A Manager’s Guide to Food Hub Finances

How to Evaluate and Improve Your Food Hub Operations
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Section 1: Introduction

The purpose of this guide is to explore how food hubs can use their own financial data to identify and address the strengths and challenges in their operation. Relying on data that most food hubs already have available in their financial records, we show how financial metrics can be used by managers to identify problems and risks and make decisions.

Section 1, the Introduction, gives a brief explanation of the methods used to gather information for the guide.

Section 2, Financial Statements at a Glance, offers a basic introduction to looking at financial statements, while showing examples.

Section 3, Using Benchmarks and Financial Data, discusses different approaches to benchmarking, and how financial data might be adjusted to gain a more accurate picture of the business.

Section 4, an Overview of Key Measures and How to Use Them, gives a detailed overview of financial metrics for liquidity/cash flow, efficiency, profitability and solvency. To help readers become familiar with the metrics, we include examples from food hubs experiencing commonplace problems.

Section 5, Spotlight on Common Challenges, discusses several cross-cutting issues that emerged in our case studies, how they affect the key metrics, and how they can be addressed.

Section 6, Tips on Recordkeeping, provides recommendations for how to keep records that can be interpreted quickly and easily. This section also discusses how to “close the books” at the end of each accounting period.

Section 7, Conclusion and What’s Next?, offers some suggestions about getting started with self-measurement.

Acknowledgements

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- Georgeanne Artz, Department of Economics, Iowa State University
- Jeff Farbman and William Gray, Wallace Center at Winrock International

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- Jen Hawse, Relay Foods
- Susan Futrell, Red Tomato
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- Kate Danaher, RSF Social Finance

We are very grateful to the managers of the four food hubs around the US who participated in our financial case studies, whose identity is confidential. We are also indebted to the members of the Food Hub Managers Working Group in Iowa, who helped us to test out our Excel tool for calculating food hub metrics.

Finally, we wish to thank the Wallace Center at Winrock International and the WalMart Foundation, who generously contributed funding support to this project.
The Methods Behind The Guide

The information we present is based on three sources:

- A review of literature, conference session recordings and other resources on financial evaluation of food hubs, wholesale businesses, and small businesses.
- Four detailed case studies using financial statements from actual food hubs
- Interviews and input from more than 18 food hub managers and 4 service providers who frequently work with food hubs.

The food hubs in our case studies were selected from more than 260 businesses listed in the US Department of Agriculture’s 2014 Working List of Food Hubs. Before beginning the study, we visited and interviewed 11 food hubs about their financial practices. Based on a set of criteria, four hubs were then invited to participate in case studies. The criteria included: age of 3–11 years; products limited to local food; direct handling and aggregation of product; at least some wholesale marketing; evidence of a profit motive or desire to break even; ability to supply 3+ years of detailed financial statements; variation in business structure (nonprofit, cooperative, LLC, etc.); and geographic spread within the United States. All four of the invited hubs agreed to participate.

Each food hub provided 3–5 years’ worth of annual income statements and balance sheets, as well as information about the company’s history, business plan, budgets, loan terms, and staff compensation. In total, each case study hub provided about 6–10 hours of staff interview time to the project. Interview data were used to place each food hub’s financial analysis in the context of its history of growth and to determine how the numerical data aligned or did not align with concerns and challenges expressed by the food hub managers. Each food hub received a detailed report analyzing its key metrics (as listed in Appendix A) and was asked to provide feedback.

To maintain confidentiality, the identities of the case study hubs are not divulged in this guide. However, our recommendations and fictional food hub examples are based on the challenges experienced by actual hubs we interviewed.

How We Decided What to Measure

Before analyzing food hub financial data, a review was conducted to identify financial benchmarks appropriate for local food hubs. We sought to answer two questions: (1) Which financial ratios or performance measures should food hub managers be using to evaluate their business and make decisions? and (2) Which benchmarking data from other industries can be compared to the indicators from a food hub?

A variety of sources for benchmarking data were consulted, including data from the conventional grocery wholesale industry\(^1\), the conventional retail grocery industry\(^2\), the cooperative retail grocery industry\(^3\), the farming industry\(^4\), and reports on food hubs\(^5,6\). We also communicated about the metrics with service providers and business managers who are knowledgeable about food hub benchmarking, including Jeff Farbman and William Gray of the Wallace Center at Winrock International (VA); Robin Morris of Mad River Food Hub, L3C (VT); Jen Hawse of Firsthand Foods (NC); Jesse Singerman of Prairie Ventures, LLC (IA); Kate Danaher of RSF Social Finance (CA); and Erin Pirro of Farm Credit East (an author of the Food Hub Benchmarking Study; CT).

Based on our research, we chose a set of key financial measures to use in the case studies, and created a template for food hubs to analyze their operations. For comparison purposes, numerical benchmarking data from the conventional wholesale, conventional retail, and food hub industries are included in the template. (See Appendix A.)

We analyzed each food hub’s data in several ways, using: (1) a financial summary that provided contextual information about the food hub’s size, gross margin, expenses and revenue sources; (2) a table of key metrics calculated for the food hub (Appendix A); and (3) other analyses specific to each food hub’s needs and challenges, including top five operating expenses, labor structure, and staff wage comparisons.
Section 2: Financial Statements at a Glance: Snapshot of a (Fictional) Food Hub

This section provides a basic overview on reading financial statements “at a glance,” using examples from an imaginary food hub, Pete’s Produce. Pete’s Produce is a for-profit food hub that takes ownership of products. In later examples, we also will refer to a second imaginary hub, The Golden Bean, which is a cooperative food hub. Both are “hybrid” hubs that operate wholesale as well as direct-to-consumer food box programs, and both take ownership of products. Neither Pete’s Produce nor The Golden Bean represents any particular real-life food hub, but both display challenges and characteristics that appear among the hubs we studied.

Important financial statements and reports for business analysis include:

- The profit and loss or income statement
- The balance sheet or statement of assets
- The statement of cash flows, and
- Reports of aged accounts aging and accounts receivable aging

For Pete’s Produce, we will take a closer look at each type of statement.

Reading a Balance Sheet (or Statement of Net Assets)

The balance sheet is a snapshot of the business’ financial position (“worth”) at a particular point in time. It shows the company’s assets, its liabilities (what it owes to lenders and creditors), and its equity or net assets (the portion of assets actually owned by the business owners). For food hubs, seasonal fluctuations in sales volumes affect the amount of cash, inventory, accounts receivable, and accounts payable that appear on the balance sheet. So it is recommended that managers look at monthly balance sheets throughout the year to gain a more realistic picture of what is happening seasonally.

Questions to consider when looking at the balance sheet (adapted from Wholesome Wave’s Food Business Assessment Toolkit):

- Does the balance sheet actually balance? (Do assets = liability + equity?)
- What are the business’ core assets? What’s the split between current assets and long-term assets? How does this compare to previous years?
- What is the breakdown of liabilities? What is the split between short-term and long-term debt, and how has that changed over time?
- How do the current assets compare to current liabilities?

