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Grasshoppers Distribution

Lessons Learned and Lasting Legacy

Lilian Brislen, Timothy Woods, Lee Meyer, and Nathan Routt

UKAg RESEARCH University of Kentucky • Lexington, Kentucky 40546

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Executive Summary

Overview of Grasshoppers

Grasshoppers Distribution LLC was a food hub in Louisville, Kentucky, that was established in 2006 by four Kentucky farmers seeking to connect regional products with local markets, which grew to nearly one million dollars in annual sales of local farm products before closing its doors in December of 2013. Grasshoppers underwent many transitions in its lifetime, including five general managers, several changes in the business model, and a switch from consensus-based farmer/owner leadership to an investor-led board of directors. Over the course of its operations, Grasshoppers worked with more than 70 different food producers and directed more than 2.25 million dollars into the hands of local farmers and food entrepreneurs. Substantial public funding from state, national, and federal sources supplemented additional funds from private investors in an effort to make Grasshoppers work.

Grasshoppers Distribution as an enterprise was a true pioneer in seeking how to best promote and provide regionally produced foods in Kentucky. They opened their doors just before the onset of the Great Recession and worked to adapt to new challenges and opportunities as public interest in local food expanded at the same time the new and existing food businesses sought to take advantage of the same growing but nascent market opportunity. As such, Grasshoppers forged new paths in discovering the unique opportunities and challenges to regional food-system development in Kentucky.

This report examines the story behind the evolution of Grasshoppers and points to key challenges the enterprise faced as well as its lasting impact on the Kentucky agriculture and food sector. It is our hope, and the hope of those former Grasshoppers stakeholders who participated in this study, that lessons shared here will support the efforts of future regional food-system development projects in Kentucky and farther afield.

Summary of Challenges

Following the history of Grasshoppers Distribution, annual overhauls of its business model and the almost as frequent change of top management were central challenges to developing expertise and efficiencies. At the start of operations, there were few ready examples of successful food hubs to emulate, and a general state of undercapitalization restricted up-front investments in adequate infrastructure and expert personnel. This situation was compounded by the absence of a plan based on sound knowledge of existing supply and demand; reasonable benchmarks for growth and evaluative metrics; a lack of capacity (technical knowledge and built infrastructure) both within the organization and the regional food system as a whole; and an inclination to place the social mission ahead of the best interests of the enterprise itself. Furthermore, these factors were interlinked and served to exacerbate each other.

Retaining and Implementing Expertise

Finding and retaining qualified staff in key leadership roles was a significant challenge faced by Grasshoppers. This challenge was caused primarily by a lack of adequate working capital to invest in such expertise and the strain placed on a series of managers tasked with developing the enterprise. The complex business model that Grasshoppers worked to develop required a high level of expertise in a number of specialized fields for tasks such as setting up protocols and logistic systems, inventory and warehouse management for highly perishable products, and day-to-day operations of a subscription-delivery service. Though the core of the business model was wholesale produce aggregation and distribution, at no point in its existence did Grasshoppers have a member of the management team or board of directors with a specific background in that type of business. High levels of staff turnover combined with frequent changes to the business model and underdeveloped supply-side capacity resulted in management and quality control issues that affected customer relations and overall performance of the enterprise.

> ***"When Grasshoppers was closing down, it seemed like there were a lot of farmers kind of where we were… developing their business, and who really wanted to get into moving a larger volume of product. Grasshoppers was a stepping stone for that."***
>
> ***–Former Supplier***

Rather than a learning-by-doing approach to developing the business, an early investment in a staff person or consultant with intimate knowledge of fresh-produce wholesaling and supply-chain management could have been a more efficient use of financial resources for investors and mitigated the burn-out of staff and management. However, it is important to acknowledge that acquiring expert staff or services comes with significant cost and may present an early and significant fundraising hurdle for new enterprises.

Clear Plans and Evaluative Metrics

While the initial values-based mission of Grasshoppers was clear in the abstract (to help small farmers and assist underserved consumers in accessing local food products), developing and implementing a specific plan for how that mission would be achieved was challenging. Frequent, almost annual, changes to the business in response to capital shortfalls and a changing market environment posed a serious obstacle to developing efficiencies and expertise within the enterprise. Without a thorough understanding of the conditions of available supply, the particular needs and scope of existing demand, and the logistic and built infrastructure required to connect those two, a significant portion of Grasshoppers' time and capital was expended in changing the business model to address challenges as they arose.

These issues were compounded by the logistic complexity of housing several different types of business lines without the infrastructure or expertise to evaluate and achieve efficiencies within them. Grasshoppers was at various points and often concurrently operating a subscription produce box service, an online specialty grocery delivery service, a trucking service, wholesale aggregation and distribution, value-added food manufacturing, and a production consulting service for farmers. In essence, Grasshoppers never knew exactly what business they were in or how to evaluate the specific activities they were engaged in, and thus weren't able to make strategic decisions based on a unified vision.

"To ask the question and answer the question, 'What is the role of the food hub?' is a critical piece that was never done… I think [the owner/investors'] instinct told them this was needed but they didn't know what problem they were trying to solve exactly."
–Former Employee

Mission vs Bottom Line

A consistent challenge across the life of Grasshoppers was how to translate the abstract overarching goal of helping small farmers into the concrete, day-to-day reality of running a wholesale food-distribution enterprise. For the leadership of Grasshoppers, price paid to farmers was a key mechanism for realizing producer development. Many producers we spoke with recognized that the prices Grasshoppers paid, while generous, were too high and seemed at odds with a business model dependent on tight margins. Additionally, Grasshoppers' leadership adopted a policy of avoiding competition with farmers on any front within the local food market. For example, while the practice of targeting customers outside of the traditional local food market, as well as encouraging customers to join farm-based CSAs, may have seemed ideologically important, it went against the needs of the enterprise.

Double Duty of Food System Development

Developing a high quality, diversified wholesale horticulture or custom-meat enterprise does not happen overnight and demands a highly specialized set of skills, knowledge, and infrastructure (both on the farm and off). While the enterprise was able to secure public and private funds to pay for infrastructure and operations, technical assistance was late in coming from key partners for the suppliers and customers they served. In a very real sense, the staff and owners of Grasshoppers had to build the food-system foundations on which their business was expected to stand—the necessary preconditions to support such an enterprise were simply not there.

As a values-based enterprise, Grasshoppers' mission included a broad set of social and environmental goals that motivated managers and staff to go the extra mile in providing technical assistance and general support for producers. For example, Grasshoppers' management recognized a deficiency in farmers' capacity for wholesale production and post-harvest handling, which in turn impacted Grasshoppers' ability to procure quality products appropriately packed and ready for market. To address this issue, and also as a public service, the staff of Grasshoppers conducted farm walks, assisted with production planning, and facilitated technical assistance around food safety, post-harvest handling, wholesale production, and accessing government programs. The variability of growers in size, marketing skills and production expertise required a very extensive and costly level of support. The competing demands of these goals on staff and management's time diluted the effort on the core business needs of the firm.

Summary of Financial Analysis

- Growth in debt and even involvement in grant programs changed the financial control of the firm. Producers had less and less opportunity to direct the entity as continued losses required them to have to seek outside funding to cover operating costs.
- The solvency position steadily eroded. This situation placed Grasshoppers in a difficult position as they sought to pursue new growth and market opportunities.
- Ordinary net income—revenue from the sales of products less cash expenses—were always negative. This situation necessarily led to erosion of equity in the firm and the eventual closure of the business.
- Outside grant funding and creative equity financing were not sufficient to cover the ordinary net income deficits. Support for the public good dimensions was either not enough or the management and marketing challenges were too difficult to overcome to allow Grasshoppers to become a viable concern.

Summary of Legacy

Grasshoppers was a truly innovative enterprise that forged a new path for regional food-system development in Kentucky. The owner/investors and employees accomplished important foundational work for the Kentucky food-system, including developing producers' skill and capacity, building consumer demand, and elevating regional foods within the local and statewide political sphere.

Consumers reported greater awareness of the variety of food products available in the region and a sustained commitment to supporting regional food system development. On a wholesale level, restaurateurs reported moving toward a more seasonal approach to their menu planning and a continued interest in working with regional food products. As a result of efforts to coordinate regional procurement, the school system changed to a six-month lead time on bids, which, according to one informant, "was the real game changer for access to [that] institution's buying power. Farmers could plan and plant with this sort of lead time."

The greatest long-term impact of Grasshoppers Distribution is undoubtedly in the arena of producer development. Training and services developed by Grasshoppers were of high value to participants and set the stage for the next level of food-system development in the state. Producers cited greater knowledge and capacity in a number of areas, including production planning, post-harvest handling, packing and grading standards, invoicing, and both production and financial record-keeping. For many producers, Grasshoppers provided their first sales outside of direct marketing and served as a key stepping stone for scaling up their operations. While the immediate opportunities for regional producers seeking to sell outside of direct marketing channels in the Louisville area is uncertain, there is significant interest on the part of both producers and consumers in continuing to build a vibrant regional food system.

Summary of Recommendations

Sound Plans

Grasshoppers started operations with limited startup capital and without an accurate assessment of the existing capacity of regional producers (including infrastructure and technical knowledge of wholesale production) or an adequate set of logistic and quality-control systems to manage the aggregation of products from multiple small producers. Employing an expert in wholesale produce distribution (if not as a manager then as a consultant) to establish the necessary protocols can provide needed foundation of the enterprise to ensure a baseline of efficiency.

Those who want to start a new enterprise should think carefully and critically about the minimum financial, human, and material resources needed to set the enterprise up for success and must have the patience to wait until they are in place before opening the doors. Additionally, we strongly recommend that all enterprises establish clear metrics coupled with defined targets and timelines for conservative growth. This approach allows managers and ownership to focus on the business that they're in and avoid the distractions of other services or opportunities that could be offered.

> ***"I think now that Grasshoppers is gone some realizations have opened up… where do I get my local food? What am I going to do now that Grasshoppers is gone? What is going to be the effort on the part of the city? Are we just going to have farmers markets or is there going to be something bigger? We sure do hear a lot of people saying they wish there was something bigger."***
> ***–Former Owner/Investor***

A Successful Food Hub Is Help Enough

Food hub leadership should identify a strategic and parsimonious set of core services that address the highest needs within the particular context of that region's existing agro-food system. Recognizing the core competencies of the food hub allows management to focus efforts on innovation and efficacies while having the confidence that success as an enterprise, in and of itself, is the realization of the food hub's mission. As we heard from farmers working to find new markets after Grasshoppers' closure, the greatest opportunity Grasshoppers provided was serving as a reliable and high-volume buyer (relative to direct marketing channels). Though the additional services were appreciated, it was Grasshoppers' activities as a food aggregator and distributor that were, in the end, the greatest help to farmers.

A Food Hub, Not an Island

As previous studies have shown, successful food hubs thrive within an integrated system of support that includes extension, public health agencies, nonprofits, state services, and national programs (Pirog & Bregendahl, 2012). While there were attempts on the part of Grasshoppers to partner with public, private, and non-profit organizations, those partnerships fell well short of the needs. Strategic and committed support, beyond financing, from partner agencies and organizations allows food hubs to focus on the business at hand and supports the broader development of a vibrant regional food system.

Acknowledging that not all regions have equal access to the same level of agricultural support services and technical assistance, there will inevitably be instances where a food hub must take on additional food-system development activities in order to fulfil their goals and mission. In this case, it is recommended that these activities be conceived of as a separate business line and managed accordingly. Time spent on those activities should be financially accounted for either through grants or other outside investment in such activities or by direct financial subsidization by the other business lines.

Introduction

Grasshoppers Distribution was a food hub in Louisville, Kentucky, that opened for business in 2007 and grew to nearly one million dollars in annual sales of regional farm products before closing its doors in December 2013. The enterprise was launched by four producers who saw a need for agricultural diversification in a post-tobacco era and burgeoning opportunity in regional and sustainable food markets. This paper examines the story behind the evolution of the business and points to lessons that may be learned by others involved with similar efforts.

