Managing Startup Suppliers

CIPS-Event "Supply Chain Startups: Reality Check"
Zurich, October 29, 2019

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Chair of Logistics Management
Swiss Federal Institute of Technology Zurich
Agenda

1. Introduction to ETH Zurich and our Research Group

2. Interaction between Corporates and external Startups
   - Why and how

3. Startups in the Supply Chain and as Suppliers
   - Journey of our Research on Startups in the Supply Chain
   - Managing Startup Suppliers
   - Startup Programs
   - Implications for Purchasing Managers
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Areas of Expertise and Research

- Entrepreneurship
- Sustainability
- Strategy
- Networks
- Relationships
- Innovation
- Entrepreneurship
- Digitalization
- Sustainability
- Humanitarian

Topics

Supply Market
Logistics Market
Product Market

Markets

Suppliers
Logistics Service Providers
Customers

Actors

Purchasing and Supply Management
Logistics and Transportation Management
Business Marketing Management

Activities

Supply Chain Management
Current Research Topics taken up in Projects

Examples

Understanding …

- Sustainability and Ethics
- Startup Firms
- Digitalization (e.g., 3D printing, blockchain)
- Humanitarian Logistics and Operations

… in Supply Chains
Just launched – The *HumOSCM Lab*

Research

The Humanitarian Operations and Supply Chain Management Lab (HumOSCM Lab) at the Chair of Logistics Management engages in and disseminates research that helps to contribute to the knowledge on operations and supply chain management theory and to support humanitarian organizations to enhance their supply chain practices and capabilities.
Impact of our work: Research Output over Time
Research output and recognition increasing over time

Number of citations (Google Scholar)

Number of citations (Web of Science)

(27.10.2019: Σ 10.686, h=51)

(27.10.2019: Σ 3.757, h=33)

Sources: Web of Science Citation Report; Databases considered: SCI-Expanded and SSCI; timespan – 27.10.2019
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Why collaborate with Startups (1)?
Startups as Sources of Innovation

Trend I: **Disruptive and faster changing technologies**

**Adjustment and replacement of traditional technologies**
- Alternative Drives
  - ⋯
- Health technologies
  - Prosthetics
  - Blood pressure monitoring
  - ⋯
- Environmental technologies
  - Power to gas
  - Energy storage
  - ⋯

**Digitalization**
- Big Data Analytics
- Automation und Robotics
- Artificial Intelligence
- Tracking und Tracing Technology:
  - Blockchain, Low-Cost-Sensors, IoT, 5G

Source: Wagner (2019); Olsen & Tomlin (2019)
Why collaborate with Startups (2)?
Startups as Sources of Innovation

Trend II: Changing Ecosystems

- Increasing product variety and customization
- Increasing product complexity
- Shortened product lifecycles
- Platform economy and sharing economy
- Demand for sustainable value chains and products
- Entrance of new businesses/competitors
- …

Increased Innovation Pressure

- Open Innovation (External sources to complement internal innovation activities)
- Startups as sources of external innovation
Interaction of Corporates & external Startups

Corporate Incubator
- Startup Developing

Corporate Accelerator
- Startup Developing & Pilot Project

Corporate Venture Capital
- Investment in Startups

Startup Supplier/Venture Client
- Integrating Startup in Supply Base or Co-Development

M&A
- Acquiring the Startup and its technology

Startup Events & Competitions
- Network and Ecosystem Building

Source: Fink (2018)
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Journey of our Research on Startups in the Supply Chain

2015
- Leveraging Supply Chains for New Venture Growth
  Ingmar Zanger
  (Case Study)
- New Kids on the Block: Selecting New Ventures as Suppliers
  Zaremba, Bode, & Wagner
  (Survey)
- Strategic and operational determinants of relationship outcomes with new venture suppliers
  Zaremba, Bode, & Wagner
  (Survey)

2016
- Selecting Innovative and Startup Supplier
  Constantin Brachtendorf
  (Experiments)

2017
- Managing Startup Suppliers
  Wagner, Kurpjuweit, & Choi
  (Case Study)
- Toward a better understanding of corporate accelerator models
  Moschner, Fink, Kurpjuweit, Wagner, & Herstatt
  (Case Study)
- Collaboration with TU Hamburg