Words, Words, Words

People in the non-profit and for-profit worlds sometimes use different accounting words to refer to similar financial principles. This is because of the legal differences between non-profits and for-profits. For example, most for-profit businesspeople would say that income minus expenses equals profit, while a non-profit manager would call it net income. Even though they are the calculated in basically the same way, the net income earned by non-profits cannot be called “profit” because it does not belong to owners or shareholders; it must be reinvested in charitable activities. Similarly, for-profits would say that assets minus liabilities equal equity, while a non-profit would call the same thing net assets. A non-profit’s net assets are not technically “equity” because they belong to the public sphere, not to private individuals. In this guide we tend to use both sets of terms interchangeably, but it’s important to understand that there are subtle differences.

<table>
<thead>
<tr>
<th>For-profit</th>
<th>Nonprofit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>Net assets</td>
</tr>
<tr>
<td>Profit</td>
<td>Net income</td>
</tr>
<tr>
<td>Profit &amp; loss (p&amp;l) statement</td>
<td>Income statement</td>
</tr>
<tr>
<td>Balance sheet</td>
<td>Statement of assets</td>
</tr>
</tbody>
</table>
Is net income on the balance sheet consistent with the net income shown on the income statement?

Warning signs include:

- Negative equity balance
- Inventory not valued correctly or at all
- Low cash balances in bank accounts
- Significant debt financed with credit cards
- Very high accounts payable (suggesting the business is not paying its bills)
- Short-term debt used to finance long-term assets

**Balance sheet example:** What do you notice about the (simplified) balance sheet from Pete’s Produce (Table 1)? What strengths and weaknesses do you see right away?

Here are some strengths and weaknesses in the balance sheet for Pete’s Produce:

**Strengths:** Assets do balance with liabilities and equity. The business has a positive equity balance, with positive profit this year and some retained earnings from previous years. There is a positive cash balance in the checking account. Accounts payable don’t appear extremely high, suggesting that the food hub is paying its bills. The food hub also is tracking receivables separately for each program, which makes it possible to monitor how each program’s payment collection systems affect cash flow.

**Weaknesses:** This food hub has a small equity balance, meaning that it is highly leveraged and is at risk for insolvency if it experiences negative net income. (Having low or no equity is relatively common for food hubs in their early years, but equity should increase over time as the business grows.) Accounts receivable are significantly larger than accounts payable, so the food hub may be short on cash as a result of collecting payment from customers slowly. Current liabilities are larger than current assets, suggesting that the business has negative working capital; it does not have enough cash to pay its bills. Depreciation is very high relative

<table>
<thead>
<tr>
<th>ASSETS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Assets</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Checking/Savings</td>
<td>WSB Checking</td>
<td>$14,234</td>
</tr>
<tr>
<td>Accounts Receivable</td>
<td>Accounts Receivable – Wholesale</td>
<td>$45,353</td>
</tr>
<tr>
<td></td>
<td>Accounts Receivable – Food Box</td>
<td>$1,335</td>
</tr>
<tr>
<td>Total Accounts Receivable</td>
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<td>$46,688</td>
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<td>Inventory Asset</td>
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<td><strong>Total Current Assets</strong></td>
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<td>$63,162</td>
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<tr>
<td><strong>Fixed Assets</strong></td>
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<tr>
<td>Accumulated Depreciation</td>
<td></td>
<td>-$165,917</td>
</tr>
<tr>
<td>Computers and Software</td>
<td></td>
<td>$1,564</td>
</tr>
<tr>
<td>Equipment and Fixtures</td>
<td></td>
<td>$131,356</td>
</tr>
<tr>
<td>Leasehold Improvements</td>
<td></td>
<td>$12,467</td>
</tr>
<tr>
<td>Vehicles</td>
<td></td>
<td>$78,733</td>
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<tr>
<td><strong>Total Fixed Assets</strong></td>
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<td>$58,203</td>
</tr>
<tr>
<td><strong>TOTAL ASSETS</strong></td>
<td></td>
<td>$121,365</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>LIABILITIES</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current Liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts Payable</td>
<td></td>
<td>$28,433</td>
</tr>
<tr>
<td>Short-Term Loan</td>
<td></td>
<td>$20,000</td>
</tr>
<tr>
<td>Operating Line of Credit – WSB</td>
<td></td>
<td>$29,928</td>
</tr>
<tr>
<td><strong>Total Current Liabilities</strong></td>
<td></td>
<td>$78,361</td>
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<tr>
<td><strong>Long-Term Liabilities</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck loan</td>
<td></td>
<td>$19,480</td>
</tr>
<tr>
<td><strong>Total Long-Term Liabilities</strong></td>
<td></td>
<td>$19,480</td>
</tr>
<tr>
<td><strong>Total Liabilities</strong></td>
<td></td>
<td>$97,841</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EQUITY</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Retained Earnings (previous years)</td>
<td></td>
<td>$9,430</td>
</tr>
<tr>
<td>Shareholder Distributions</td>
<td></td>
<td>-$5,460</td>
</tr>
<tr>
<td>Net Income (current year)</td>
<td></td>
<td>$19,554</td>
</tr>
<tr>
<td><strong>Total Equity</strong></td>
<td></td>
<td>$23,524</td>
</tr>
<tr>
<td><strong>TOTAL LIABILITIES AND EQUITY</strong></td>
<td></td>
<td>$121,365</td>
</tr>
</tbody>
</table>
to the value of fixed assets, which either means that
the hub's equipment and facilities are old (and will
eventually need to be replaced) or that the food hub is
undervaluing its assets.

One might have the following questions about Pete's
Produce:

- Why does the company have low equity? What
  has been happening over time to contribute to or
  subtract from equity? How might this situation be
  improved?

- How do current assets vary seasonally? Are there
times of year when the food hub's working capital
is especially constrained? If so, what is being done
or could be done to address this? (See metrics:
  current ratio and working capital as % of sales.)

- Why are accounts receivable (especially for the
  wholesale program) so large relative to accounts
  payable? How is this discrepancy affecting cash
  flow? How can accounts receivable be managed
  so that they have more favorable cash flow
  implications? (See metrics: days receivable, days
  payable and cash conversion cycle.)

- How productive are the fixed, physical assets
  that the business owns? To what extent are they
  contributing to its profitability? (See metrics: asset
  turnover and return on assets.)

- Does the business have sufficient cash flow to pay
  its debts and run its operations throughout the
  year? (See metric: debt service coverage ratio.)

Most of these questions can be addressed with the
financial metrics discussed later in this guide.

Reading a Profit and Loss
Statement (or Income Statement)

The income statement, also called a profit and loss
statement, shows a business' revenues, expenses, and net
income (which is the difference between revenue and
expenses) over a specific time period. Income statements
should be reviewed by managers on at least a monthly
basis.

Questions to consider when looking at an income
statement (adapted from Wholesome Wave):

- What are core components of sales, costs, and
  expenses?
- What are the gross margin and net income?
- What are the trends in components of sales and
  expenses?
- What are the projections for sales, and how do
  expenses compare?
- Is the business using accrual or cash-basis
  accounting?

