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# Multi-Dimensional Development Model for Early Stage Startups

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**Abstract**

*Startups are living organism, especially early stage startups operate under conditions of extreme uncertainty in search of right product-market fit. As the challenges and opportunities in each development stage are different, understanding of development stages will not only aid an entrepreneur in anticipating challenges and being prepared, but also assist an investor to set right expectation from the startup. Over its lifespan, a startup develops across interdependent dimensions like organization objective, customer, product, finance, business model, revenues, team and organization culture. Most of researchers have proposed models of startups by measuring growth over only one dimension. However, in current business landscape, none of the growth dimensions can be ignored. This paper proposes a multi-dimensional development model for early stage startups and explains attributes of each dimension for well-defined development stages. This paper also presents a comprehensive yet simple framework for quantitatively identifying development stage of a startup. While evaluating numerous startups across the globe, the framework also helps to identify unbalanced development of the startup for a particular dimension and proposes respective remedial measures.*

***Keywords:*** Development stages, Early stage startups, Entrepreneurship, Startup lifecycle stages, Unbalanced scaling.

## 1. Introduction - Why Development Stages

Study of development stages of an organization has been of deep interest for researchers, especially to understand the way companies evolve over different phases. This understanding aids in anticipating challenges and being prepared for requirements at different phases for the organization. Beyond this, it helps the entrepreneurs to evaluate various government policies for his business.

Beyond the usage of understanding of development stages to address fore-coming challenges for entrepreneurs, understanding of development stages of a startup is also quite beneficial for investors. Every investor sets an expectation from the startup based on the current stage of the organization, for example the investor will not expect a large portfolio of clients from an early stage startup, rather he will expect a MVP or product-market fit testing.

Understanding of development stages is also important to evaluate the need of right success factors of a startup because as a business moves from one stage to another, the importance

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(need and importance of the factors changes (Churchill and Lewis, 1983). For example, founder's own capability and level of motivation is highly important at early stages, while the focus shifts to founder's ability to delegate at later stages.

## 2. Prior Art

Researchers have developed a number of models over decades to define stages of corporate growth. Initially it started at the time of industrial era of manufacturing units, whereby McGuire (1963), while expanding the work of economic growth (Rostow, 1960), proposed five stages of economic development: traditional small company, planning for growth, take-off from existing conditions, drive to professional management and mass production.

Steinmetz (1969) focused beyond just economic growth and having management styles as pivot for development stages, he proposed that to survive, small businesses must move through four stages of growth. These stages include direct supervision (owner as manager), supervised supervision (owner as administrator), indirect control (owner to delegate) and divisional organization structure.

Christensen and Scott (1964) proposed three development stages of organizational complexity with evolving product-market relationships. These organizational complexities included single unit with no specialized functions, single unit with marketing and finance as specialized functions and independently running multiple operating units.

Five stage corporate evolution model, as proposed by Greiner (1972), takes a company from one phase to another by a revolution or crisis and each of such evolutionary phases is characterized by a particular managerial style to address a dominant management problem faced by the company in the phase.

The earlier development stage models were characterizing growth stages fairly in numbers of annual sales, these models critically ignored complexities associated with early stages of startups. Churchill and Lewis (1983) addressed this gap by a new five stage model, whereby each stage was characterized by five management factors: managerial style, organizational structure, extent of formal systems, major strategic goals, and the owner's involvement in the business. This comprehensive model of small business growth not only addressed the early stage challenges, but also proposed alternate paths an organization may take at different stages and possible outcomes of success and failure in each stage.

With sudden growth in startup ecosystem, commencing from early years of twenty first century, some of the researchers proposed startup development models aligned with product development stages – product conceptualization, product development, beta testing and product launch. However Blank (2006) suggested that the product development models were not correctly describing the startup development stages as these models focused more on execution than learning and more on product than customer, thus resulted in all execution aligned with product development cycle. Therefore Blank (2006) proposed customer development model, in contrary to product development models.

Focusing on understanding of customer needs, the customer development model of Blank (2006) included stages like customer discovery, customer validation, customer creation and customer building.

Marmer (2012) proposed "Marmer development stages", adapting the customer development model of Blank (2006) and reinforced it with hard data. In addition, the Marmer stages are product centric compared to Blank (2006) being company centric. Marmer stages also defined development stages for late stage startups as well – including sustenance and renewal stages.