2018
- New Venture Partnering Capability
  Zaremba, Bode, & Wagner
  (Case Study)

2019
- Startup Supplier Programs
  Kurpjuweit & Wagner
  (Case Study)
- Logistics Startups
  Kurpjuweit, Klöckner, Seeßle, & Wagner
  (Case Study)
- Startup Supplier’s IP Protection
  Fink & Wagner
  (Case Study)
- Leveraging Startup’s Supply Chains
  Feng & Wagner
- Logistics Accelerator
  Fink, Räder, & Wagner
  (Case Study)

2019
- A Typology of Established Firms’ Supplier Selection Approaches
  Kurpjuweit & Wagner
  (Case Study)

Originated at ETH Zurich’s Chair of Logistics Management

Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich
What do we consider as a Startup Supplier?

- Younger than 8 years (Song et al., 2008)
- Possesses a **self-developed product** or service which might improve the established firm's core business
- Aims to have a (or has an existing) **B2B sourcing relationship**
- Focus on **creating innovation**, growth, and a scalable business model
- **More than one employee** or founder, i.e. we do not include single entrepreneurs or inventors
- **Independent** from the buyer

Source: Fink & Wagner (2019)
A Startup Supplier (1)

Example

A Startup Supplier (2)

Example

Source: https://aito-touch.com/
Not a new phenomenon:
Innovation and Productivity Suppliers at Siemens

1. "Start ups, spin offs"
   - Technologies/ideas
   - Innovation suppliers

2. Solutions
   - Innovation suppliers
   - Productivity suppliers

3. Products
   - Productivity suppliers
   - "Established firms"

Example

## Differences between established Suppliers and Startup Suppliers

<table>
<thead>
<tr>
<th></th>
<th>Established Suppliers</th>
<th>Startup Suppliers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resources</strong></td>
<td>▪ Affluent in resources</td>
<td>▪ Short of resources</td>
</tr>
<tr>
<td><strong>Relationship with Buyer</strong></td>
<td>▪ One of many</td>
<td>▪ Matter of survival</td>
</tr>
<tr>
<td><strong>Decision Making</strong></td>
<td>▪ Slow, decentralized</td>
<td>▪ Speedy, flexible</td>
</tr>
<tr>
<td><strong>Organization</strong></td>
<td>▪ High degree of formalization</td>
<td>▪ Low degree of formalization</td>
</tr>
<tr>
<td><strong>Communication</strong></td>
<td>▪ More levels, barely horizontal, infrequent</td>
<td>▪ Fewer levels, more horizontal, frequent</td>
</tr>
<tr>
<td><strong>Legitimacy</strong></td>
<td>▪ More</td>
<td>▪ Less</td>
</tr>
<tr>
<td><strong>History/Track Record</strong></td>
<td>▪ Sufficient</td>
<td>▪ Scarce</td>
</tr>
<tr>
<td><strong>Routines</strong></td>
<td>▪ Routines exist</td>
<td>▪ Lack productive routines</td>
</tr>
</tbody>
</table>

### Need to adapt purchasing processes and relationship management

Source: Wagner et al. (2017)
Competitive Priorities: Firms seek from Startup Suppliers Flexibility and Innovation

Goals: Start-up vs. other suppliers

- **Flexibility**
  - Less emphasized: 8%
  - Equally emphasized: 17%
  - More emphasized: 75%

- **Innovation**
  - Less emphasized: 9%
  - Equally emphasized: 16%
  - More emphasized: 75%

- **Cost (reduction)**
  - Less emphasized: 14%
  - Equally emphasized: 25%
  - More emphasized: 61%

- **Delivery**
  - Less emphasized: 12%
  - Equally emphasized: 37%
  - More emphasized: 51%

- **Quality**
  - Less emphasized: 13%
  - Equally emphasized: 47%
  - More emphasized: 40%

Firms expect more from startup suppliers in terms of flexibility and innovation compared to established suppliers.