While it is true that mistakes were made, our investigation shows that Grasshoppers Distribution was led by a committed and passionate group of individuals who did everything in their power to make Grasshoppers a success. Unfortunately, their efforts were thwarted by a combination of logistic and infrastructure challenges, a rapidly changing market environment, inadequate financial and human capital, and the complexity of spearheading simultaneous efforts to develop regional producer capacity and build an innovative business model from scratch.

Grasshoppers Distribution as an enterprise was a true pioneer in seeking solutions for how to best promote and provide regionally produced foods in Kentucky. They opened their doors just before the onset of the Great Recession and worked to adapt to new challenges and opportunities as public interest in local food expanded at the same time the new and existing food businesses in the area sought to take advantage of the growing but nascent market opportunity. At the start of operations, there were few ready examples of successful food hubs to emulate, and a general state of undercapitalization restricted upfront investments in adequate infrastructure and expert personnel. Despite challenges in the areas of supply side development, logistics and distribution, and a changing market environment, Grasshoppers made significant improvements and had meaningful impact on participating producers and clients along their almost seven-year lifespan.

While a few challenges were specific to Grasshoppers, we believe that those involved in other food-hub initiatives will find many similarities between their experiences and the story of Grasshoppers Distribution. It is our hope, and a hope stated many times by former stakeholders who participated in our study, that the lessons learned from Grasshoppers will help strengthen future initiatives and contribute to the continued work of building vibrant regional food systems. The closing of Grasshoppers marked the end of an important chapter in the story of regional food-system development in Kentucky, but the story is far from over.

About this Study

In collaboration and coordination with stakeholders in Kentucky and across the nation, a small team of researchers from the University of Kentucky embarked on this post mortem study to capture the story of Grasshoppers and share the lessons learned with those interested in continuing the work of regional food-system development. This project was supported with funds from The University of Kentucky and The Wallace Center.

Team

The research team was comprised of four researchers at the University of Kentucky. Dr. Tim Woods of UK Agricultural Economics and Nathan Routt, M.S. of Kentucky Center for Agricultural and Rural Development (KCARD), conducted the financial analysis. Lilian Brislen, a Ph.D. candidate in Rural Sociology, and Dr. Lee Meyer of UK Agricultural Economics conducted the qualitative analysis. Findings presented in this report represent the synthesis of these two lines of inquiry.

Methods

This report presents two complementary approaches to telling the story of Grasshoppers. The main body of this report presents findings from a qualitative analysis, which is supported and confirmed by the financial analysis included in the Appendix to this report. Our intent is to provide a narrative of the history of the enterprise and provide insight as to why events unfolded the way they did.

Qualitative Analysis

In order to capture a comprehensive assessment of the strengths, challenges, and lasting legacy of Grasshoppers Distribution, our study included focus groups with former suppliers and clients, in-depth interviews with former staff and owners, and content analysis of formal business documentation (business plans, grant applications, and loan applications) made available through an open records request to the Kentucky Department of Agriculture and the Governor's Office of Agricultural Policy.

Three focus groups were conducted: suppliers (farmers and value-added food producers), wholesale clients (restaurants and institutions) and CSA subscription clients. Each focus group lasted one-and-a-half hours and contained six to ten participants. We also conducted nine in-depth interviews with former staff, owners, and investors, lasting two hours each. Follow-up inquiries were made via email to interview participants.

Quantitative Fiscal Analysis

Historical financial data were provided by Grasshoppers Distribution and the Kentucky Governor's Office of Agricultural Policy, which included quarterly income statements and balance sheets for the Grasshoppers enterprise. Annual data were provided for 2007 through 2009 and quarterly data until the venture closed following the fourth quarter of 2013. A longitudinal analysis of this data was conducted to explore the financial health and progress of the business. Financial ratio benchmarks were used, based on observations from other food hubs in a recent Food Hub Benchmarking Study coordinated by the National Good Food Network (NGFN) (Fischer et al., 2013; NGFN Food Hub Collaboration, 2013) as well as five year averages for small-to-medium-sized produce wholesalers in the southeast U.S. (Sageworks 2014). Ratio analysis was used to explore issues of liquidity, solvency, efficiency, and profitability. Findings from this analysis are contained in the Appendix to this document.

Historical Context

One cannot tell the story of agriculture in Kentucky without including some portion of the history of tobacco. Grasshoppers Distribution emerged during a significant period of change for Kentucky agriculture, and in many ways the story of Grasshoppers Distribution is tied closely to what many in Kentucky refer to as "the tobacco transition." The tobacco transition began in the wake of the 1998 tobacco Master Settlement Agreement, in which 46 states settled with four major tobacco companies for a total of $206 billion (to be paid over 25 years) to recover expenses incurred through the deceptive marketing of tobacco products and related public health costs (Cross, 2006). States were allowed to use the settlement funds at their own discretion, which led Kentucky and North Carolina, two states for which tobacco was the economic foundation of their agricultural economy, to set aside a portion of those funds to aid farmers in transitioning away from tobacco production.

The need for transition assistance to farmers was compounded by the Fair and Equitable Tobacco Reform Act of 2004 which abolished the 64-year-old tobacco quota program. The purpose of the quota program was managing supply through poundage quotas and acreage allotments set annually by the USDA. The Reform Act established the Tobacco Transition Payment Program (TTPP), which provided annual payments for ten years to eligible tobacco quota holders, ending January of 2014 (Mathis & Snell, 2012). The National Tobacco Growers Settlement Trust, also known as "Phase II" of the master settlement, was negotiated to compensate tobacco quota owners and tobacco growers for revenue losses resulting from declines in demand (Jones et al., 2007). However, the program ended in 2004 because the tobacco companies were able to take a $1:$1 offset due to the passage of TTPP, which they also funded.

At the time of the master settlement, tobacco was Kentucky's number one cash crop, and though Kentucky was number two in tobacco production (behind North Carolina), it ranked first in number of tobacco growers and quota holders (Cross, 2005). The small-farm legacy of Kentucky is often credited to the tobacco quota program, which allowed small-acreage farmers to produce a crop for a guaranteed buyer at a fair price. A common anecdote in Kentucky was that the tobacco quota paid for the rest of the farm expenses and allowed small farmers to keep farming. The task of reimagining Kentucky's farm economy without tobacco was a daunting task for farmers and agricultural leaders, though it was well recognized that innovative steps must be taken to secure the future of Kentucky's family farms.

In 2007 when Grasshoppers was started, there was tremendous interest in the transition of the tobacco enterprise. When the buyout replaced the guaranteed price program in 2004, it was clear that farmers were going to need to find alternative enterprises. This need gave hope to farming advocates that a revolution would take place and relatively small Kentucky farm operations that had been growing two to ten acres of tobacco would replace the 'golden leaf' with vegetables or other high-value specialty crops. Because of the lack of markets and infrastructure, investment in supply-chain infrastructure was needed. In the minds of many, Grasshoppers Distribution would help fill that gap for producers serving the Louisville Metro area.

Grasshoppers Distribution's History

The animating vision for Grasshoppers was a for-profit business that would serve as a model for how to grow a regional food economy that addressed issues of food insecurity and access while supporting small and mid-sized family farms. According to a former owner/investor, the concept for Grasshoppers was to reach out into the rural areas of the state and connect those producers with the markets provided by the largest population center. By providing an all-in-one enterprise serving both buyers and producers of regionally produced food, Grasshoppers was envisioned by its founders and subsequent investors as a key first step in building a vibrant regional food market in the Louisville Metro area. Over the course of its operation, Grasshoppers offered Louisville community members and food businesses year-round access to regional produce, protein, and value-added food products. Grasshoppers worked with more than 70 different farmers and food producers and directed over 2.25 million dollars into the hands of producers in the region.

Ownership

Grasshoppers was founded in 2006 by a group of four farmers who shared a common understanding of the pressing need for new high-value market outlets for Kentucky's family farms in the wake of the end of the tobacco program. These four farmers were initially connected through their membership in Community Farm Alliance (CFA), a statewide nonprofit farm and food advocacy organization. CFA, in partnership with the West Louisville Food Working Group, conducted the preliminary feasibility study for a food-based enterprise to serve the "food desert" region of West Louisville, and the study activities and findings served as the initial impetus for the formation of Grasshoppers Distribution.

In the first years of Grasshoppers, the owners were highly involved in the organization and operations of the business. Each owner bought a unique and important set of skills and resources to the table, including direct marketing, organic horticulture, Community Supported Agriculture, operating a mid-sized meat-processing facility, and integrated value chains. As full-time staff was brought on and the operations grew, owner involvement in operations lessened, and responsibility for overseeing operations fell largely to the four subsequent general managers. One of the original owners sold their share of the business after the second year of operations, citing concerns over the continued viability of the operation and an unwillingness to take on the additional debt needed to keep the enterprise afloat.

Midway through the life of the business, in 2010, a major capital shortfall lead to Grasshoppers very nearly shutting its doors. Instead, a new general manager (the fourth) led a major recapitalization effort through a Series A investor offering. This change led to the reorganization of Grasshoppers' ownership into an investor board to which the general manager reported. The original operating agreement, which required a consensus of all owners for major decisions, was exchanged for a shareholder-led board of directors with voting rights proportional to ownership stake. The investor board consisted of five voting members, though total membership fluctuated as members stepped down and were replaced at a later dates. Board composition included one representative of the original farmer-owners, the general manager (whose title switched to president after the investor offering), who held a voting ex-officio position; two Series A investors; and non-voting members (up to two additional seats) who either possessed expertise in an appropriate field or were financial stakeholders (lenders). A Series A investor served as board president. There were ten additional Series A investors, including the two remaining original owners not present on the board and holding a total of 55.1 percent of ownership. In the winter of 2013 the board voted to bring on a consultant to take over management and restructure the enterprise. This consultant served first as interim president and then president (i.e. the fifth general manager in our account) and later also made a Series A investment.

Finance

The initial funds for the startup of Grasshoppers came from a USDA Value Added Producer Grant that was leveraged in part by a modest investment by each of the four farmer-owners in addition to significant commitments of in-kind labor from the owners and staff of a partner nonprofit, Community Farm Alliance (CFA). The process of writing the grant served as the initial organizing and planning process and clarified the vision and business structure for Grasshoppers. Grasshoppers Distribution also applied to the Kentucky Agricultural Development Board (KADB) for additional start-up funds but were turned down. A decision was made to move forward with beginning operations with only the VAPG funds and the sweat equity of the owners and CFA partners. Grasshoppers made a second successful application for grant funds from the KADB during the second year of operations. The KADB was the single largest supporter of Grasshoppers, providing two loans totaling $235,000 dollars and two grants totaling $200,980 dollars over the course of the five subsequent years of Grasshoppers' operation.

Advocating for the relevance of Grasshoppers to counties surrounding the Louisville Metro area, Grasshoppers' owners and leadership also approached individual county agricultural development boards and solicited their fiscal support of the enterprise. They ultimately received a total of $65,500 from 17 counties, and with the funding came an implicit assumption that Grasshoppers would make a good-faith effort to work with producers from those counties. Some informants felt that the need to seek out additional sources of funding to capitalize the enterprise drove the geographic scope of their product sourcing, rather than considering the practical needs of efficient distribution and the best-qualified producers.

The four original farmer-owners provided initial financial investment on top of significant sweat equity in the establishment of Grasshoppers' operations, as well as taking on personally guaranteed debt to finance continued operations at points of financial crisis for the operation. Over the winter of 2009/10, after the departure of one of the owners, two of the farmer owners took a personally guaranteed loan from a private bank for $30,000, and all three farmer owners personally guaranteed a $35,000 loan from the Kentucky Agricultural Development Board. Later, in 2010, one farmer-owner provided an additional $40,000 bridge loan by leveraging personal assets during a time of acute cash-flow crisis. At the time of Grasshoppers' closing in 2013, a balance of $21,000 on the personally guaranteed KADB loan remained to be repaid by the farmers. Other liabilities at the time of Grasshoppers' closing included a balance of $21,945.60 on a loan made to Grasshoppers by a principle owner/investor, $43,856 on a loan from Wholesome Wave, and an outstanding balance of $119,111 on the 2012 loan from KADB. There was no recovery of owner/investor equity in the firm.