Warning signs:

- Persistently negative net income over time
- Low growth compared to same month in previous
  year
- Periods of time during the year with little or no
  incoming revenue

Income statement example: Again, what do you notice
about the (very simplified) income statement from Pete's
Produce (Table 2)? Which strengths and weaknesses are
evident? After looking at their income statement, what
questions do you have?
One might notice the following:

**Strengths**: Net income matches the net income shown for the same year on the balance sheet. There is positive net income and a large gross margin on retail. Multiple revenue centers may each offer different benefits in terms of profitability, risk management and cash flow. Total income within the range of $1–1.4 million is consistent with the minimum that most experts consider necessary for a food hub to break even. Interest expenses are relatively low. The business is also tracking COGS, revenue, and write-offs separately for each program — an important practice to assist program-by-program analysis.

The top of the income statement shows that Pete’s Produce is using *accrual accounting* rather than *cash accounting*. Accrual accounting recognizes income and expenses at the time the goods or services are delivered or expenses are incurred. Cash accounting, on the other hand, recognizes income and expenses based on when cash is actually exchanged. Income statements based on accrual accounting are useful because they show the ebbs and flows of business expenses and income in the actual periods when they were generated, without considering billing terms or other factors that cause delays in payment. Mature businesses typically use accrual accounting because it gives a better picture of profitability during each accounting period. However, the income statement doesn’t show whether profit is translating into an influx of cash, which is why a *statement of cash flows* is needed as well.

**Weaknesses**: Net income is a very small percentage of revenue, not leaving much in reserve for future equipment replacement, unexpected expenses, etc. More than $8,000 in write-offs suggests there are problems collecting aged receivables from customers. It is not clear if processing, repacking, and inbound freight are included in *costs of goods sold*.

Here are some possible questions about Pete’s Produce:

- How do the net income and total revenue compare to growth targets in the business plan? (See metric: *sales vs. Forecast budget*.)

**Table 2**

<table>
<thead>
<tr>
<th>Pete’s Produce — Profit and Loss Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Accrual Basis</em></td>
</tr>
<tr>
<td><em>January 1 through December 31, 2014</em></td>
</tr>
</tbody>
</table>

**Income**

<table>
<thead>
<tr>
<th>Revenue Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct-to-Consumer Revenue</td>
<td>$138,350</td>
</tr>
<tr>
<td>Wholesale Revenue</td>
<td>$1,268,368</td>
</tr>
<tr>
<td>Delivery Revenue</td>
<td>$5,325</td>
</tr>
<tr>
<td><strong>Total Income</strong></td>
<td><strong>$1,412,043</strong></td>
</tr>
</tbody>
</table>

**Cost of Goods Sold (COGS)**

<table>
<thead>
<tr>
<th>Cost Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Box COGS</td>
<td>$81,304</td>
</tr>
<tr>
<td>Wholesale COGS</td>
<td>$996,440</td>
</tr>
<tr>
<td>Inventory Adjustment (shrink)</td>
<td>$2,430</td>
</tr>
<tr>
<td><strong>Total COGS</strong></td>
<td><strong>$1,080,174</strong></td>
</tr>
</tbody>
</table>

**Gross Profit**

|                   | $331,869  |

**Expense**

<table>
<thead>
<tr>
<th>Expense Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Card Processing Charges</td>
<td>$7,380</td>
</tr>
<tr>
<td>Depreciation</td>
<td>$27,157</td>
</tr>
<tr>
<td>Insurance</td>
<td>$2,404</td>
</tr>
<tr>
<td>Interest</td>
<td>$2,412</td>
</tr>
<tr>
<td>Marketing</td>
<td>$4,302</td>
</tr>
<tr>
<td>Occupancy Costs</td>
<td>$31,403</td>
</tr>
<tr>
<td>Office Expense</td>
<td>$5,430</td>
</tr>
<tr>
<td>Packaging</td>
<td>$6,430</td>
</tr>
<tr>
<td>Payroll Expense</td>
<td>$172,404</td>
</tr>
<tr>
<td>Professional Services</td>
<td>$4,303</td>
</tr>
<tr>
<td>Vehicle Expenses</td>
<td>$40,045</td>
</tr>
<tr>
<td>Write-offs – Direct to Consumer</td>
<td>$7,343</td>
</tr>
<tr>
<td>Write-offs – Wholesale</td>
<td>$1,302</td>
</tr>
<tr>
<td><strong>Total Expense</strong></td>
<td><strong>$312,315</strong></td>
</tr>
</tbody>
</table>

**Net Income**

|                    | **$19,554** |

- Which expenses are growing the most over time, and which ones deserve the most attention? (See metrics: *gross margin* and *variable costs of sales by program*.)
- How do each of the food hub’s programs (direct-to-consumer and wholesale) contribute to its overall profitability? Which program is contributing the largest margin to the business after variable costs
are subtracted? (See metrics: gross margin and variable costs of sales by program.)

• How do the prices and margins received by the food hub compare to its targets? Are there some programs or product lines that are not meeting targets for gross margin? (See metric: gross margin.)

• How efficiently is the food hub using labor to generate revenues? Is labor efficiency part of a strategy to be able to pay its workers a fair wage? Are staff making more or less than they would make in a similar job at another business? (See metric: labor to sales ratio, and Section 5 discussion on staff compensation.)

• Is the food hub’s income sufficient to cover its debt obligations? Is the business able to pay bills on time? (See metric: debt service coverage ratio.)

Again, these questions can be addressed with some basic analysis of financial metrics to be considered later.

### Reading a Cash Flow Statement

The cash flow statement shows changes in the amount of cash held by a business over a period of time. It summarizes cash flowing in, cash flowing out, and the overall change in available cash over the course of the period. It is important because ultimately only cash pays the bills! To understand and plan for seasonal variations in your business’ cash availability, it is useful to look at monthly or quarterly cash flow statements.

A cash flow statement has three sections, showing the cash flow implications of operating activities, investment activities, and financing activities. The first section, operating activities, displays changes in available cash due to inflows or outflows of profit. In a cash flow statement from Quickbooks™, the operating activities section usually shows the net income (profit) over a particular time period, then adjusts for changes in accounts payable, accounts receivable, and inventory, because these affect how much of the profit from operations is available as cash.

The second section, investing activities, shows changes in available cash due to the purchase or sale of equipment, land or bonds. The third section, financing activities, shows changes in available cash due to owner or investor contributions, loans obtained, principal payments made, or dividends paid. Such transactions are neither revenue nor expenses, but they clearly affect cash availability.

At the bottom of the statement, the “net cash increase” line shows the overall change in cash, which is the sum of cash inflows and outflows from all three types of activities.

It is important to note that a business could be making positive net income or profit, but experiencing negative net cash flow. This could happen, for example, if the business was making large principal payments on a loan, or if it made a large cash outlay to purchase a piece of equipment.

Questions to consider when looking at a cash flow statement (adapted from Wholesome Wave):

1. What is causing cash fluctuations at different times of year?
2. During which months is available cash lowest and highest?
3. Does the business generate enough cash in the peak season to pay for expenses during the low season?
4. Is there a sufficient cash cushion to protect the business if an unexpected event reduces normal cash flow?
5. Over time, are cash balances increasing or decreasing?