Sawhney (2014) gave a different perspective to startup development keeping a focus on scale as opposed to start up; resulting in a five facet growth phase of a startup which defines a transformation model for a startup from a growing organization to a grown-up organization.

## 3. Why New Model Required

Startups are living and developing organism and these develop across various interdependent dimensions – some of them are internal to the organization (like team, organization culture, etc.), while others are external or peripheral to the organization (like customers, revenues, funding etc.). Therefore the study of development stages of startups should certainly consider all dimensions; however most of researchers have proposed development stages models of startups which are governed by measuring growth over single dimension. Churchill and Lewis (1983) proposed a multi-dimensional development stage model of startup, but that model was also restricted to dimensions only internal to the organization, and it was silent about dimensions peripheral or external (customers and revenues) to a startup. Especially in the current competitive business environment and complex economic landscape, none of the growth dimension of a startup can be ignored.

More so, in the recent times of startup growth, investors have gone beyond just providing finances. They help startups leverage their network as well as provide multi-dimensional mentorship. Therefore evaluating the startup development stages from multi-dimensional perspective becomes more important and helps the investors to identify right dimensions to focus on.

In addition, while talking about multi-dimensional stages for a comprehensive model, it is important to maintain the simplicity of the model. Thus a new model is being proposed. While early stage startups are designed to search for product-market fit under conditions of extreme uncertainty; late stage startups are designed to search for a repeatable and scalable business model and then scale into large companies designed to execute under conditions of high certainty (The Startup Genome Report, 2012). Considering the difference between landscapes of operational environment of early and late stage startups, it's important to look into development stages of early stage startups completely in isolation. With the surge in startup economy and ecosystem thereby, the survival of early stage startups and growth thereof, become absolute critical for this ecosystem to survive and therefore this paper focuses only for the study of development stages of early stage startups.

## 4. Proposed Stages

This paper proposes study of development stages across various dimensions categorized as the ones which are internal to the organization or the others which are peripheral or external to the organization. These dimensions include organization objective, customer, product, finance, business model, revenues, team and organization culture. While considering only early stage startups, this paper proposes four development stages of the organization where by the organization grows across the dimensions. This paper explains the attributes of each dimension in each development stage, for an evaluator to characterize the startup in either of the development stage.

### *4.1 Stage #1 - Discovery*

#### *Objective*

- *Discover Value Proposition*: Startup is focused on validating whether it is solving a meaningful problem and whether anybody would hypothetically be interested in solution of the said problem (Do people need it? Does the market understand it?).

- *Discover Competitive Landscape*: Has anybody else tried to solve a similar problem and what solution was proposed earlier. Did earlier instance succeed or fail? How does it differentiate its problem definition and solution from earlier instances?
- *Discover Customers:* Going and talking to prospective customers and asking whether they feel the same problem, is it a problem worth addressing and identifying how are they addressing the problem now (observe than just listen).
- *Discover Solution*: Going to the drawing board to check if earlier prototype (MVP) can solve the problem better.
- *Discover Growth*: Can it grow?

***Customer***

- Many prospective customer interviews are being conducted,
- Startup should be putting initial feelers out into the community and connecting with people.

***Product***

- Value proposition is found,
- It is working on developing a minimum viable product (MVP) that will enable surveying the market and getting a sense of the project's acceptance.

***Finance***

- Founding team may join an accelerator or incubator,
- No formal funding, small funds through self-funding or from Friends and Family,
- First set of mentors & advisors come on board.

***Business Model***

- Only outline of Business plan is prepared

***Revenues***

- No revenue

***Team***

- Founding team is formed.
- One or more founder member work for no salary. Realistically, founders don't need to quit the job at this stage.
- No formal employees hired.

***Organization Culture***

- No organization culture exists.

### *4.2 Stage #2 - Validation*

***Objective***

- Startup validates Product – Market fit: whether people are interested in its solution through the exchange of money or attention.

***Product***

- Solution moves from MVP (being hypothetical solutions) to a deployable solution with refined core features.

- It takes action to protect intellectual property rights associated with the solution, if any. (Search and file patents)
- Implements basic metrics and analytics to monitor customer behavior.