> ***"The [farmers] markets can be a real gamble, and it's really nice to have an upfront contract relationship with somebody that you feel is dependable."***
> ***–Former Supplier***

Business Models

Grasshoppers Distribution adopted several different business models over the course of its existence. The initial business plan under which Grasshoppers was launched and which was submitted as part of the first unsuccessful application to the Kentucky Agricultural Development Board in 2007 describes a business focused on addressing issues of food access and food security.

"This business will provide sales and marketing opportunities for Kentucky farmers, local food entrepreneurs and area residents, while offering citizens of West Louisville wholesome and affordable fresh food…The primary effort of this business is to expand service to the low income individuals of West Louisville through the current sales relationships already established with the higher income customer base that farmers now serve."

The focus on food access informed their site selection in West Louisville, identified as a food desert, and the intention to split Grasshoppers' market between high-end restaurants and retailers on one hand and the "families of West Louisville" on the other. There were explicit plans to partner with urban entrepreneurship efforts on the tasks of distribution, marketing, and the development of a mobile market, as well as a partnership with a nonprofit organization who would hire one full-time and one part-time employee to assist with different aspects of business and demand development.

Within a year a revised business plan submitted to the Kentucky Agricultural Development Fund painted a different picture—that of a business focused wholly on small-farm and regional food-system development. According to the 2008 business plan: "It is the vision of the business not only to become the premier local food distribution business in the state, but to become a model for local food distribution nationwide. It is the further goal of the business to offer a source verified product which we believe is the key to drawing together and maintaining a relationship between Kentucky's producers and its myriad potential customers and to offer our customers an authentic experience as they seek to get to know their farmers and where their food comes from."

The leadership and staff of Grasshoppers encountered unexpected difficulties in their efforts to establish an efficient wholesale distribution enterprise. According to former customers and suppliers, key restaurants and other small wholesale buyers (e.g. specialty food grocers) identified in the marketing plan were already accustomed to sourcing their products directly from multiple producers. Despite their professed interest and intention to work with Grasshoppers, restaurant and wholesale clients found that Grasshoppers was unable to provide an advantage over working with individual growers in terms of convenience, price, quality, or selection. Additionally, former employees identified a particular challenge in finding farmers who could consistently produce wholesale quantities of high-quality products handled and packed appropriately. In its early years, Grasshoppers was simply not in a position to provide for larger wholesale accounts such as schools or institutions. This limitation was due in part to a lack of adequate supply from producers coupled with Grasshoppers' lack of expertise in logistics and inadequate infrastructure (e.g. cold storage) to effectively aggregate multiple producers to large orders.

> ***"In the wholesale department I think we just didn't have enough to offer. Prices were too high and selection was too low. We didn't have standardization. It worked initially because [farmers] transitioned [existing sales] relationships to us and that carried over for a while. But then I think [the restaurants] missed that relationship with the producer."***
> ***–Former Employee***

The difficulty faced in wholesale distribution lead to the overhaul of the business model, transforming Grasshoppers into a subscription program marketed as a Community Supported Agriculture (CSA) Program. This switch was motivated by projected margins of 40 percent on CSA subscriptions compared to 20 percent on wholesale, and a projected break-even point of 500 subscriptions. Two years into the CSA-modeled subscription program and still unable to achieve financial viability, a decision was made to switch the format to an online marketplace that allowed customers to build custom orders on a weekly basis in lieu of the pre-packaged season long share. While this change in services did expand the customer base, it also increased weekly "churn" (i.e. there was a lack of consistent week-to-week purchases by customers). By one estimate only about one-third of the customers were the loyal core, with the others opting in and out at will. That churn made it difficult for Grasshoppers to serve the market and control its costs. Grasshoppers' managers also learned that CSA customers are not a homogeneous lot. Grasshopper's target demographic of higher-income consumers expected higher quality than the organization was able to consistently deliver.

The final attempt to reorient the Grasshoppers' business model included an effort to expand into value-added processing and manufacturing (flash frozen produce, fresh soup) in order to meet customer demand for prepared foods and re-engaging wholesale and institutional markets. These efforts met with mixed success and were hampered by inadequate staff capacity after significant downsizing due to financial constraints. In the final two years, though staff and owners recognized the opportunity presented by institutional and large wholesale sales, cash-flow issues resulted in a situation where the online marketplace could not be abandoned as it was the primary revenue generator of the enterprise.

Sales and Income

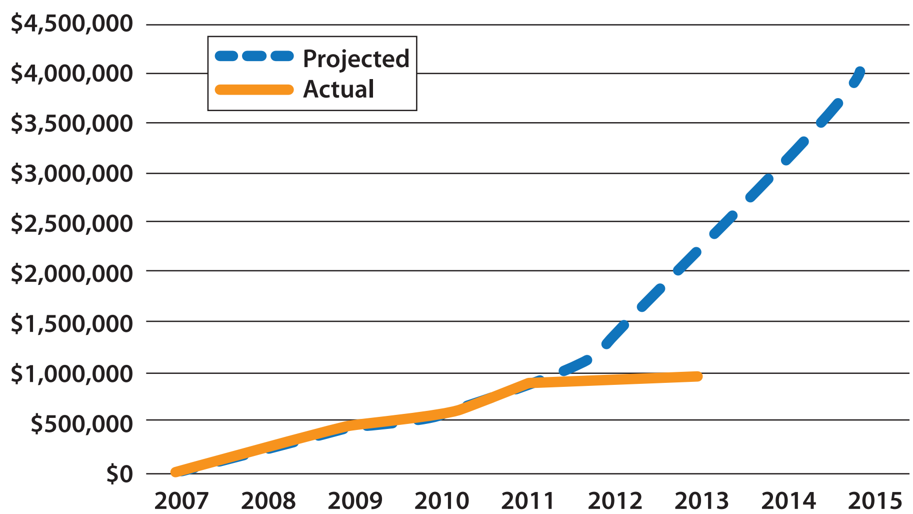
Grasshoppers' sales were modest initially, growing steadily from $40,000 in 2007 to $550,000 in 2010. Net losses persisted, however, and changes in management and market focus led to an effort to reach what was perceived to be a minimum efficient scale. Sales hovered in the $900,000 range in 2011 and 2012 while losses persisted. A major proposal was brought to the Kentucky Agricultural Development Board in February 2012, suggesting a plan to grow Grasshoppers to a $4 million enterprise and positive net profits by 2013. This growth was to be achieved mostly through CSA and online grocery income along with another $500,000 in wholesale sales. Grasshoppers' proposal was for a modest $537,000 capital expansion funded 45 percent through a KADB grant and the balance from other sources (a USDA Farmers Market Promotion Program [FMPP] grant already awarded and another FMPP application in process, a $25,000 grant from Seed Capital Kentucky, and other private investors/debt financing) (Table 1).

The ambitious sales growth projections never really materialized. The KADB opted to provide a portion of the funds through a loan of $200,000 reflected on the third quarter 2012 balance sheet.

Figure 1 shows the projected sales suggested at the time of the KADB grant request in 2012 and the subsequent sales realized over the duration of the business. Sales never approached the growth targets, in spite of the capital infusions.

Gross sales for Grasshoppers grew from $40,000 in 2007 to almost $1 million in 2013, but the venture never was able to generate a profit beyond grant income. Net ordinary income (earnings before interest, depreciation, taxes, and other income) was substantially negative each year. Adjustments for depreciation and interest were always relatively small since Grasshoppers carried such small balances in equipment and facilities. Most of the adjustments to Net Ordinary Income came through state and federal grants, loan forgiveness, and Kentucky Proud[1] promotion rebates. Significant grants early in the investment were enough to generate positive overall net income balances, but this figure does not accurately reflect the net from operations.

Figure 1. Projected and actual sales



Note: Sales projected in application to KADB, Feb 2012

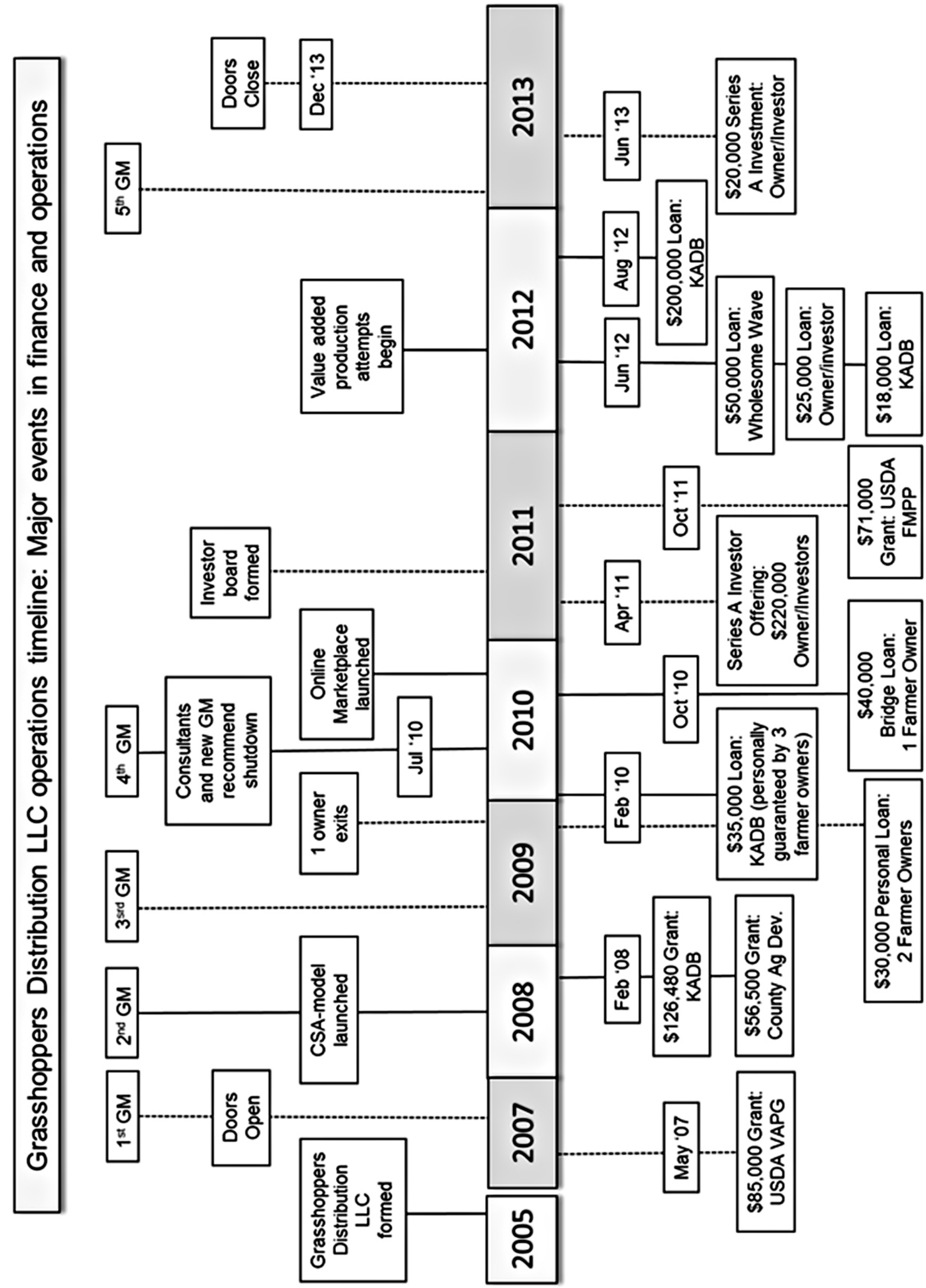
Table 1. Sources and measures of income (gross, net ordinary, net)

Year	Gross Sales $	Net Ordinary Income $	Other Income/Source $		Net Income $
2007	40,047	(72,568)	84,125	VAPG (84,125)	11,556
2008	301,150	(108,368)	156,282	KADB Grant (154,000), KY Proud, VAPG)	48,400
2009	486,204	(123,594)	34,485	KADB (34,000)	(89,907)
2010	551,000	(48,627)	14,803	Depr, int adj	(63,429)
2011	894,219	(57,234)	4,163	Depr, int adj; KY Proud ad reimburse (5,100)	(63,724)
2012	914,797	(171,290)	111,755	Depr, int adj; KY Proud ad reimburse (14,738), KY DOH (1,473), USDA (5,065), Other (2,284), GHOP R&D (5,236), Brown Family loan forgiveness (75,825), LIBA, (4,142), Seed Capital (25,000)	(59,533)
2013	963,058	(130,191)	29,819	Depr, int adj; KY Proud ad reimburse (7,484), USDA (14,709), Other (21,747), KADB (18,000), sale of assets (6,912)	(100,374)

Grant funding from various sources continued to be important throughout the life of the firm, but persistent losses made it less and less compelling to attract outside funds sufficient to cover the deficits that were being realized. Grasshoppers finally was compelled to discontinue business at the end of 2013 and realized a modest gain from the sale of assets but not enough to pay off outstanding loans in full, much less return anything to the initial investors.