Warning signs:

- Frequent negative cash balances from operations
- Debt repayments not being made (if the hub has debts)

### Cash flow statement example:

The sample statement from Pete’s Produce (Table 3) covers the month of June 2014. What do you notice? What questions do you have?

One might notice the following:

**Strengths:** There was a net cash increase during the period. The food hub increased available cash in its operating activities by showing positive net income, decreasing accounts receivable (getting customers to pay bills), decreasing inventory (converting it into cash)
and increasing accounts payable. Financing activities also produced a cash increase because the company took out a short-term loan, which more than balanced out the negative cash flow from paying shareholder distributions. Investing activities decreased available cash because the business paid for shelving and a truck. However, the increase in cash from operating activities and financing activities was greater than the decrease in cash from investing activities. So overall, available cash was greater at the end of the month than at the beginning of the month. Moreover, the “cash at the end of the period” line shows that Pete’s Produce ended the month with a positive cash balance.

Weaknesses: The cash balance at the end of the period may be too small to cushion the food hub against unexpected shortfalls in cash flow that might occur.

Potential questions:

- Will the hub be able to pay off its short-term loan?
- How does cash flow look different during the low season — e.g., February or March? Is net cash flow negative during that time?
- What was the short-term loan for? Was it used to meet short-term obligations (an appropriate use) or was it used to pay for the investments in fixed assets that have a longer life than the loan (potentially risky)?
- If cash flow is negative during the low season, is it balanced out by positive cash flows during the high season?

The key metrics: The Cash Flow and Liquidity section in this guide discusses tools for monitoring cash flow, including days payable, days receivable, days in inventory and the cash conversion cycle.

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### Table 3

**Pete’s Produce — Statement of Cash Flow**

*June 1 - 30, 2014*

<table>
<thead>
<tr>
<th>OPERATING ACTIVITIES*</th>
<th>Net Income</th>
<th>$3,239</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjustments to reconcile net income to net cash provided by operations:</td>
<td>Accounts receivable</td>
<td>-$2,390</td>
</tr>
<tr>
<td></td>
<td>Inventory asset</td>
<td>$533</td>
</tr>
<tr>
<td></td>
<td>Accounts payable</td>
<td>$378</td>
</tr>
<tr>
<td></td>
<td>Unemployment</td>
<td>$27</td>
</tr>
<tr>
<td></td>
<td>Payroll liabilities</td>
<td>$538</td>
</tr>
<tr>
<td>Net cash provided by operating activities*</td>
<td></td>
<td>$1,570</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INVESTING ACTIVITIES</th>
<th>Purchase/sale of fixed assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shelving (cash paid for purchase)</td>
<td>-$1,338</td>
</tr>
<tr>
<td>Equipment (cash paid for purchase)</td>
<td>-$7,000</td>
</tr>
<tr>
<td>Net cash from investing activities</td>
<td>-$8,338</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>FINANCING ACTIVITIES</th>
<th>Short-term loans</th>
<th>$8,650</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shareholder distributions</td>
<td>-$1,273</td>
<td></td>
</tr>
<tr>
<td>Net cash from financing activities</td>
<td>$7,886</td>
<td></td>
</tr>
</tbody>
</table>

**NET CASH INCREASE FOR THE PERIOD** | $1,118 |

**BEGINNING CASH** | $1,735 |

**CASH AT THE END OF THE PERIOD** | $2,853 |

---

* Note: The example above resembles a cash flow statement generated by Quickbooks™ or similar software. Because Quickbooks™ typically uses accrual accounting and not cash accounting, net income from operations has to be adjusted for accounts receivable, accounts payable, inventory, etc., to find the net cash flow from operations. Some cash flow statements use an alternative format, unlike the one above, in which the operating activities section reflects cash rather than accrual accounting. In the alternative format, a breakdown of cash expenses and cash income is given; cash income is only shown when payments are received, and cash expenses are only shown when bills are paid. Cash expenses are subtracted from cash income to find net cash provided by operating activities, which ends up being mathematically the same as the bottom line item in the format above. With a cash accounting method, adjusting net income for accounts receivable, accounts payable, etc., is not necessary because net income is already shown in terms of net cash received.
Reading Accounts Payable Aging and Accounts Receivable Aging Reports

Accounts receivable aging reports show the age and dollar value of unpaid bills that are owed to a business at a particular point in time. Accounts payable aging reports show the age and dollar value of unpaid bills that the business owes to others. These reports are set up similarly to one another, and give more detailed information about the accounts payable and accounts receivable totals that appear on the balance sheet. They show the results of lags in billing and payment, which in turn impact cash flow.

A bill moves from the “current” to the “past due” columns of an A/R or A/P aging report once it has been owed for longer than the agreed-upon billing term. For example, if a customer has 15-day billing terms, their unpaid bill moves to the “1-30 day” column on the 16th day after the bill was issued.

When looking at accounts receivable aging reports, we ask:

- Are customers generally paying their bills on time, or are there large balances of “past due” receivables?
- Have customers with “past due” balances made recent purchases (i.e., do they also have Accounts Receivable that are current), or are some of them old or inactive accounts?
- Are there Accounts Receivable more than 90 days past due? Which ones and why?

Warning signs in accounts receivable aging:

- Older receivables that comprise a large portion of total Accounts Receivable
- A large volume of Accounts Receivable more than 90 days old, especially from customers who haven't recently made purchases or payments

When looking at accounts payable aging reports, ask:

- Is the business paying its bills on time, or is it showing “past due” payables?
- Are there accounts payable more than 60-90 days old? Which ones and why?

Warning signs in accounts payable aging:

- A large volume of “past due” Accounts Payable, suggesting the business is missing bill deadlines and may not have enough cash flow to pay its bills.

Accounts receivable aging report example: Take a look at the accounts receivable aging report for the wholesale customers of Pete’s Produce (Table 4). What strengths and weaknesses do you notice? What questions do you have?

One might note the following:

Strengths: Plenty of sales are being made. Most (but not all) customers who have balances past due are active customers.

Weaknesses: This food hub is clearly having trouble getting customers to pay bills in accordance with its billing terms. The $13,378 in receivables aged more than 90 days is a special cause for concern. Some of the accounts that have receivables aged more than 90 days are with customers who have not been active in a while, which may not bode well for the business’ ability to collect what it is owed. These may need to be written off as losses.

Questions remaining about accounts receivable at Pete’s Produce:

- What we do not see in the report are the billing terms for each customer. Are they long (e.g. more than 30 days) or short (7 days or fewer)? Overall, how quickly is the food hub collecting cash after purchasing goods and making sales?
- How do receivables compare to the total volume of sales? Relative to other businesses, do these figures mean the food hub is collecting payment quickly or slowly? (See metric: days receivable.)
- What can be done to collect accounts receivable more quickly? Are customers being sent statements regularly? Could the food hub require cash on delivery from chronic late payers? Is the food hub working with its institutional customers on ways to speed up payment, such as accepting credit cards or direct deposits?