***Customer***

- First paying customers are on board.
- It is adding initial customer growth path.

***Finance***

- It starts with small funding from friends and family, along with options of crowdfunding and seed funding.
- It may continue with deep incubators

***Business Model***

- Finalized comprehensive business plan is ready.
- A legal entity and business name is incorporated

***Revenues***

- Minimal initial revenues from first paying customers.
- This revenue is just to validate the business model.

***Team***

- Founders leave the jobs and join the startup on full time.
- First key employees are hired.

***Organization Culture***

- Casual and informal.
- Do whatever it takes to deliver.

### *4.3 Stage #3 – Efficiency / Refine*

***Objective***

- Startup focuses on to refine and be efficient in - What and how you do,
- Startup focuses on to refine and be efficient in - Processes to head for a lean organization (cut the fat out of it and add value),
- Startup focuses on to refine and be efficient in – Business model and customer acquisition model,
- Startup focuses on being ready to scale.
- It analyzes characteristics and variables of everything around the startup (market, clients, etc.) to refine the business model that adjusts best to the environment. This analysis is done based on various market studies, advice from experts and investors.

***Product***

- Value proposition is refined
- Products / Services are matured.

***Customers***

- It has sufficient number of paying customers to prove the business model (but not as a market leader)
- It has established repeatable customer acquisition process

***Finance***

- It becomes Investor backed startup that run through Series A / Series B – formal mid-large scale funding

***Business Model***

´ It is ready to scale the business to be a market leader

- Large market opportunity is validated

***Revenues***

- It has established & stable revenues and these revenues enough to validate the business model and confirms the scalability of the same.

***Team***

- Founder still leads the team
- Team size may be around 20 - 200 employees

***Organization Culture***

- Organization culture transforms from Informal to Formal
- With this size of organization (especially in terms of people count), the casual, and informal “do what it takes to deliver” culture, becomes chaotic and in-effective. The Startup starts defining roper culture, training, product management, processes, and procedures (i.e. writing the HR manual, sales comp plan, expense reports, branding guidelines, etc.).

### *4.4 Stage #4 – Scale / Grow*

***Objective***

- Aggressive growth – Having established a product and market fit, validated business model and established revenues, Startup must be focusing on growth through aggressive customer acquisition.
- It is transforming from Opportunistic to Strategist, Projects to Products, Ownership to Partnership, People to Process, and Relationship to Brands (Sawhney, 2014).
- It is under transition from an entrepreneurial high speed and risk style, to one of planning, management and fine-tuning of operations.

***Customer***

- Massive Customer Acquisition is taking place - quickly, aggressively, efficiently and smartly.

***Product***

- Optional - Complementary product / modules are added - through self-effort or partnership

***Finance***

- It offers low risk investment option to investors, having delivered confidence that on investment of $X in resources / product / marketing / sales will generate $Y revenues.

- It is exploring options for growth like an IPO, being acquired by large organization OR acquiring small competitive companies.

***Business Model***

- Business model is expanded to address large opportunity - typically beyond local geographies.
- Internationalization is being evaluated as the way to grow.

***Revenues***

- Growing Revenues

***Team***

- First Executive Hires (Other than founders) - Professional management is on board to manage transformation.

***Organization Culture***

- Establishment of departments and process implementation is in progress.
- Having repeatable processes in place, Key performance indicators for processes are implemented.
- Focusing on cost optimization – i.e. growing in sustainable manner.

## 5. Identify the Development Stage of a Startup

A startup, as a continuously developing organism, develops along all interdependent dimensions as proposed above. And, therefore the progress of the startup is measured based on the development stage across various dimensions. This paper presents a tool for identifying development stage of a startup, through a multi-dimensional evaluation process.

a. A likert scale is defined for each of the proposed dimensions, as in Table 1, whereby each value of likert scale corresponds to one of the four development stages.

b. A startup under evaluation is scored over the proposed likert scale for each dimension.

c. An average score is calculated through the scores of all dimensions.