[1]Kentucky Proud (KY Proud) is a marketing and promotion program run by the Kentucky Department of Agriculture. For more information visit http://www.kyagr.com/marketing/kentucky-proud.htm

Figure 2.



Grasshoppers Distribution LLC operations timeline: Major events in finance and operations
2005
2007
2008
2009
2010
2011
2012
2013
Grasshoppers Distribution LLC formed
1st GM
Doors Open
2nd GM
CSA-model launched
3srd GM
1 owner exits
4th GM
Consultants and new GM recommend shutdown
Jul '10
Online Marketplace launched
Investor board formed
Value added production attempts begin
5th GM
Doors Close
Dec '13
May '07
$85,000 Grant: USDA VAPG
Feb '08
$126,480 Grant: KADB
$56,500 Grant: County Ag Dev.
Feb '10
$35,000 Loan: KADB (personally guaranteed by 3 farmer owners)
$30,000 Personal Loan: 2 Farmer Owners
Oct '10
$40,000 Bridge Loan: 1 Farmer Owner
Apr '11
Series A Investor Offering: $220,000 Owner/Investors
Oct '11
$71,000 Grant: USDA FMPP
Jun '12
$50,000 Loan: Wholesome Wave
$25,000 Loan: Owner/investor
$18,000 Loan: KADB
Aug '12
$200,000 Loan: KADB
Jun '13
$20,000 Series A Investment: Owner/Investor

Challenges

Several of the challenges Grasshoppers faced in its operations are common to almost every new regional food venture. The specific way these common obstacles played out for this food hub will hopefully shine a light for others following in Grasshoppers' efforts to build a regional food economy.

Retaining and Implementing Expertise

The complex business model Grasshoppers was working to develop required a high level of expertise in a number of specialized fields for tasks such as setting up protocols and logistic systems, inventory and warehouse management, as well as in day-to-day operations of a subscription delivery service. As will be discussed, high levels of staff turnover, combined with frequent changes to the business model and underdeveloped supply-side expertise and infrastructure resulted in management and quality control issues that affected customer relations and overall performance of the enterprise.

> ***"I think everyone who was ever there had the best intensions throughout the whole thing… Everyone was in it for a reason and it wasn't money. Just really cared about it and was really passionate about it. It was fun."***
>
> ***–Former Employee***

Finding and retaining qualified staff in key leadership roles was a significant challenge faced by Grasshoppers. This challenge was caused primarily by a lack of adequate working capital to invest in such expertise and the strain placed on a series of managers tasked with developing the enterprise. Though the core of the business model was wholesale produce aggregation and distribution, at no point in its existence did Grasshoppers have a member of the management team with a specific background in that type of business. This lack theoretically could have been addressed through the careful recruitment of expert board members to provide guidance in key areas such as finance, wholesale produce delivery, or marketing. While the initial farmer-owners had experience in some areas of the value chain, the particular exigencies of wholesale produce were beyond their expertise or that of the subsequent owner/investor board.

This is not to say that Grasshoppers lacked dedicated or talented staff. Former suppliers and customers and other stakeholders spoke highly of the dedication and work ethic of Grasshoppers' staff and management, and there were many highly skilled and passionate individuals who poured their hearts into trying to make Grasshoppers a success. Rather, the unique and intricate management demands of the different business models pursued by Grasshoppers required highly specialized knowledge and knowledge and systems that the enterprise did not have ready access to.

> ***"I don't think the board or staff [was] expert enough collectively in what business model really works as it related to those produce projects."***
>
> ***–Former Funder***

Produce wholesaling and aggregation is a very demanding and competitive field. Without a foundational knowledge in the unique demands of this sector, coupled with constant cash shortages, Grasshoppers staff were under unrelenting strain, not only for their own jobs but for the success of enterprise as a whole. There was no financial buffer on which the enterprise could rely for the first few years of development as they worked out the kinks of the enterprise, and thus there was a constant pressure to sink or swim. This pressure was further compounded by the significant challenge of having to simultaneously learn the ropes of wholesale produce aggregation and distribution while developing and implementing innovative solutions to that business model in order to serve the mission of working with regional producers and improving food access. Said another way, owners and managers were trying to revolutionize a business model without first having a thorough understanding of how the conventional model worked.

> ***"At the end things were just pushed through too quickly. Instead of spending time with a certain project making sure it took off it was like 'Ok let's just go on to the next one.'"***
>
> ***–Former Employee***

Given the high level of demand placed on management staff, it is not wholly surprising that Grasshoppers had a high rate of turnover in key leadership positions; it had five general managers in the almost seven years of its operation. Not only was the learning curve for managers steep, the learning process was repeated as exiting managers burnt out and new managers were introduced. Setbacks to the development of the enterprise caused by the constant resetting of the leadership learning curve were further compounded by the nearly annual retooling of the business model, as discussed in the next section.

Logistics, Quality Control, and Infrastructure

The logistic requirements of the various enterprise lines engaged by Grasshoppers required detailed systems of oversight and an extensive system of built infrastructure both within and outside of the boundaries of the enterprise. At times, 70 farmers were involved; at one point more than 1,400 individual customers and 34 drop-off locations created an extremely complex mire of costly logistical functions. Over the years of its operations, management improved as new quality and inventory controls systems were developed and as the company hired more experienced managers. However, communication and coordination remained a problem.

> ***"We were always [asking] 'What is your business plan like?' 'What are your risks?' 'What's your competition?' They didn't have a lot of those answers."***
>
> ***–Former Funder***

"We were very much overwhelmed and I feel a lot of us had a lot on our shoulders that last year. I feel like there was a lot that was being dropped because it was such a strenuous work load for everybody."
–Former Employee

Former suppliers and customers observed that employees were hardworking and well-intentioned, but not always operating as a "well-oiled machine." Some aspects of the operation, such as weekly communication with farmers regarding orders, were identified as working well and reliably. Other dimensions, such as regular timing of invoice payment, were a point of frustration. In the early attempts to supply restaurants, restaurant buyers planning menus felt they were unable to get information regarding product availability in a timely fashion. Grasshoppers' staff were successful in helping farmers understand the needs of chefs, but the logistic challenges (a combination of product quality, prices, and service) prevented them from being a primary supplier wholesale customers could rely on.

"You never went to Grasshoppers to make a delivery and thought 'Now this is a profitable business. I can tell this thing is clicking… back up to the dock and someone is ready to receive my order…' No, you had to walk through there to find someone to receive your order and you get paid monthly. It just wasn't clicking. It wasn't a well-oiled machine."
–Former Supplier

A significant, and possibly the largest, contributor to issues of quality control for Grasshoppers was the lack of comprehensive cold-chain management from field to client. For producers, those new to specialty or wholesale production often lacked the on-farm protocols and infrastructure to provide an effective cold chain, as walk-in coolers and refrigerated transport are a significant investment. On-farm cold-chain management is critical for managing and maintaining quality, especially for removing field heat from greens, berries, and other tender products.

"Quantities and packaging were a problem. We would ask for packaging to be one way. Once they delivered it was another way."
–Former Wholesale Customer

Grasshoppers struggled, as many food hubs do, to find a workable solution to the logistic challenge of getting products from far-flung farms to the hub in a cost effective way. Early on they took on the task of picking up from each farm individually with a rented truck. After three years of struggling to find a workable solution, they switched to requiring farmers to deliver product to their West Louisville location, which often resulted in products taking long trips in the back of (sometimes uncovered) pickup truck beds in summer heat. Quality-control issues proved a significant obstacle to developing a sustainable restaurant and retail business and impacted CSA customer satisfaction. However, conditions improved significantly over time as investments were made in new cold-chain infrastructure, post-harvest handling protocols and product standards and clear criteria for rejection were developed.

"We had quality issues and a lot of it was we didn't have strict enough requirements for our growers. A lot of our growers didn't have refrigerated trucks… There was definitely an education piece there. I think we struggled with restaurant sales because of that."
–Former Employee

Clear Plans and Evaluation

In the case of Grasshoppers Distribution, frequent, almost annual, changes to the business model posed a serious obstacle to developing efficiency and expertise within the enterprise. This situation was compounded by the logistic complexity of housing several different types of business lines within one enterprise without the infrastructure or expertise to evaluate and achieve efficiency between them. As discussed earlier, Grasshoppers was at various points and often concurrently operating a subscription produce box service, an online specialty grocery delivery service, a trucking service, wholesale aggregation and distribution, value-added food manufacturing, and a production consulting service for farmers. In essence, Grasshoppers never knew exactly what business they were in and thus weren't able strategic decisions based on that plan.

"To ask the question and answer the question, 'What is the role of the food hub?' is a critical piece that was never done… I think [the owner/investors'] instincts told them this was needed but they didn't know what problem they were trying to solve exactly."
–Former Employee

One manifestation of this phenomenon was the ongoing debate between owner/investors and management regarding the for profit status of Grasshoppers. One faction felt it was important to develop Grasshoppers as a profitable enterprise as a means to demonstrate the broader viability of regional food systems. However, there were dissenting opinions within management who cited the significant needs for technical assistance and hand-holding of producers who were new to horticultural production and/or wholesale and high-end markets. The additional challenges presented by the need for technical assistance to producers will be discussed in greater depth in the next section. Continued disagreement regarding the direction and scope of Grasshoppers' activities resulted in what one former employee described as "analysis paralysis" and hampered their ability to make timely strategic decisions that met with a unified vision for the development of the enterprise.

"I held, and the company held, the notion of business profitability or, more specifically, for profit, too rigidly. The company's most significant product to date, as it turned out, wasn't return on investment, but was instead the building and facilitating of community, including businesses, around food and around the development of the local food system."
–Former Owner/Investor

The logistic forethought and planning required for complex ventures appears at times to have been lacking. Though there were early intentions to open an on-site retail location and a "mobile market," these intentions were never fully realized—virtually all of Grasshoppers' sales were made via delivery (e.g. to CSA pickup sites and to wholesale buyers). At the height of CSA membership Grasshoppers was operating 34 different delivery sites. In the wholesale distribution business, the most important evaluative metric is profit per drop and that metric drives virtually every key decision, including the distance they can travel to make drop, the minimum size of orders, and how frequent deliveries occur (Bailey, 2014). If a drop point is not measuring up as profitable, you have to pull the plug (unless it's part of a strategic and monitored plan for new market growth). Such evaluations were not made until the fifth year of Grasshoppers' operations, and prior to that time there are accounts of maintaining drop points with as few as four customers, or as little as $50 profit. Additionally, a retail space was created at the warehouse in 2013 but had little sales outside of the holiday season. The delivery component of the business was perhaps an assumed necessity of the CSA model but was not consistently supported by the requisite business analytics to ensure efficiency.

The CSA Conundrum

Though the subscription program was intended to solve cash flow and supply management issues, it ultimately ended up exacerbating them. To achieve viability within their subscription-based model, Grasshoppers needed to capture and maintain a relatively large subscriber base with break-even projections that started at 500 rising to 2,000 shares. In a bid to capture large and spatially consolidated subscriber groups, Grasshoppers pursued partnerships with corporate employers but without great success. While other food hubs have found success through similar initiatives, they were implemented in more developed "local food" markets and with direct financial incentives through the employers' wellness programs (Jackson, Raster, & Shattuck, 2011), whereas Grasshoppers was reliant only on the volunteer efforts of on-site employees. While there was some early success in hitting subscription growth targets, after the first year of the CSA program, subscription numbers consistently and significantly failed to meet benchmarks and never achieved financial viability. Efforts to develop a successful subscription service were further complicated as new market entrants with competing local food offerings emerged.