Such questions will be discussed further in the Key Metrics: Cash Flow and Liquidity section of this guide.
We have seen that a quick look at financial statements can tell us a great deal about what is happening in a business. However, it does not answer all the questions we might have. The next section introduces ways in which food hubs can use financial ratios and metrics to dig deeper into their financial data.

Further resources on interpreting financial statements:

http://e145.stanford.edu/upload/Merrill_Lynch.pdf

Wholesome Wave: Food Hub Business Assessment Toolkit.

Fearless Farm Finances, a guide geared toward farmers.
https://mosesorganic.org/fearless-farm-finances

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Table 4

<table>
<thead>
<tr>
<th>Pete’s Produce — Accounts Receivable Aging</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>As of December 31, 2014</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current</strong></td>
<td><strong>Past Due</strong></td>
</tr>
<tr>
<td><strong>1 – 30</strong></td>
<td><strong>31 – 60</strong></td>
</tr>
<tr>
<td>Amazing Ice Cream</td>
<td>89.63</td>
</tr>
<tr>
<td>Apples to Apples</td>
<td>149.30</td>
</tr>
<tr>
<td>Bistro Le Petit-Chou</td>
<td>450.66</td>
</tr>
<tr>
<td>Clay River Co-op</td>
<td>1566.88</td>
</tr>
<tr>
<td>Dandy Food &amp; Wine</td>
<td>350.66</td>
</tr>
<tr>
<td>Edelweiss Café</td>
<td>464.34</td>
</tr>
<tr>
<td>Fork &amp; Spoon Diner</td>
<td>150.33</td>
</tr>
<tr>
<td>Green Apple Co-op</td>
<td>2,505.64</td>
</tr>
<tr>
<td>Ladybird Grocery</td>
<td></td>
</tr>
<tr>
<td>Monroe Cty Schools</td>
<td>1,505.95</td>
</tr>
<tr>
<td>Moore Cty Schools</td>
<td>425.00</td>
</tr>
<tr>
<td>Sam’s Food Service</td>
<td>4,038.30</td>
</tr>
<tr>
<td>Super Sandwiches</td>
<td>235.65</td>
</tr>
<tr>
<td>St. Charles Hospital</td>
<td></td>
</tr>
<tr>
<td>The Laughing Leek</td>
<td>78.60</td>
</tr>
<tr>
<td>Xenia Produce</td>
<td>1,315.69</td>
</tr>
<tr>
<td>Zippy’s Grocer</td>
<td>1605.22</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>14,931.85</td>
</tr>
</tbody>
</table>

(Note: We have not included an example of an Aged Accounts Payable report, since the method for interpreting the two types of statements is similar.)

§ § § §
Section 3: Using Benchmarks and Financial Data

Using Benchmarks: What to Measure Against

In general, managers have two options when evaluating their businesses. They can:

- Compare themselves to others, using benchmark figures from related industries (which we provide in Appendix A) or from individual companies.
- Compare themselves to themselves specifically:
  - Comparing present performance to past performance, e.g., to previous months or to the same month in the previous year, and
  - Comparing present performance to goals and targets in their business plan.

Because every food hub’s business model is unique, hub managers (rightly) tend to focus on evaluating their business against past performance and targets, rather than against industry averages. However, benchmarks from other businesses may give managers an idea of what goals to aim for in the future.

In this guide we provide a suggested set of metrics and benchmarks for food hubs to use — but businesses should also be measuring progress toward the goals and targets in their own business plans. Any plan for self-evaluation should keep your existing goals in view.

Using Benchmarks: How Often to Measure

Clearly, some business measures should be reviewed more often than others. For example, aged receivables, days receivables, and working capital usually are monitored on an ongoing basis so that the business can take action if it isn’t meeting its cash flow needs.

Achieved gross margin should be monitored frequently to make sure that the relationship between sale prices and COGS remains acceptable. Measures based on long-term or total assets and equity, on the other hand, provide a bigger-picture sense of the business, and may only need to be monitored quarterly or annually.

The template of metrics (Appendix A) contains suggestions for how often to calculate each food hub measure.

Adjusting Financial Data

When analyzing food hubs for case studies, we make several adjustments. You may wish to make similar adjustments when analyzing your own statements, or better yet, to modify your recordkeeping system so that adjustments are not needed.

Accrual adjustments: If the business was operating on a cash basis, accrual adjustments were made to the income statement so that revenues were recognized in the same period as the expenses that helped generate them. Adjustments are made as follows:

Adjustments to total revenue:

\[
\text{Total revenue (cash basis)} + \text{change in accounts receivable (beginning to end of current period)} + \text{change in inventory (beginning to end of current period)} = \text{total revenue (accrual basis)}
\]

Adjustments to total expenses:

\[
\text{Total expenses (cash basis)} + \text{change in accounts payable (beginning to end of current period)} + \text{change in outstanding taxes and interest (beginning to end of current period)} = \text{total expenses (accrual basis)}
\]

Depreciation: To be consistent with the methodology of the Food Hub Benchmarking Study, we use straight-line depreciation for all depreciable assets. The value of vehicles is depreciated over seven years:

\[
\text{Annual depreciation} = \text{vehicle purchase price} ÷ 7 \text{ yrs}
\]

\[
\text{Vehicle value this year} = \text{Vehicle value last year} – \text{annual depreciation}
\]

Similarly, facilities and infrastructure are depreciated over 15 years. This requires adjustments to both the income statement (to the depreciation line item) and the balance sheet (to the values of each depreciable asset). It results in higher asset valuations and lower depreciation expenses than what most hubs report in their financial statements. This is probably because food hubs tend to use IRS depreciation schedules, which often to over-
Depreciate assets relative to their actual market value in the first few years of ownership.

Values of other assets such as computers and furniture also are typically depreciated over time, but we do not make depreciation adjustments for these items because their initial value usually is not very high.

**Transforming brokerage-model data into ownership-model format:** If a food hub is using a brokerage model and not taking ownership of product, we view the brokerage fee as a gross margin and treat the dollars passed directly to farmers as costs of goods sold. This makes it possible to compare metrics from brokerage-model hubs to those of ownership-model hubs in “apples-to-apples” fashion.

**Charitable income:** If a food hub receives significant grant funds or charitable dollars, we calculate the food hub's metrics both with and without charitable funding. This makes it possible to see the impact of charitable funding on the business’ financial health.

**Costs of goods sold:** By our definition, costs of goods sold includes the cost of actual products, processing for those products, inbound freight costs incurred by the food hub to pick up or process the products, and any costs of repackaging products into appropriate containers. Costs of putting items into a box or pallet to fill an order would not be included in costs of goods sold, but costs of repackaging a 5-lb. bag of spinach into individual ½-lb. bags would be included in COGS. Where necessary, we rearrange expenses in the income statement so that costs of goods sold meet this definition.

**Including all relevant assets and equity:** Sometimes, a business may be using assets that belong to one of the owners of the business. For example, a business may be renting equipment from one of its owners. In calculating financial ratios, it sometimes makes sense to treat this equipment as an asset of the business. Or, the business may have a loan from one of the owners that does not need to be paid off in a specified period of time. In calculating ratios, it may be more accurate to treat this loan as owner equity (contributed capital) rather than as a liability.