d. A balanced development across all dimensions (same score for all dimensions), maximizes startup's speed of growth, whereas an unbalanced development of one or more dimensions compared to that of other dimension leads to serious challenges. However on a practical case, a number of startups can be found having unbalanced development across dimensions; however the amount of deviation reflects the unbalanced nature of the startup across specific dimension. Therefore the values of average score reflects the development stage of the organization, like

    a. Average score between 1.0 and 1.5 : Discovery Stage

    b. Average score between 1.5 and 2.5 : Validation Stage

    c. Average score between 2.5 and 3.5 : Refinement Stage

    d. Average score between 3.5 and 4.0 : Growth Stage

**Table 1: Development Stages**

| Dimension | Development Stages | | | |
|---|---|---|---|---|
| | **Discovery (1)** | **Validation (2)** | **Refinement (3)** | **Growth (4)** |
| **Objective** | Problem definition and customer discovery (1) | People interested in the solution as exchange of money or attention (2) | Refined – business model, customer acquisition model and processes (3) | Transforming from Opportunistic to Strategist, People to Process, and Relationship to Brands. Transition from high speed and risk style, to well managed operations. (4) |
| **Product** | Defined value proposition. MVP for better prospecting. (1) | First level of deployable solution (2) | Refined Value Proposition, Product Matured (3) | Complementary product / modules added (4) |
| **Customer** | No real customer; Discovery through interviews with prospective customers. (1) | First Paying Customer (2) | Sufficient number of paying customers and has established repeatable customer acquisition process (3) | Aggressive customer acquisition (4) |
| **Finance** | No formal funding (1) | Formal funding started through crowdfunding or seed funding (2) | Mid - Large scale funding through Series A / B Funding (3) | Low risk investment option for investors for defined ROI (4) |
| **Business Model** | Business plan outline only (1) | Business plan finalization (2) | Large market opportunity identified with Proven business model (3) | Expanded to address large opportunity-going beyond local geographies (4) |
| **Revenues** | No revenues (1) | Minimal initial revenues (2) | Enough revenues to validate the business model-established revenues (3) | Growing Revenues (4) |
| **Team** | Only founding team; No employees (1) | Founders on full time; Few key employees (2) | Founder still leads the team; Team size from 20- 200 employees (3) | First Executive Hires for Professional management (4) |
| **Organization Culture** | Doesn't exist (1) | Casual approach- "Do what it takes to deliver" (2) | Refine from informal to formal organization culture and processes (3) | Established departments and processes (4) |

Higher values of the score for a dimension, than the average score reflects pre-mature scaling of the organization for the dimension. In the contrary, it shows less-maturity of the dimension.

## 6. Case Studies

During the study, a number of early stage startups across the globe have been evaluated for their development stages. This evaluation exercise has been conducted through primary research done by obtaining an expert opinion from people associated with early stage startups across the globe (India, China and UK). This expert opinion is collected through an online questionnaire, followed by detailed discussion on the subject matter. Responses received are summarized as in Table 2 (startup name and specific details are kept anonymous) and following observations are made

a. None of the startup under observation demonstrated a perfect development across all dimensions.

b. Difference in scores of each dimension as compared to average score reflects unbalanced development for the dimension.

c. Standard Deviation value also reflects overall unbalanced development for the startup.

**Table 2: Response Summary**

| S. No. | Industry | Location (City) | Average Score | Dev. Stage | Std Deviation |
|---|---|---|---|---|---|
| 1. | Food Tech | Tier 3, India | 2.00 | Validation | 0.71 |
| 2. | IT Services | Tier 3, India | 1.25 | Discovery | 0.43 |
| 3. | Real Estate Tech | Tier 2, India | 2.25 | Validation | 0.83 |
| 4. | Device Hardware | Tier 1, China | 2.25 | Validation | 0.66 |
| 5. | Travel Tech | Tier 1, India | 2.63 | Refinement | 0.48 |
| 6. | Travel Tech | Tier 1, India | 2.25 | Validation | 0.43 |
| 7. | Training | Tier 1, India | 1.75 | Validation | 0.66 |
| 8. | IT Services | Tier 2, India | 2.75 | Refinement | 0.83 |
| 9. | Payments Tech | Tier 1, UK | 3.38 | Refinement | 0.70 |

## 7. Conclusions

In conclusion, this paper proposes four development stages for an early stage startup, expressing the growth of the startup as predefined attribute values of all dimensions. Also the proposed multi-dimensional development stages model helps identify whether an organization is leading to an unbalanced development across a dimension.

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