Product Type for which Startup was selected as Supplier

Importance for firm
- Very low/low: 14%
- Medium: 19%
- High/very high: 68%

Criticality for production
- Very low/low: 36%
- Medium: 20%
- High/very high: 44%

Profit impact
- Very low/low: 36%
- Medium: 23%
- High/very high: 41%

Innovativeness
- Very low/low: 26%
- Medium: 22%
- High/very high: 52%

Complexity
- Very low/low: 30%
- Medium: 21%
- High/very high: 49%

Technical requirements
- Very low/low: 32%
- Medium: 27%
- High/very high: 41%

Startups are selected as suppliers for important products.

Startups are selected as suppliers for innovative and complex products.

Characteristics of successful Startup Suppliers

The start-up-supplier...

- did signal great interest for the supply mandate
- constantly acted openly ("played with open hands")
- constantly communicated with us in a transparent manner
- had (at least) one founder who possessed relevant experience in...
- complied with the established standards and norms in our industry
- was a good fit to our corporate culture
- had employees that left a good impression in personal meetings
- provided requested information in a timely manner
- had employees who possessed relevant experience in the...
- already possessed the essential (most important) technological...
- already possessed the essential (most important) administrative...
- committed a considerable portion of resources in the course of the...
- had a very professional corporate design or similar
- was able to provide comprehensible, documented relevant proof...
- had an established firm as customer
- has been successfully active in the market/industry for a...
- had an established firm as supplier
- had good relationships to a partner who provided financial support
- was explicitly recommended by trusted business partner of ours

There is a hierarchy among startup characteristics that favors being selected as supplier

n=96 (start-ups selected)

Capabilities to manage Startup Suppliers (1)

New Venture Partnering Capabilities

**Evaluation and Selection**
- Assessment agility
- Criteria fulfillment flexibility

**Development**
- Specificity of development effort
- Timeliness of development effort

**Communication**
Quality of communication in terms of frequency, content related quality, and immediacy

**Governance**
Buying firm's choice of governance mechanisms that promote cooperation and collaboration

Source: Zaremba, Bode & Wagner (2017)
Capabilities to manage Startup Suppliers (2)
Buying Firm Archetypes: Startup Selection

1. Skeptical Buyers
   - Do not adjust their supplier selection process to startups
   - Completely unstructured evaluation process

2. Realistic Adapters
   - Do partially adjust their supplier selection process to startups
   - Somewhat structured evaluation process
   - Relaxed standard criteria

3. Systematic Selectors
   - Do fully adjust their supplier selection process to startups
   - Structured evaluation process
   - Predefined startup-specific evaluation criteria

Source: Kurpuweit, Wagner & Choi (2019)
"Startups need three things to grow: capital, coaching, and clients. Private VCs and other professional investors can provide the first two. But only large corporates can offer the last one."

(Gimmy et al., 2017)

- Startups move into an official supplier status
- Focus on mid-/later stage startups, e.g. alumni of renowned accelerator programs or existent VC funding
- No equity or exclusivity taken
- Instead instant purchase orders for Proof-of-Concept
- Simplified access to the business units
Capabilities to manage Startup Suppliers (4)

Startup Supplier Stage Gate Process

- **Stage 1**: Identification
  - Gate 1: (Preselection)
  - Alternative routes:
    - Pilot in another business unit
    - Acquisition
    - Asset purchase
    - Licensing
    - Joint venture
    - CVC
    - Collaboration with tier-1 supplier
    - …

- **Stage 2**: Internal matchmaking
  - Gate 2: (Market fit)

- **Stage 3**: Pilot project
  - Gate 3: (Pilot evaluation)

- **Stage 4**: Transfer into the supply base
  - Gate 4: (Supply base)

Systematic Selectors

Source: Kurpjuweit and Wagner (2019)
Implications for Purchasing Managers (1)

Implications – Step 1: What are you aiming for?

- Develop a **holistic strategy** for your startup engagement and make sure to synchronize all activities
- Specify the **types of collaboration** (M&A, Accelerator, Startup Supplier etc.) that fits best to your company's overall strategy
Implications for Purchasing Managers (2)

Implications – Step 2: Buyer Supplier Relationship

- **Integrate procurement** as early as possible in the startup management process
- Improve your **knowledge about startups** and their requirements
- **Adapt, simplify and speed up** your processes, contracts, and tools in order to be startup-friendly
- Create **New Venture Partnering Capabilities.**
- Benefit from **experts in the ecosystem** with respect to startup financing (VC) and startup developing (independent accelerators)