**Non-food hub activities:** If a business conducts activities not directly involved in local food aggregation and distribution, such as running a farm or a sizable educational program, we suggest excluding the income and expenses associated with these activities from financial analysis.

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**Section 4: Overview of Key Metrics and How to Use Them**

**Key Metrics: Cash Flow and Liquidity**

Cash flow and liquidity are essential to the day-to-day operations of a food hub. Because food hub businesses are seasonal in nature and tend to start with little capital, they often find it hard to generate enough cash flow throughout the year. It is important to measure cash flow and liquidity metrics frequently, and to plan for seasonal ebbs and flows. In this section, we consider metrics related to cash flow, or the amount of money available to pay bills. We also consider liquidity, or the ability of the business to pay current debts without liquidating long-term assets. The following metrics are used:

- **Days receivable**
- **Days in inventory**
- **Days payable outstanding**
- **Current ratio**
- **Working capital**

One overall way to measure cash flow is by looking at the **cash conversion cycle (CCC)**, which measures how long it takes to convert the cost of goods purchased from farmers (costs of goods sold) into cash from sales. The CCC is calculated from **days receivable** (DR: average number of days that receivables are outstanding), **days in inventory** (DI: the average number of days that items stay in inventory) and **days payable outstanding** (DPO: the average number of days that payables are outstanding), as follows:

\[
\text{Days receivable} + \text{days in inventory} - \text{days payable outstanding} = \text{days in CCC}
\]

The shorter the cash conversion cycle, the more cash the food hub will have available to finance the costs.
of its own growth. A short CCC means that cash flow is keeping pace with the sales growth of the business, rather than lagging behind. This increases the food hub’s ability to self-finance its growth using its own cash, often at zero interest.

As we will demonstrate, the components of the cash conversion cycle should also be looked at individually. For example, if days receivable are lower than benchmarks, then the food hub is doing better than others in the food industry at setting and enforcing favorable (i.e., short) billing terms for its customers. If days payable are lower than benchmarks, then the food hub is paying its vendors more quickly than other businesses, which probably fits the food hub’s mission but can be problematic for cash flow. If a hub’s days payable are longer than its days receivable, then the business’ billing practices are translating into positive cash flow, shortening the cash conversion cycle.

To measure liquidity in general, we use the current ratio, which shows the degree to which the food hub can cover its short-term debt and other short-term liabilities without selling off its fixed assets.

We also look at working capital, which measures the actual dollar value of liquid assets available to build the business. The dollar value of working capital matters because it’s possible for a business with few assets to have a high current ratio but almost no actual working capital. (This would be true, for example, for a business that has $3,000 in current assets and $1,500 in current liabilities. Its current ratio of 2.0 looks great, but there is only $1,500 in working capital available to run and build the business!)

We should note that low working capital and a low current ratio are common among food hubs, and may occur by design. RSF Social Finance reports that many of their food hub loan applicants have negative working capital (associated with a <1 current ratio).\(^{11}\) Because of their mission and business model, food hubs may make a choice to pay producers quickly, hold large amounts of inventory, or target customers who take a long time to pay bills. In these situations, it is appropriate to obtain a line of credit in order to improve cash flow for daily operations.

As an alternative to working capital, it may be useful to employ a measure reflecting only the “most current” operational portion of current assets and liabilities. Such measures are helpful for measuring liquidity in the short run. Robin Morris of Mad River Food Hub recommends tracking the following:

\[
\text{Bank balances} + \text{inventory} + \text{accounts receivable} - \text{accounts payable}
\]

A chart of cash flow and liquidity metrics, with further suggestions for how to use and interpret them, is shown on the next page (Table 5).

### Resolving common cash flow issues

The following practices can increase working capital and assist with cash flow:

- **Make a cash flow budget** to anticipate possible cash shortages at certain times of year. Determine what sources of cash (including a line of credit, alternative lending, or grants and charitable funds) could provide enough of a cash cushion during the shortfalls.

- **Develop sales outlets that benefit cash flow.** Pre-sell products whenever possible. Examples of sales outlets that enable prepayment for products include online marketplaces and prepaid direct-to-consumer food box programs. These outlets can provide cost-free credit from customers who are willing to support you.

- **Accept credit cards** to receive payment quickly.

- **Obtain a line of credit** to gain access to short-term working capital.

- **In your mix of customers, consider targeting some who can meet shorter payment terms.** For example, some food hubs report being able to use Net 7 (i.e., seven day) terms with restaurants because restaurants receive payment from their own customers almost immediately.

- **Where possible, aim for shorter receivables terms (e.g., Net 7 or Net 15) and longer payables terms (e.g., Net 30).** Keeping days receivable shorter than days payable brings cash into the business. If paying producers quickly is part of the food hub’s
## Measures of Liquidity and Cash Flow

<table>
<thead>
<tr>
<th>Name of Measure</th>
<th>Calculation</th>
<th>Use how often?</th>
<th>Meaning</th>
<th>Interpretation</th>
<th>Ways to Improve</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days Receivable</td>
<td>((\text{Avg. Accounts Receivable} \div \text{Revenue}) \times \text{days in period})</td>
<td>Weekly</td>
<td>Avg. number of days the business takes to collect payment owed by customers. If low, sales turn into cash quickly. If high, business is slow to collect on biWils.</td>
<td>For cash flow, lower DR is better. Look at DR relative to Days Payable Outstanding. It is ideal to have DR shorter than Days Payable, but this may not always be possible. Set a goal for DR based on industry standards for customer type, and measure against this goal.</td>
<td>IF HIGH: Negotiate and actively enforce shorter payment terms with customers. Monitor aged receivables closely. If needed, it is appropriate to get a line of credit to fund receivables.</td>
<td>Industry benchmarks; Increase/decrease against goal</td>
</tr>
<tr>
<td>Days in Inventory</td>
<td>((\text{Avg. Inventory} + \text{COGS}) \div \text{days in period})</td>
<td>Weekly/Monthly</td>
<td>Avg. number of days it takes for inventory to turn over completely. Businesses that sell more perishable product keep less inventory, so compare to benchmarks from companies with similar product mix.</td>
<td>IF LOW: Depending on business model, could indicate efficient inventory management and low stocking costs. But, could also mean facility is too small for product volume, which could be constraining sales or increasing the risk that stock runs out. IF HIGH: Inventory is taking longer to leave the facility. Is it constraining cash flow too much?</td>
<td>IF LOW: Ensure storage type is matched to storage needs; organize products efficiently; increase storage if needed. IF HIGH: To increase cash and reduce inventory costs, consider lower stocking positions. Pre-sell items when possible (e.g., process whole animal carcasses to order, instead of selling individual cuts.)</td>
<td>Industry benchmarks; Increase/decrease against goal</td>
</tr>
<tr>
<td>Days Payable Outstanding</td>
<td>((\text{Accounts Payable} + \text{COGS}) \div \text{days in period})</td>
<td>Monthly</td>
<td>Avg. number of days the company takes to pay its bills. May be low if food hub pays its vendors upon receipt of product.</td>
<td>For cash flow, higher DPO is better. Look at DPO relative to Days Receivable as explained above. IF LOW: the business is paying vendors quickly and not asking them for much credit. Check if current ratio is strong and check the amount of available working capital, as DPO affects these.</td>
<td>IF LOW: Determine extent to which farmers / vendors need or demand short payment terms. If appropriate and necessary, lengthen payment terms to increase cash flow.</td>
<td>Increase/decrease against goal</td>
</tr>
<tr>
<td>Current Ratio</td>
<td>(\frac{\text{Current Assets}}{\text{Current Liabilities}})</td>
<td>Quarterly</td>
<td>Ability to pay liabilities in the short run without disrupting operations. (&lt;1) means there are not enough current assets to pay off current liabilities.</td>
<td>Higher current ratios are needed if sales are less frequent or if Days in Inventory are high. IF LOW: there may be too much term debt or the business may be buying too much with cash. Look at dollar value of working capital too, to see actual size of available cash cushion.</td>
<td>IF LOW: Pay off short-term debt if possible; restructure short-term debt into long-term debt; lower monthly bills; sell unproductive assets to increase cash; invest excess cash to earn interest; increase cash flow via favorable payment terms.</td>
<td>Increase/decrease against goal</td>
</tr>
<tr>
<td>Working Capital ($)</td>
<td>(\text{(Current Assets - Current Liabilities)})</td>
<td>Quarterly</td>
<td>Dollar value of liquid (current) assets that would be left over if all current liabilities were paid off immediately.</td>
<td>Measures actual assets available for day-to-day operations. For a small business the current ratio may be good, but if the dollar value of working capital is small, the business could still be at risk.</td>
<td>IF LOW: Seek a line of credit, lower monthly bills; sell unproductive assets to increase cash; invest excess cash to earn interest; negotiate more favorable payment terms, if appropriate.</td>
<td>Increase/decrease against goal</td>
</tr>
</tbody>
</table>
mission, or if the food hub serves customers such as schools that tend to pay slowly, this may not be possible. In this case it may be more important to obtain an operating loan and/or to emphasize the other cash flow strategies suggested here.