"I would call and would say, 'Well, how many?' before we planted, 'How many families are you expecting?', and it was usually 900, 800 and by the time we delivered it was around 300-500."
–Former Supplier

After accounting and procurement record-keeping systems were put in place with assistance from the Kentucky Center for Agricultural Development, produce managers were reliably able to hit margin targets for the subscription boxes. However, Grasshoppers was never able to achieve the volume of sales necessary to achieve revenue targets. It is important to remember that a margin is not equivalent to profit, as break-even projections are based on total sales, not individual margins.

There are crucial differences between the model of a farm-based Community Supported Agriculture program and a distributor-managed subscription grocery service, which is what Grasshoppers was effectively operating. A successful large-scale aggregated subscription program that targets the main-stream consumer must function much more like a wholesale produce retailer than a small-scale CSA that serves an ideologically driven customer base drawn to the farmers market ethos of produce. In a farm-based CSA model, a farm enterprise sells a set number of "farm shares" at the beginning of the season and receives payment in full from the shareholders. These shareholders are thus invested in the harvest of the farm (or the portion of the enterprise designated for the CSA program) and thus share in the risks and rewards of the season. In the distributor-managed subscription program, the distributor is taking pre-orders for subscriptions to be delivered at a later date rather than truly selling shares to subscription holders. In theory, a crop failure in a farm-based CSA program means the shareholder will simply go without; in the Grasshoppers model there was no such out if the enterprise foundered. Additionally, the CSA strategy, while intended to avoid competition with producers, put Grasshoppers in closer competition with grocers and other food retailers who might have otherwise been clients of Grasshoppers (had they been able to work out the logistics of wholesale aggregation and distribution).

"So let's just say I liked it when they started calling themselves an online grocery store. Because in a traditional CSA you do not choose your product, you get what they have, so I thought it was more appropriate to call themselves something different. But it didn't offend me that they were calling it a CSA."
–Former Supplier

The practical difference between shareholders and subscribers is illustrated in a pivotal moment of Grasshoppers' history that came toward the latter half of a subscription season. According to former staff and owners, it was recognized at the start of the third quarter 2010 that Grasshoppers was yet again facing a significant financial crisis. Funds brought in for CSA subscriptions were running out, while almost half of the subscription period still remained. This problem occurred because planning and implementation of the subscription program was based on financial projections of high levels of subscribership and was compounded by paying premium prices. Funds for existing subscription shares were expended in anticipation of more subscription funds coming in, but those funds never materialized. The decision had to be made of whether to take on further debt (or secure other forms of capital) or shut down the business. The obligation to not default on subscriptions was a primary justification and motivation, along with a broader commitment to the social mission of Grasshoppers, for recapitalizing and continuing to seek a path to viability for Grasshoppers. This scenario of cash-flow crisis caused by the inability to meet subscription goals, overexpenditure of funds early in the season, and subsequent recapitalization, would unfortunately repeat itself throughout the remainder of Grasshoppers' lifetime, and ultimately lead to the demise of the enterprise.

Mission vs Bottom Line

Helping Small Farmers

A consistent challenge across the life of Grasshoppers was how to translate the abstract overarching goal of helping small farmers into the concrete, day-to-day reality of running a food-distribution company. The ideal of integrating social values into a mission-driven food enterprise is easy to grasp, but the practicalities are challenging, or at least nebulous. What does it look like, in practice, for a food hub to help small family farmers? Does this mean offering them the highest price possible? Does it mean having a large impact on a few producers, or a small impact on a large number of farms? This issue was never fully resolved by Grasshoppers, and the lack of clarity and strategy along these lines fueled the general lack of clarity within the enterprise discussed in the previous section.

> ***"Our intention was to try to help as many people as we could. We were… working with a whole lot of farmers. I think that added to complication of it all. If we would have just been working with three or four farmers it would have been easier to make it work than working with 70."***
> ***–Former Owner/Investor***

Pricing

For the leadership of Grasshoppers, price paid to farmers was a key mechanism for realizing producer development. Throughout the life of the enterprise, prices were set once a year and remained the same for the main growing season with a different set of prices offered for the winter season. While pricing benchmarks and calculations varied over time, two former employees (employed at different times) tasked with procurement reported using the previous season's average reported farmers market prices for the state as a general benchmark for a sales price, and then subtracting a pre-determined margin to reach the price paid to farmers. Some additional adjustment was made based on relative availability and demand for specific products. In the later years of the enterprise new pricing calculations included benchmarking sales prices against specialty producer wholesalers in the region. The decision to use farmers market prices as a sales price benchmark is, from a business perspective, rather inexplicable for an enterprise required to work on tight margins and low cash flow. Producers themselves recognized this conundrum and in interviews cited that the prices Grasshoppers paid, while generous, were too high. Seen from one perspective, the price premiums effectively served as form of cash subsidy from Grasshoppers to producers.

> ***"I never wanted to go to the farmers and say let's bargain down the price. That was never our intention."***
> ***–Former Employee***

While keeping the same price for products all season long was believed to simplify the procurement and planning process for everyone along the value chain, it limited the ability of Grasshoppers to adapt to market conditions and to take advantage of the seasonal nature of agricultural production. During the high season farmers and the food hub need to move large volumes of products, and producers can achieve an advantage in quality as well as compete on price with conventional sources. Several informants for this study also expressed frustration with the high wholesale prices (coupled with Grasshoppers' focus on direct marketing), which were seen to work against the goals of scaling-up regional food production and distribution by distorting the market for regional products and shutting out opportunities to work with conventional grocers and other retailers. One former producer summed up this frustration by stating that Grasshoppers' practices and policies limited the enterprise to sourcing "hobby" amount of products (meaning not of a consistent volume for those looking to operate at a wholesale scale of production).

> ***"I was trying to convince them, 'Y'all are paying too much for tomatoes. Buy them for 60 cents instead of $1. We will still bring them all day long.'"***
> ***–Former Producer***

An additional price-focused practice put in place in the latter half of Grasshoppers' existence was the implementation of what were effectively annual procurement targets for suppliers. For several reasons, Grasshoppers was never able to develop a stable system of orders and procurement that allowed for conventional contracts with producers. Based on a desire to provide a level of certainty and predictability for producers, around the time that the online marketplace was started Grasshoppers began making informal annual procurement targets with select producers. With this practice the procurement manager would set a target dollar amount for total purchases from the producer for the season. While there was a general plan for what products would be purchased, and rough time frames, the broader aim was for Grasshoppers to make and keep a dollar-based target for total procurement over the season from a producer. It is unclear how this practice served the best interest of Grasshoppers, in terms of either finance or logistics.

Avoiding Competition with Farmers

Grasshoppers' leadership decided to avoid competition with existing farm-based CSAs and to target customers outside of the typical dedicated customer base. This decision was based on the commitment to helping small and mid-sized farmers, and a former employee of Grasshoppers Distribution discussed actively avoiding direct competition with their producers: "We didn't want the hard core CSA people." Dedicated or "hard core" local food customers were encouraged to join a farm-based CSA program for the standard season and then to join up with Grasshoppers for the winter months when value-added products, shelf-stable products, and some extended-season production were available. By offering a separate winter CSA program in addition to standard season shares (and later the online marketplace), Grasshoppers helped expand the market for all farmers. However, choosing to primarily target a consumer base outside of the traditional local food and CSA customer base created additional challenges for an already difficult business model struggling to achieve enough subscriptions for viability. That said, the outreach, education, and recruitment of consumers new to regional and seasonal foods was a major achievement for Grasshoppers and a substantial contribution to growing the regional food economy.

Double Duty

Because of the state of the post-tobacco agricultural sector in Kentucky at the time of its inception, Grasshoppers took on many additional activities related to food-system development that overburdened staff and other resources. In a very real sense, the staff and owners of Grasshoppers had to build the food-system foundations on which their business was expected to stand—the necessary preconditions to support such an enterprise were simply not there. Grasshoppers took on the burden of developing both consumer demand for source-identified regionally produced food and the capacity of producers to fulfill that demand. While the enterprise was able to secure public and private funds to pay for infrastructure and operations, technical assistance was late in coming from key partners for the suppliers and customers they served.

> ***"[We] learned a lot of the human resources … [were] being spent on helping farmers from a technical assistance perspective. We have to help them with their business plan, how to get the GAP certification. It's just a bunch of hand holding with farmers. There was no income coming from that…"***
> ***–Former Owner/Investor***

Production Transition and Capacity Building

As highlighted in the opening discussion of the historic context in which Grasshoppers was founded, the availability of high-quality produce and specialty meats at wholesale volumes was limited at best throughout Grasshoppers' span of operation. Developing a high-quality, diversified wholesale horticulture or custom meat enterprise does not happen overnight and demands a highly specialized set of skills, knowledge, and infrastructure (both on the farm and off). However, supply did increase as producers expanded their operations in response to Grasshoppers' efforts and a broader expanding market demand and outlets for regional/source-identified and specialty products.

> ***"[Institutional sales] motivated us to find larger growers. It was difficult. It could have just been the circle that I was working within but we had a hard time finding producers that were experienced at growing at the volumes that we needed to for certain crops."–Former Employee***

Grasshoppers faced significant challenges with product quality control both because of lack of producer knowledge or infrastructure (e.g. walk-in coolers) and initial lack of standards and policies in place by the business. This issue was resolved over time but was the primary complaint made by customers. Former employees also suggested that the producers they dealt with often had "over-diversified crop systems" ill-suited for participation in the wholesale supply chain. From their perspective the ideal (and virtually nonexistent) producer for Grasshoppers would operate "somewhere between a mono-crop and over-diversified," focusing on a few key products of high quality and wholesale volume.

> ***"These guys come every week, they need help, and they need someone to talk to, be there and help them. They used to come into my office all the time. I could never get any work done. They wanted advice and they needed that help. I was like 'I am not extension, I don't have time to do this.'"***
> ***–Former Employee***

The requirements of a wholesale specialty crop farm enterprise differ greatly from a diversified direct marketing enterprise focused on farmers markets or CSA production. For instance, while a farmers market customer may be drawn to a bunch of carrots with the fronds still on and a bit of dirt still clinging to the roots as an indication that they're freshly picked and "home grown," a wholesale operation wants a specific weight of identical bunches washed, trimmed, and packed according to food industry standards and delivered in a new box. The nature of production and harvest planning, post-harvest handling, grading and packing of product, and cold-chain infrastructure (e.g. a walk-in cooler, refrigerated transportation) are all different for wholesale production than a direct marketing–oriented farm enterprise. Making the switch from one mode to the other, or simultaneously engaging in both modes of production (as many producers who are scaling up must do), is a challenging process for producers and an important area for technical assistance.

Trainings organized and facilitated by Grasshoppers' staff, in partnership with agricultural organizations such as the city of Louisville's Farm to Table Coordinator and Kentucky State University, on topics such as post-harvest handling and business management for wholesale operations were highly praised and identified by former producers as key pieces of education in their development as a farm enterprise.

Lasting Legacy

Grasshoppers was a truly innovative enterprise that forged a new path for regional food-system development in Kentucky. The owner/investors and employees accomplished important foundational work for the Kentucky food system around developing producers, building consumer demand, and elevating regional foods within the local and statewide political sphere. Building a robust regional food system built on small and mid-sized producers requires learning and adaptation all along the supply chain as well as investment in infrastructure.

"Well [Grasshoppers] got me back into cooking. There were a lot of things that I was not so excited about when I saw it but it kind of forced me into trying new things"
–Former Customer

In building regional food systems, there are two important shifts for consumers to make: adapting to the seasonality of production (e.g. fresh strawberries are not available in February, and kale is hard to come by in hot months), and an openness to new varieties and entirely new types of product. Upon reflection Grasshoppers customers reported that they are more aware of the range of products available regionally and have a greater commitment to seasonally based eating or procurement as a result of their relationship with Grasshoppers, which indicates that important gains were made among consumers. Consumers also reported an appreciation for the exposure to new foods and a continued interest in sourcing regional foods through a locally owned enterprise. Grasshoppers' efforts to expand year-round availability of regional products was a major contribution to developing consumer demand.

