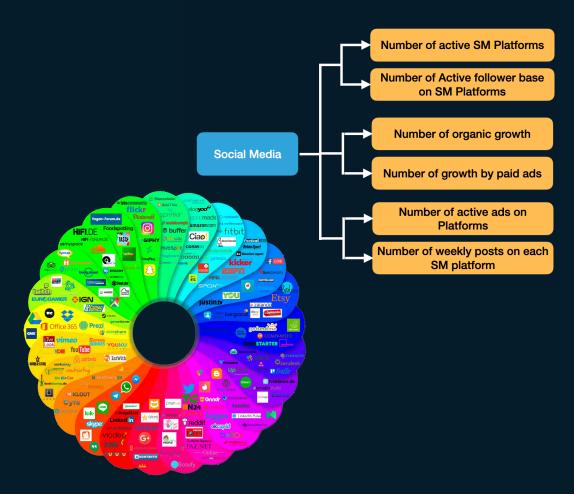
- Challenge of measuring a business social media growth
 Numerous platforms where businesses interacts with
 customers and entities makes it difficult to derive sensible results.
- Alleviate the chaos of platforms to capture Corporate SM performance

Strategical recommendation is to identify the most used platforms, taking into account the industry and the region.

 The social media platforms to focus on varies from industry but main ones are:



• KPIs to measure corporate social performance on social media.



Strategy for Data Collection: Implementation of Social Media performance Metrics

Examining alternative options to collect more public information on companies and trends.

Google Trends:

Google trends' API service gives access to the most trends by regions and could be used to get up to date historical data on trends.

Estimate seasonality, cyclical trends on the market, fads, and emerging trends.

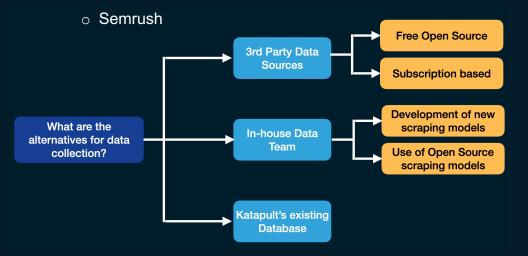
Web Scraping

With web scraping through API services one can not only have access to data on various platforms but also scraping websites.

OSINT (Open Source Intelligence)

OSINT is a process of collecting and analyzing publicly available information from various sources in order to get deeper understanding of a client or market.

- Possibilities on the best practices for social media data collection
- Identifying the target source, for data collection if available
- In house data automation team that is responsible for data scraping feature selection, structuring and data storing.
- Utilization of 3rd Party service provider
 - Facebook Ad Library



Funding rounds: Indicators of progress and investor confidence

The Significance of Funding Rounds

Indicator for investor confidence

Multiple funding rounds signify sustained investor belief in the vision and strategy of the startup. Research suggests that amount of funding is less important in the early funding rounds compared to the late funding rounds where the funding amount is associated with subsequent growth (Foster, 2001)

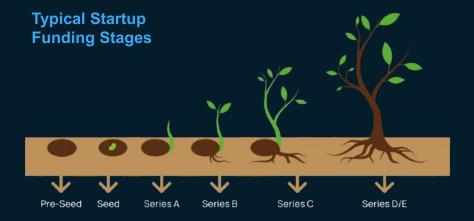
Industry context

Significance of funding rounds varies across industries. For instance, tech startups might require more rounds due to higher R&D costs.

Adjustments of this proxy based on industry is necessary

Implementation

Accessible Pitchbook data on funding rounds can serve as a scalable proxy for startup growth, with the assumption that consistent growth is typically required for securing additional funding.



R&D Spend: Forecasting Growth and Innovation Through Patents

Patenting as an Indicator Growth and Innovation

Patents as a performance Proxy



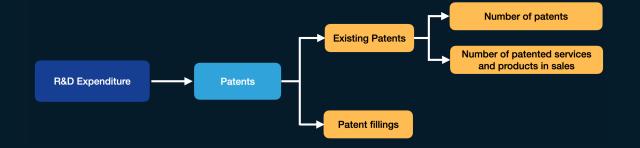
Research by Helmers, C., and Rogers, M. (2011) provides empirical evidence that patents can play a significant role in enhancing the performance of small and medium-sized enterprises (SMEs). This study suggests that SMEs with patents are likely to see improved financial outcomes compared to their non-patenting counterparts.

Patents as positive impact on entrepreneurship and company performance

- Patenting is seen as innovation's indicator
- Patentees have a higher average annual growth at the young ages of the firm

Patents as potential source of revenue

- Licensing fees and Royalty
- Sell of patenting rights
- Sell of Patented products



Navigating through patent data gathering possibilities.

- Unites States Patent and Trademark Office
- European Patent Office
- Google Patent Search



Conclusion

Proposed Course of Actions

Our Task to improve Katapult's Anti Portfolio Performance focused on four main areas: Environment, Human Capital, Financial Assets, and Social Assets. This approach aimed at overcoming the limitations of traditional financial metrics in evaluating startups. By integrating insights from these diverse areas, Katapult can make more strategic investment decisions and identify high-potential startups more effectively.

Key Recomendations

Stakeholder Engagement

Collaborate closely with primary stakeholders for effective implementation of suggested proxies.

Integration with Machine Learning Models

Incorporate suggested proxies into existing machine learning models to enhance predictive accuracy.

Maintenance

Ensure that proxies are continuously updated and refined to incorporate changes within markets and environments.



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