- **Consider a role for charitable funding.** For example, some grant programs pay cash up-front for grant-funded activities. This may provide a cash cushion in the short run, provided that all grant funds are ultimately spent for their committed purpose. Privately donated funds can play a similar role, but may have fewer restrictions than grant funds.

- **Consider sources of equity financing.** Selling shares of the business can help generate working capital, although this can be risky for reasons we will discuss later. For co-ops, member equity or low-interest member loans also can expand the cash cushion.

- **Manage dividends carefully.** If you have shareholders or cooperative members who own equity in the company, consider carefully whether to pay dividends or patronage refunds out of profits. (Obviously, this depends on your agreements with your shareholders.)

- **Reduce the time that goods spend in inventory** wherever possible within the business model. If there are certain times of year when the business carries more inventory, incorporate this into your cash flow budgeting. Inventory processes will considered in greater detail in Section 5.

- **Consider the implications of ownership vs. brokerage models.** A brokerage model has some disadvantages; for example, charging a flat brokerage fee means less flexibility to negotiate a high gross margin on certain products. However, not taking ownership means cash is not tied up in unsold inventory that the food hub owns. The food hub also avoids risks of loss from product shrinkage in inventory.

- **Reduce expenses to increase profitability.** See profitability sections of this guide.

### Improving collection of receivables

Many food hubs report challenges in collecting payment from customers in a timely manner. Receiving delayed payment from customers obviously affects cash flow, and is equivalent to providing credit to those customers. If there is no disincentive for paying late, customers may intentionally or unintentionally exploit the opportunity to extract free working capital from you.

For some food hubs, write-offs (i.e., bills that are never paid by customers) can turn into a huge problem that impacts profitability as well as cash flow. Food hubs we studied had annual write-offs of up to $20,000. Costs of goods sold to non-paying customers eat directly into a food hub’s profits. So, a little more time spent on bill collections can yield a large return.

The following practices, drawn from the National Good Food Network’s Food Hub Community of Practice listserv and other sources, have been recommended by food hub managers to improve collection of receivables. (Most of these strategies serve wholesale operations, but some can be adapted to direct-to-consumer programs.)

- Set aside time every day or at the end of each week to send out bills, because customers can only pay bills once they’ve received them. Sending bills frequently also creates an opportunity to monitor receivables frequently.

- When billing, aim for 7– or 14–day payment terms where possible. Different terms make sense for different customers. Restaurants may be able to handle terms as short as 7 days because their revenue comes through cash and credit cards at the time of sale. Other customers may need longer terms.

- When billing, aim for 7– or 14–day payment terms where possible. Different terms make sense for different customers. Restaurants may be able to handle terms as short as 7 days because their revenue comes through cash and credit cards at the time of sale. Other customers may need longer terms.

- **Speak to customers in person to confirm their credit terms. Build a relationship.**

- **Run credit checks and/or require references for customers who will be buying products on credit.** For new customers, require cash on delivery for the first three orders or until a credit check can be completed.

- **Establish a credit limit with customers.**

- **Monitor aged receivables closely. Send billing statements regularly; automatically emailing**
Note on Recordkeeping

Food hubs that operate multiple programs might wish to measure Days Receivable separately for each program. This requires tracking each program’s receivables separately, for example as sub-accounts of Accounts Receivable in Quickbooks™.

Take Pete’s Produce, for example. They operate a prepaid food box program and a wholesale program. Most of the food box revenues enter the business long before products are delivered, without ever turning into accounts receivable. This could make the hub’s overall Days Receivable quite low, reflecting how prepaid sales are good for cash flow. But it also could hide the fact that the wholesale program isn’t collecting its bills on time. Moreover, each program might have different goals for improvement. The wholesale program’s goal might be to decrease its Days Receivable from 30 to 20 days by shortening its billing terms. The food box program’s goal might be to eliminate write-offs or to stop delivery to customers who are 30 days late with their prepayments. Tracking receivables separately would allow progress towards these goals to be monitored more carefully.

statements on a regular schedule through Quickbooks™ can be helpful.
• Consider offering a small percentage discount for early payers; e.g., those who pay 5–10 days early.
• Make a rule about when you will stop delivering to late payers. If receivables age past an acceptable number of days, stop credit sales and require cash on delivery.
• Personally reach out to late payers. If necessary, work with them to establish a schedule of partial payments, with due dates.
• Make use of the Perishable Agricultural Commodities Act (PACA) and obtain a PACA license. PACA is a legal tool that provides special rights for produce wholesalers, including the right to receive full payment within 10 days of delivery. All produce wholesalers are covered by PACA, but having a license can assist with the enforcement of your rights. Ensure that you are not unintentionally waiving your PACA rights. Learn more at www.ams.usda.gov/rules-regulations/paca.

Despite its best efforts, a food hub still may end up with receivables that remain unpaid for a long time. Lenders look unfavorably on businesses that carry substantial receivables aged more than 90 days, and may not count them as assets. If a customer has stopped sending payment altogether, and is not responding to requests for payment, it may be time to write off their aged receivables as losses. If the customer is still in communication and is still making payments, try not to write off their old invoices yet; continue to follow up with them to resolve the issue.