"In the beginning I used to be upset because they couldn't deliver what I wanted them to. Later on I realized I had to adapt. That is exactly what we did. So my business became more sustainable. My food costs go lower because I don't have to buy produce that is out of season."
–Former Wholesale Customer

A significant lasting impact from Grasshoppers' operation is the changes in procurement practices by the Jefferson County Public School System. Through a good-faith effort on the part of the school system and the coordination efforts of Grasshoppers, it was recognized that the existing two-week bidding system was shutting out regional producers because they needed more lead time to plan production and coordinate aggregation. As a result of efforts to coordinate regional procurement, the school system changed to a six-month lead time on bids which, according to one informant, "was the real game changer for access to [that] institution's buying power. Farmers could plan and plant with this sort of lead time."

"I think they lacked experience in what we have to do. We would try to teach them for us to get them into [our institution] they would have to do this, this and this. It was a learning experience [for us] as well. It's like two people trying to learn and teach each other at the same time while trying to make a profit."
–Former Wholesale Customer

Public-sector stakeholders acknowledged the central role of Grasshoppers Distribution in highlighting the importance of investment in and support of regional food-system development for the Louisville Metro Area and for the state of Kentucky. Because of the overwhelming need on the part of producers for technical assistance related to specialty crop production, post-harvest packing and handling, and wholesale enterprise management, Grasshoppers coordinated the development of several highly praised trainings. The success of these efforts then directly inspired the formation of Seed Capital, a nonprofit organization engaged in targeted development efforts toward small producers and regional food-system demand and infrastructure. Despite, or perhaps because of, the closing of Grasshoppers, new public-private collaborative efforts continue to work to foster the growth of regional food production and distribution in the region. However, any new venture seeking investment of public funding will likely be held up to greater scrutiny and oversight. While government and foundation funders may be more cautious with their investments moving forward and may expect more detailed plans and reporting, there is recognition of the importance of investing in regional food-system development.

"I think they were a kind of ladder for us to develop our skills. They could allow us to move a lot of product at a better price while we still needed that better price."
–Former Supplier

"When Grasshoppers was closing down, it seemed like there were a lot of farmers kind of where we were… developing their business, and who really wanted to get into moving a larger volume of product. Grasshoppers was a stepping stone for that."
–Former Supplier

The greatest impact can be seen amongst former suppliers, especially those who came to Grasshoppers as new enterprises or those eager to expand operations. Trainings and services developed by Grasshoppers were of high value to participants, and set the stage for the next level of food-system development in the state. Producers cited greater knowledge and capacity in a number of areas, including: production planning, post-harvest handling, packing and grading standards, invoicing, and both production and financial record-keeping. Grasshoppers' efforts to establish and expand year-round regional food sales outside of the traditional farmers market season encouraged producers to experiment and expand off season and value-added (shelf-stable product) production. This approach was further encouraged by promotion and sign-up assistance provided by Grasshoppers' staff to producers for a Natural Resource and Conservations Services cost-share program for hoop house construction.

"I would say Grasshoppers got us into the wholesale [market], taking and selling a lot in one spot instead of just relying on friends and family."
–Former Supplier

For many producers, Grasshoppers provided their first sales outside of direct marketing and served as a key stepping stone for scaling up their operations. While conventional food distributors may have an interest in natural, sustainable or local products, the interest is fickle and the volume requirements are well out of the reach of small farmers. An enterprise (or enterprises) dedicated to working with small and mid-sized regional producers provides much-needed market security for the farmer. The availability of dedicated market outlet coupled with a demand for larger volumes provided key support and incentives for small and mid-sized producers to scale up production. While Grasshoppers was unable to provide explicit guarantees, they provided more certainty than the gamble of a weekly farmers market and more flexibility compared to annual CSA share sales.

Recommendations

By way of summary of this report, we would like to offer a limited set of recommendations for future efforts in Louisville and other communities based on the analysis of Grasshoppers. It is important to note that, while we believe the recommendations below are, in a sense, necessary for a successful for-profit food hub, they are by no means sufficient. The work of building a regional agro-food system that meets the needs of farms and the community while simultaneously conforming to the structure and demands of the conventional food sector is no small project and is troubled all along the way by a myriad of obstacles and complications.

Sound Plans are Key to Success

Successful enterprises are built on sound, research-based plans that guide strategic development and are driven by the passion and vision of their leaders. However, it is too often the case that passion comes first, and the details are presumed to take care of themselves. Grasshoppers started operations without an accurate assessment of the existing capacity of regional producers (including infrastructure and technical knowledge of wholesale production) or an adequate set of logistic and quality-control systems to manage the aggregation of products from multiple small producers. Employing an expert in wholesale produce distribution (if not as a manager then as a consultant) to establish the necessary protocols provides needed foundation of the enterprise to ensure a baseline of efficiency. However, it is important to acknowledge that acquiring expert staff or services comes with significant cost and may present an early and significant fundraising hurdle for new enterprises.

The service that former suppliers valued most highly was Grasshoppers' function as a reliable, relatively high-volume client. Producers working to expand their operations were able to build their expertise in wholesale production and stabilize their income against the gamble of farmers market sales. Whether that product went into subscription boxes or restaurant produce sections made no practical difference to them. Some producers who were already in, or looking to expand into, exclusively wholesale production stated that the volume Grasshoppers was purchasing simply wasn't worth their time, but institutional sales, when brokered, were a valuable opportunity.

While an ideal situation would include ample startup capital to weather the growing pains that come with any new enterprise, many food hubs will likely face similar challenges to Grasshoppers of scraping by with the help of volunteer labor and tight cash flow for the first several years of operations. That said, this study has also shown that investing in expert management staff is paramount and should be considered a key investment for the long-term success of the business. Those looking to start a new enterprise should think carefully and critically about what financial, human, and material resources are needed at a minimum to set the enterprise up for success and have the patience to wait until they are in place before opening the doors. Additionally, recruitment of a robust and balanced board of directors with appropriate expertise that compliment and/or address an absence of in-house skill sets while also providing representation (voting or non-voting) from stakeholder groups is a key task for any food hub. A balanced set of perspectives from along the value chain coupled with attention to communication and consensus-building helps keep management on track.

A carefully developed and closely monitored plan with clear evaluative metrics will help manage human and financial resources to their highest efficiency. On a shoestring budget, there simply isn't much room for error, and so having clear direction as to the highest and best use of scarce resources is key. To this end we strongly recommend that all enterprises establish clear metrics coupled with defined targets and timelines for conservative growth. By regularly revisiting the question 'What is the value proposition we offer, and how are we ensuring we achieve it?' leadership can both adjust to the constantly changing demands of the market and keep a keen eye on the particular metrics that manage the enterprise. This approach allows managers and ownership to focus on the business that they're in and avoid distractions of other services or opportunities that could be offered. Existing research on food hub best practices, a key resource for developing a new food hub business plan, is available through several public resources including the National Good Food Network and is an invaluable resource for those looking to establish a new enterprise.

> ***"I had to go to Tennessee and find out how to raise green beans. Who really in the state is worried about horticulture? The tobacco industry is still going on. So if we call [University of Kentucky] with something that has to do with tobacco and guess what… it's all answered. It's the easiest thing on Earth. This produce is like… nobody in their right mind would raise it!"***
> ***–Former Owner/Investor***

A Successful Food Hub Is Help Enough

The siren song of mission creep is difficult for passionate and committed people to ignore, but maintaining a focus on the core activities and competencies of the enterprise is critical if a food hub is to find efficiency and viability. Grasshoppers saw its core mission as helping farmers, and this perception drove leadership to make decisions that, while seen as key for helping farmers, were illogical from a business perspective and ultimately undermined the viability of the business. Providing additional services or offering prices or other terms that effectively result in the food hub subsidizing farm enterprises may provide assistance to developing farm enterprises but does nothing to ensure that the food hub will be there in the long term to help build new markets and expand demand. As we heard from farmers working to find new markets after Grasshoppers' closure, the greatest opportunity Grasshoppers provided was serving as a reliable and high-volume buyer (relative to direct marketing channels). Though the additional services were appreciated, Grasshoppers' activities as a food aggregator and distributor were, in the end, the greatest help to farmers.

Food hub leadership should identify a strategic and parsimonious set of core services that address the highest needs within the particular regional context of that food hub, such as aggregation for and access to institutional markets; value-added and/or shelf-stable processing (e.g. IQF); a reliable market for wholesale volumes of premium regional products; or a retail enterprise that provides consistent access to a broad range of regional products by consumers. Recognizing the core competencies and value proposition of the food hub allows management to focus efforts on innovation and efficacies while having confidence that finding success is, in and of itself, the realization of the food hub's mission. As other needs or opportunities arise, food hub leadership should feel empowered to say "no" or "not yet" and reach out to other public or private partners in the region to step in as key partners in building the food system.

A Food Hub, Not an Island

Grasshoppers Distribution was a true innovator in developing the regional food system for the Louisville metro area and in Kentucky. They started operations at a key time in Kentucky agriculture's transition away from tobacco, when there was a large learning curve for many producers entering into or scaling up specialty crop production. The extra educational and other development activities taken on by Grasshoppers' staff, while of huge benefit to the producers, resulted in a dilution of efforts and resources and a confusion of mission. However, Grasshoppers was truly between a rock and a hard place, because there was simply no one else out there picking up the work of producer and consumer development that was an urgent need for Grasshoppers or any other efforts to develop a regional food market to succeed.

While there were attempts to partner with public and non-profit organizations, those partnerships fell well short of the existing needs. As previous studies have shown, successful food hubs thrive within an integrated system of support that includes extension, public health agencies, nonprofits, state services, and national programs (Pirog & Bregendahl, 2012). Strategic and committed support, beyond financing, from partner agencies and organizations allows food hubs to focus on the business at hand and supports the broader development of a vibrant regional food system. Support for technical assistance to producers and consumers from the state and national agriculture and public health related agencies, cooperative extension or other public university resources, and community-based organizations focused on regional food-system issues is an indispensable component of food hub development and success. Unfortunately for Grasshoppers the available assistance was inadequate, though the observed shortcomings have pointed the way for the development of new and much needed technical assistance programs in areas of cold-chain management, wholesale production and management for producers, post-harvest handling and packing, and consumer education around planning and preparing fresh seasonally based meals from unprocessed products.

"For me, the company was about testing models around scalability and viability in local food system development... If the goal was about profitability, it was about profitability for the sake of the movement."
–Former Owner/Investor

Working as part of an integrated network of food-system development also requires an openness and objectivity on the part of food hub leadership to hear criticism and respond to recommendations. Informants in our study suggested that defending Grasshoppers may have become conflated with the defense of investment in regional food-system development, and thus clouded judgment when receiving recommendations for reforming the business model, or when making a decision as to whether or not to close the enterprise down and start over.

Acknowledging that not all regions have equal access to the same level of agricultural support services and technical assistance, there will inevitably be instances where a food hub must take on additional food-system development activities in order to fulfil their goals and mission. In this case, it is recommended that these activities be conceived of as a separate business line and managed accordingly. Time spent on those activities should be financially accounted for either through grants or other outside investment in such activities or by direct financial subsidization by the other business lines.

Conclusion

The work of redeveloping regional food systems that place the livelihood of farmers and well-being of community members on par with accruing profits is challenging, and contends with significant obstacles both within the community and at a national and global level. With this in mind, the leaders, staff, suppliers, customers and supporters of Grasshoppers Distribution should be credited and sincerely thanked for their important contributions. It is our hope that through this report the lessons provided by the story of Grasshoppers will add to the many positive changes its operations realized for the farmers and consumers it served.

Appendix: Financial Data and Ratio Performance Analysis

The following section presents the findings from a financial and ratio performance analyses conducted using data provided from Grasshoppers quarterly reports and other documents. In this section we will briefly explain the rationale and components of each of the analyses and measures used and then present the findings that emerged from the Grasshoppers historical financial data.

Why Ratio Analysis

Ratio analysis allows firms to recognize important relationships within their financial statements that can help with benchmarking and management decisions. Such ratios are commonly used both within an organization and by external creditors and/or investors to assess the financial health of the enterprise as well as to implement managerial changes with a view toward improving organizational financial health. Many ratios are common to this analysis and are typically grouped in those that consider issues of liquidity, solvency, efficiency, and profitability. Annual (2007-2009) and quarterly (2009-2013) income and balance sheet data were provided by Grasshoppers ownership and the Governor's Office of Agricultural Policy.

Liquidity

Liquidity explores the ability of a firm to generate short-term revenue sources to meet short-term financial obligations. Liquidity is commonly measured using the current ratio (current assets/current liabilities) and, where inventory management may play a significant role, the quick ratio (current assets less inventory/current liabilities). The higher the ratio, the more liquid the firm. Quarterly balance sheets can't fully capture some of the inherent cash-flow challenges faced by an entity like Grasshoppers. Factors that contributed to particularly significant liquidity challenges included seasonal production and markets, staff payroll obligations, a significant dependence on a CSA pre-pay and delivery revenue model, and periodic infusion of grant funds for a variety of needs over the life of the business.

Seasonality

Fresh produce from regional producers accounted for a significant amount of the sales from May to September. Unlike comparable produce wholesalers that source year round from wherever produce is in season, Grasshoppers depended almost exclusively on local sources of products. In order to offer product year round, Grasshoppers was self-limited through its mission and thus procurement strategy to what little extended season product they could source locally— a few local year round hydroponics growers, local meat and eggs, and shelf-stable products.

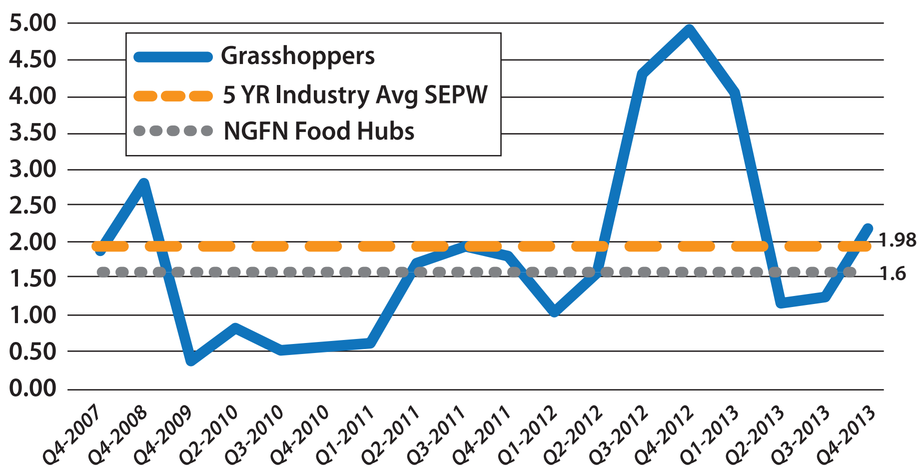
Human Resources

Meeting monthly payroll obligations is one of the more demanding financial obligations for a start-up venture, particularly when revenue has seasonal swings. Some volunteer staff was used to mitigate peak-season labor demands, but management and core staff remained employed full time all year. One of the managers chose to defer compensation for a period while the company struggled to meet other fiscal obligations, but it's evident that meeting payroll throughout the year was a frequent difficulty.

CSA Cash Flow Model

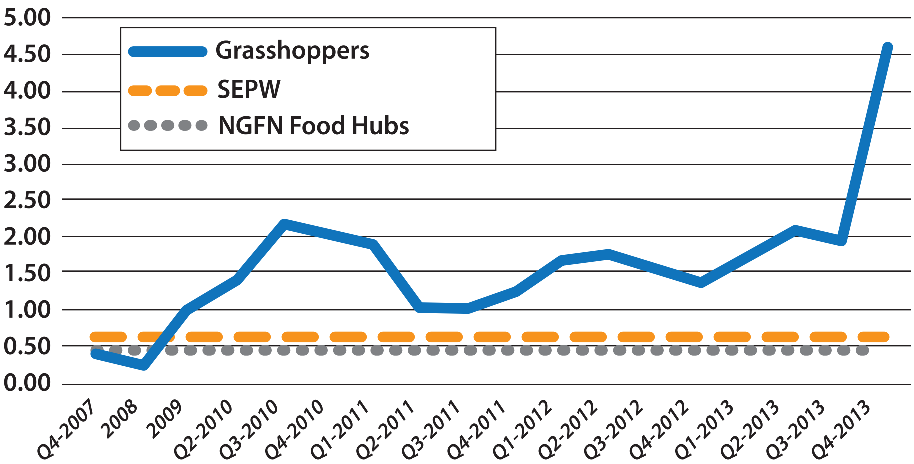
Grasshoppers made a significant push to expand its CSA markets after the initial wholesale focus seemed to limit growth prospects. Louisville certainly provides a strong retail market for regional foods, and an opportunity to be a CSA aggregator seemed promising. The challenge with a CSA business model is that shareholders contribute payment in full during the winter for season-long subscriptions. While this has historically been one of the primary agricultural benefits of the CSA model, it requires considerable accounting discipline. CSA accounting is complicated, both in identifying real costs and also for cash flow. Many single farm–based CSAs have struggled with the fiscal discipline of (1) knowing their costs of production and marketing and (2) charging a share price that would allow full cost recovery (Woods et all, 2009). In defense of Grasshopper management, a firm margin-based pricing for CSA shares was employed that allowed them to reasonably manage the input costs. The challenge, it seems, fell more to the segregation and utilization of CSA funds to manage cash flow. One key lesson is that a business that blends CSA sales with other wholesale and retailing activities requires a very high level of managerial discipline.

Figure 3. GH current ratio vs 5-year produce wholesaler industry average and NGFN 2012 food hubs



Note: NGFN reported in 2014 an average current ratio of 2.39 for 48 hubs in 2013.

Figure 4. Debt to asset ration (GH vs SE produce wholesalers) $ debt for each $1 of assets



Note: NGFN reported in 2014 an average current ratio of 2.39 for 48 hubs in 2013.

Grant Funds and Other Outside Infusions of Capital

Separating sales revenue and grant revenue in the existing financial statements is difficult. Multiple grant contributions from the Agricultural Development Board provided help with meeting short-term liabilities. Tracking how grant funds are used in some cases is difficult based on the financial data provided. The outside funding helps the appearance of liquidity ratios, but the funds to meet short-term liabilities were not consistently being met by the short-term sales and assets. This conclusion is supported by the observations around continued deficits in net income. These tendencies are common in startups but can also present immediate difficulties to an otherwise sound long-term business plan.

Current ratios for Grasshoppers are summarized graphically in Figure 3 using available data and compared to similar ratios reported for small wholesale produce firms in the southeast U.S. (five-year average) and also food hubs included in the recent NGFN study. Quick ratios that calculate the current ratio less inventory holdings were calculated for Grasshoppers–slightly higher than the current ratio. Neither Grasshoppers nor the benchmark food hub firms typically carried extensive inventories, as they are selling primarily seasonal and fresh products. The most recent current ratio data for food hubs provided by the NGFN in 2014 for calendar year 2013 reports an average current ratio of 2.39 for 48 food hubs nationally, up from the 1.6 level observed in 18 hubs in 2012.

Sorting out the short-term cash effects from grants impacting the liquidity situation is difficult. Further, it was difficult from the financial data provided to measure monthly or quarterly cash flows. It is evident from the quarterly current ratios, however, that even with outside grant infusions, the liquidity situation was often tight for Grasshoppers.

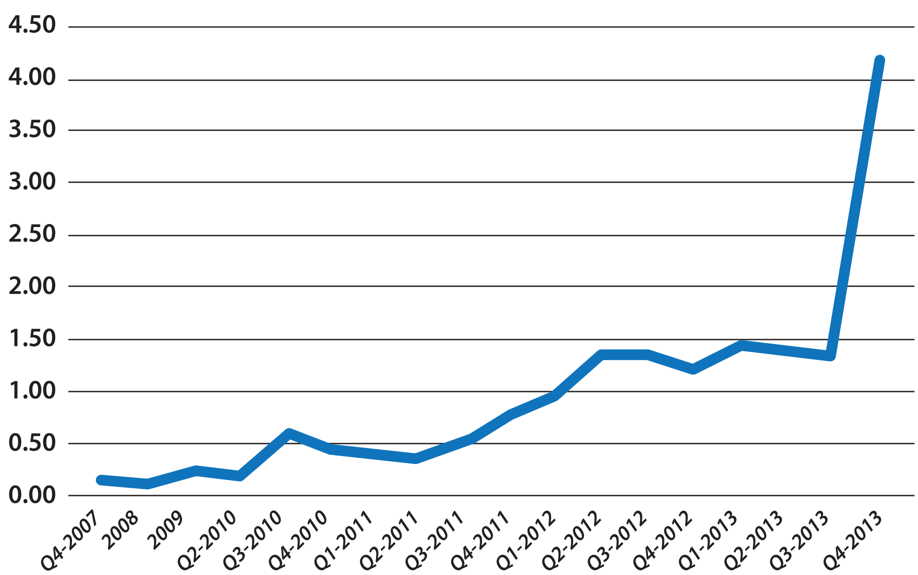
Solvency

Solvency explores the firm's ability to carry debt through building equity and asset reserves. This aspect relates closely to the firm's ability to ride out unexpected short-term changes in the market or other business challenges and to move quickly to pursue unexpected opportunities. A stronger solvency position allows the firm to attract more favorable funding terms from lenders and business support agencies as they view the firm being at lower risk of failure.

Solvency is typically measured from the balance sheet relationships of debt/assets. Lower debt/asset ratios suggest a stronger solvency position. A comparison of debt/asset ratios for Grasshoppers with other produce wholesalers is presented in Figure 4.

Debt management was clearly a substantial challenge for Grasshoppers. The food hub business differs somewhat in product scope from produce wholesalers, and food hubs are almost all in a startup phase, but given the similar emphasis on fresh products, the average D/A ratio for these wholesalers was 0.61; essentially $0.61 in liabilities for each $1 of assets. The D/A ratio for food hubs within the NGFN benchmarking report was even lower, 0.43. Net worth, or owner's equity, is implicit in these solvency measures as either equity or debt has a claim on the

Figure 5. Grasshoppers loan balance to total assets ($loan per $1total assets)



organization's assets. Higher net worth means higher solvency—the organization is in a better financial position to weather short downturns in the market or to seize new opportunities that may require some quick investment. Food hubs in the 2012 NGFN data averaged a net worth of 57 percent. The 48 hubs reporting to NGFN in 2013 averaged a net worth of 68 percent—levels approximating those observed in the small scale commercial wholesale operations. Grasshoppers carried a negative or near zero net worth (equity balance) for the final four years of operation—the value of the assets was not enough to cover the extent of the liabilities, to say nothing of having value to return to the initial equity of the starting producers and, later, the non-farm investors.

A big source of debt for Grasshoppers was the prepaid obligations for the CSAs. It appears that CSA revenues and obligations were extremely difficult for the firm to manage. In September 2010, prepaid CSA obligations were $125,344 of the $218, 490 in total liabilities (57%). There were not significant long-term loans being carried early on—small loans to the KADB and an Eclipse loan were carried initially, with a larger Brown Family Foundation loan added in 2011. Grasshopper routinely carried a negative equity balance and, with steady income losses, a negative balance in retained earnings. The initial capitalization by the growers was relatively small, less than $30,000, and not really adequate to capitalize the assets required for the growth being pursued. Efforts to generate additional equity were pursued in 2011 through the sale of $142,000 in Series A equity bonds. These contributions certainly helped the solvency position of Grasshoppers, but the positive equity balance was short-lived.

Figure 6. Sales to total assets, fixed assets ($sales per $1 total or fixed assets)

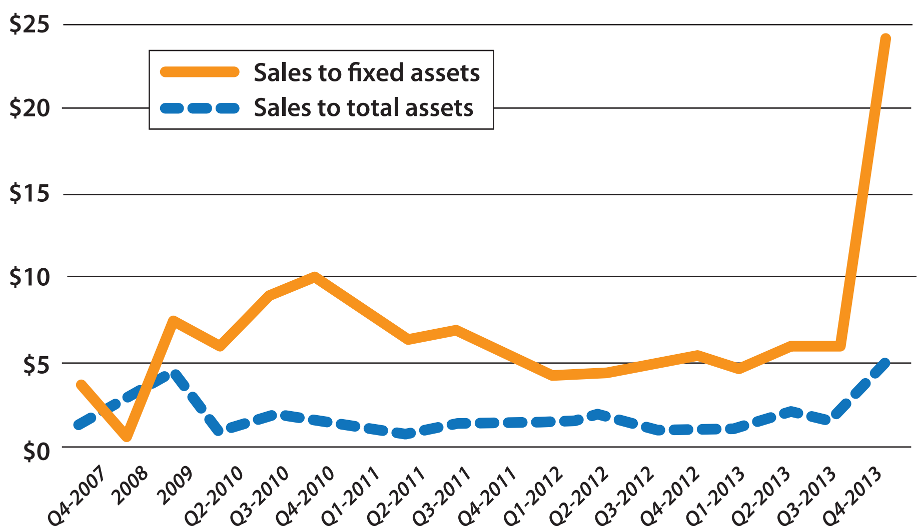
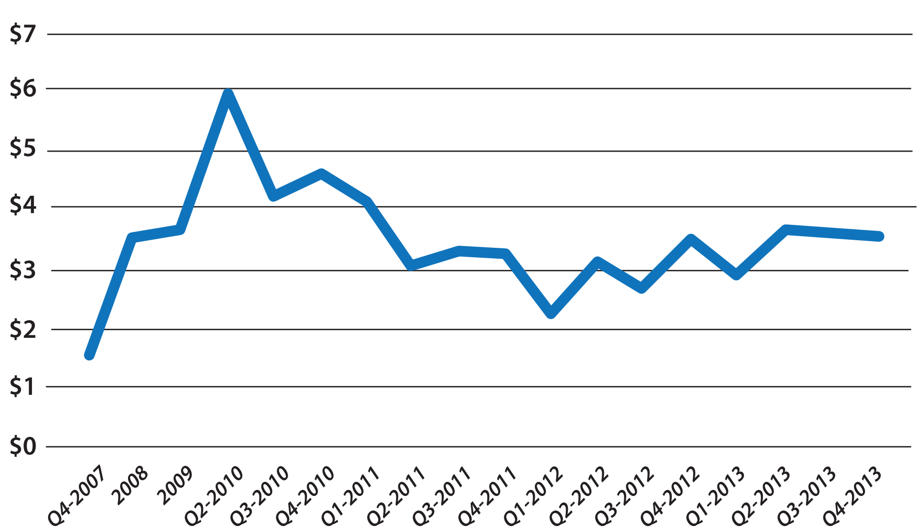


Figure 7. Grasshoppers sales to labor expense ($ sales per $1 in labor expenses)



Additional long-term loans were added to the books that included a new $200,000 note from the KADB, a $25,000 loan from a private investor, and a $50,000 loan from the Wholesome Wave Foundation. The loan terms were generally favorable; the additional long-term interest obligations were not presenting significant challenges. This access to low-interest funding seems somewhat common for many food hubs based on the NGFN benchmarking study. Still, the debt has to be repaid and the shift in ownership of the assets initially from the growers that started the venture to the lenders and new outside equity interests certainly gave rise to changes in management control. Continued negative net income following these loans only made the solvency situation more tenuous. Figure 5 shows the progression of loan debt to total assets carried by Grasshoppers—growing to a point where the firm carried $1.30-$1.40 in loan obligations for each $1 in assets. This situation makes the firm an extremely risky venture for consideration of additional loans to pursue new markets or weather difficult short-term events.

Liquidation of the assets at the end was not nearly enough to pay back the loans or return anything on the investments from the growers or Series A equity bonds.

Efficiency

Efficiency ratios explore the performance of assets generating sales and profits for the firm. Implicit in efficiency measures are the idea that associated resources of management, learning, and technology can favorably influence efficiency ratios over time. Experience leads to less waste, eliminates redundancy, and builds on transaction economies gained over time from market relationships. There are many efficiency ratios common to financial statement analysis. We explore sales/total assets, sales/fixed assets, and sales/labor expenses, all common measures of asset and labor efficiency.

Asset Efficiency

Asset efficiency explores trends in sales or profits per unit input, ideally hoping to see some general increases in these ratios due to management, learning efficiencies, and marketing spillover effects over time. Sales per dollar of assets and fixed assets, as well as sales per dollar of labor input, were examined over the life of the business and are presented in Figures 6 and 7.

There appears to be some evidence of improvement in efficiency very earlyin 2010 but decreased efficiency in the following years. Five managers, regular employee turnover, and unfocused sales targets may have contributed to this situation. Grasshoppers never carried a very large asset base for its size, choosing instead to lease space and equipment. Even the effort to move into small scale processing on-site was outsourced toward the end of the venture.

Labor Efficiency

The NGFN benchmark study reported an average of 5.2 FTE employees per food hub and sales per employee of $286,788. This average is very close to the staff employed by Grasshoppers—generally carrying a general manager, two warehouse/delivery staff, a sales/marketing person, and part-time book-keeping. Volunteers were used widely, especially initially, but somewhat less as management and ownership changed hands, which may explain part of the decline in sales/labor. It's a little difficult to extract the actual sales per FTE from the financial data. Table 2 provides a range based on 3.5-5.0 equivalent FTEs and shows the steady growth realized by Grasshoppers over time, including on a per-employee basis. While some seasonal inefficiencies may have been present throughout the life of the venture, Grasshoppers did not take on a lot of excess labor, nor did they pay outlandishly. Unfortunately, the more telling ratio, profit/employee, was never positive. Simple growth in sales means little toward becoming a viable going concern if it's not eventually being translated into profit.

Table 2. Sales per FTE employee for Grasshoppers

Year	Sales per FTE Employee
2007	$8,009-$11,442
2008	$60,230-$86,042
2009	$97,240-$138,915
2010	$110,206-$157,437
2011	$178,843-$255,491
2012	$182-959-261,371
2013	$192,611-$275,159

Note: The NGFN 2014 benchmarking study reports revenue per worker equivalent for 2012 (18 hubs) at $286,788 and for 2013 $432,872 (48 hubs) and product sales per employee in 2013 at $387,204.

Profitability

The financial health of any venture ultimately rests on its long-term ability to generate sales above its expenses. Both produce wholesaling and food hub ventures tend to be relatively low-margin propositions. SE produce wholesalers reported an average of 3.37 percent for EBITDA and 2.66 percent Net Income. Food hubs in the NGFN study reported an average 3 percent Net Income loss, although the median reported was 5 percent. The NGFN study does not report EBITDA for the food hubs, but based on the observations for Grasshoppers, a lot happens to adjust these values beyond Net Ordinary Income to Net Income—especially accounting for grant income. The NGFN Food Hub Benchmarking Study reports 9 percent of total revenue coming from grants/contributions. This amount is actually quite a lot when considering the narrow margins generally observed in this business.

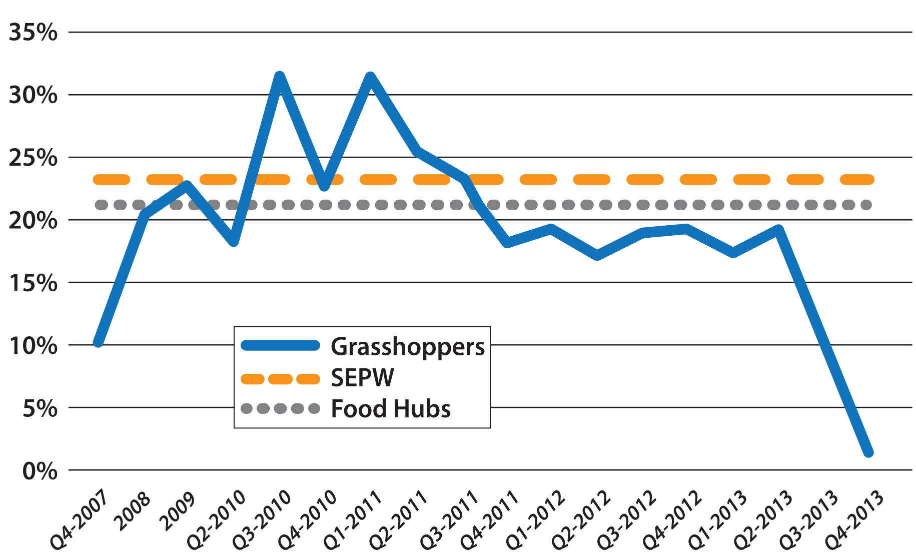
Income/Sales

Presenting income proportional to sales is the most common measure of profitability. The EBITDA, or Net Ordinary Income, was consistently double-digit negative initially, although improving over 2007-2011; the positive net incomes in 2007 and 2008 came substantially from other grant income (Table 3).

Table 3. Income to sales ratios for Grasshoppers, 2007-2013

	EBITDA	Net Income
2007	-181.2%	28.9%
2008	-36.0%	16.1%
2009	-25.4%	-18.5%
2010	-8.8%	-11.5%
2011	-6.4%	-7.1%
2012	-18.7%	-6.5%
2013	-13.5%	-10.4%

Figure 8. Gross margin (Grasshoppers vs SEPW and NFGN hubs)



Income/Assets

Return on assets (ROA) examines the profits each dollar of assets is able to generate for a firm. The goal of assets is to generate not only sales but profits as assets are secured through both equity contributions and loans. ROA for small-to-medium SE produce companies for the previous five years averaged 12.27 percent. No ROA was provided in the NGFN study. This metric is important, especially given that some food hubs may mirror Grasshoppers by receiving significant grant assistance to create an initial asset base. Table 4 summarizes the ROA for Grasshoppers for Ordinary Net Income and Net Income (including grants and other income). The ROA values suggest relatively high losses given the asset base.

Table 4. Return on assets for Grasshoppers distribution, 2007-2013

	EBITDA/ Assets	Net Income/ Assets
2007	-219.8%	35.0%
2008	-88.9%	39.7%
2009	-119.9%	-87.2%
2010	-39.8%	-52.0%
2011	-38.1%	-42.4%
2012	-67.6%	-23.5%
2013	-82.7%	-63.7%

Gross Margin

Gross margin represents the sales less cost of goods sold (COGS). Firms with a strong market, differentiated product, or loyal customer base can often capture higher gross margins, sales above the COGS. The gross margin also reflects the type of market a firm engages. A lower gross margin doesn't preclude profitability, but it suggests the firm will have to pursue volume sales and well-managed overhead expenses to generate profits.

Gross margins for SE produce firms averaged 23.34 percent for the previous five years. Gross margins for food hubs in 2012 averaged a comparable 21.33 percent (reported by NGFN as 14.49% for hubs reporting in 2013). Gross margins for Grasshoppers were generally comparable with these other firms, although slightly below 20 percent as sales expanded in 2011, summarized in Figure 8. Later managers pointed to difficulty finding higher margin clients and grew sales through wholesale and farm-to-school accounts, with potentially adverse effects on the overall gross margin.

Summary Observations from the Ratio Analysis

- Growth in debt and even involvement in grant programs changed the financial control of the firm. Producers had less and less opportunity to direct the entity as continued losses required them to have to seek outside funding to cover operating costs.
- The solvency position steadily eroded. This erosion placed Grasshoppers in a difficult position as they sought to pursue new growth and market opportunities.
- Ordinary net income—revenue from the sales of products less cash expenses—were always negative. This situation necessarily led to erosion of equity in the firm and the eventual closure of the business.
- Outside grant funding and creative equity financing were not sufficient to cover the ordinary net income deficits. Support for the public good dimensions was either not enough or the management and marketing challenges were too difficult to overcome to allow Grasshoppers to be a viable going concern.

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