More resources on liquidity and cash flow

Iowa Food Hub: Managing Cash Flow for a Low-Capital Food Hub Start-up.
https://store.extension.iastate.edu/Product/14323.

Farm Start Cash Flow Worksheet

Creating and Using a Cash Flow Budget (with downloadable template)

Food Hub Example: Cash Flow and Liquidity

Recall Pete’s Produce, the first imaginary food hub whose 2014 balance sheets we examined earlier. Using our key metrics template, Pete’s Produce chose some internal targets for its liquidity and cash flow. The next year, the managers of Pete’s Produce calculated the following metrics for its actual liquidity and cash flow.

Take a moment to look at the figures in Table 6. What do you think was happening at this food hub from October to December? How was cash flow changing? How was inventory changing? Was the business having any trouble paying its bills?
Here are some observations:

- Days receivable were much higher than the target in the first two months. That is, the food hub was taking longer than desirable to collect payment from customers. But by December, days receivable had decreased to below the food hub's target.

- Days in Inventory remained above the food hub's target, and above the benchmarks for broadline and produce wholesale. That is, the food hub was holding inventory for a longer time than expected.

- Days payable outstanding was within or close to the target range. It was the highest in November, meaning the food hub took longer to pay its vendors in November. (Note that Pete's Produce placed an upper and a lower bound on its target for days payable outstanding, which probably reflects the food hub's dual goals of maintaining good cash flow and paying producers quickly. Letting DPO get too low is bad for cash flow, while letting it get too high means delaying payment to farmers, which may not be good for the food hub's mission.)

- The overall cash conversion cycle ranged from 21.8 days in October to 15 days in December. On average, it took that many days for money spent on products to cycle back into sales revenue for the business. If the food hub were meeting its targets, the CCC would have been only 5 days.

- The current ratio was below the target in all months, and the business was illiquid in November. In other words, if the food hub had

### Table 6

<table>
<thead>
<tr>
<th>Name of Measure</th>
<th>Calculation</th>
<th>Benchmarks from Other Businesses</th>
<th>Internal Target</th>
<th>Actual Performance Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days Receivable</td>
<td>(Avgs. accounts receivable ÷ revenue) x days in period</td>
<td>Broadline Wholesale</td>
<td>22.0</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Produce Wholesale</td>
<td>30.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food Hub</td>
<td>Recommended 30 days or fewer</td>
<td></td>
</tr>
<tr>
<td>Days in Inventory</td>
<td>(Avgs. inventory ÷ COGS) x days in period</td>
<td>Broadline Wholesale</td>
<td>11.3</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Produce Wholesale</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conventional Retail Grocer</td>
<td>29.2</td>
<td></td>
</tr>
<tr>
<td>Days Payable Outstanding</td>
<td>(Avgs. accounts payable ÷ COGS) x days in period</td>
<td>Produce Wholesale</td>
<td>47.8</td>
<td>25-30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food Hub</td>
<td>Higher than Days Receivable, but no more than 30 days</td>
<td></td>
</tr>
<tr>
<td>Current Ratio</td>
<td>Current assets ÷ current liabilities</td>
<td>Broadline Wholesale</td>
<td>1.7</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conventional Retail Grocer</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cooperative Retail Grocer</td>
<td>3.34</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food Hub</td>
<td>2.39</td>
<td></td>
</tr>
<tr>
<td>Working Capital</td>
<td>(Current assets – current liabilities)</td>
<td>Specific to each business</td>
<td></td>
<td>$40,000</td>
</tr>
</tbody>
</table>

Good performance is shown in green. Performance that was worse than targets is shown in red.
suddenly been asked in November to pay off all its short-term liabilities, it would not have been able to do so without selling off long-term assets (e.g., equipment).

Now let's see what the managers of Pete's Produce can tell us about this time period:

- Getting wholesale customers to pay bills on time has been a challenge, which is why days receivable was so high.
- Days in inventory was higher than usual because in September/October the food hub bought several tons of squash and sweet potatoes to sell over the winter.
- As a result, the food hub was short on working capital by November. The low current ratio reflects this.
- In November, because of limited cash, managers started to worry. They had made a firm commitment to paying vendors within 25–30 days. They worried that if cash continued to be limited, they might have to let their vendors down.
- Fortunately, the situation improved in December. This was when the food hub started receiving subscription payments for its winter direct-to-consumer food box program. With the new infusion of cash, Days Receivable went down, the current ratio went up, and the food hub could pay its vendors on time again.

Here's another interesting point. Going back to the income statement for Pete's Produce in Part 2, we see that the dollar value of receivables at the end of December 2014 ($46,688) equaled about 38 percent of its total assets. For one food hub in our case study, this value was over 50 percent! In other words, half the food hub's assets were essentially tied up in no-interest, short-term loans to customers. How else could these dollars have been invested in ways that would yield returns for the business?

Now consider this: What recommendations would you make to this food hub so that next fall goes better?

Here are a few ideas:

- Focus on decreasing days receivable for the wholesale program using the suggestions earlier in this section. Try tracking wholesale receivables separately from the food box programs so that progress can be monitored. (See Note on Recordkeeping on p. 23.)

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**Tradeoffs of Different Payment Methods**

Some of our case study hubs had trouble tracking receivables because they were collecting personal checks from hundreds of customers in a direct-to-consumer program. Such a system becomes even harder to manage if customers pay on a payment schedule or if they pay frequently (e.g., for weekly orders rather than a seasonal food box subscription).

Taking electronic credit card payments is the obvious alternative to accepting cash or checks, but it comes with its own tradeoffs. Electronic processing fees were in the list of “top five” operating expenses for two of our three case study hubs that were selling directly to consumers. Furthermore, some online ordering systems lock food hubs into using a particular payment processing company, which may charge transaction fees at above-market rates. Problems also can arise with credit card processing services when credit cards expire or when a large number of credit card holders have their accounts frozen due to a hacking event, as happened with Target retail stores a few years ago. If your payment system charges customers on an automated schedule, make sure it notifies you when payments don’t go through.

The bottom line is, no payment system is perfect, so food hubs should weigh their options carefully. Costs of accepting cash or checks from small customers include large amounts of staff time to track all payments and the risk of delivering products to non-payers, if the system is not being closely monitored. Costs of electronic payment systems can include transaction fees, sunk costs of setting up each new system, and the risk of missed payments due to technological or credit card glitches.
• Next year, make a cash flow budget that includes projections about how much the food hub will spend on inventory that will be held for a long time. Use these projections to determine the food hub's additional working capital needs in October/November, and apply for an appropriate line of credit.

• Continue to target a days receivable figure that is less than days payable, as this will generate positive cash flow.

**Key Metrics: Profitability**

Every food hub has reason to make positive profit, or net income, a top priority. In the long run, without profit, a business cannot maintain solvency, sustain cash flow, reward investors, attract lenders, or retain earnings for future capital investments.

Kate Danaher of RSF Social Finance has observed that even profitable food hubs can end up stuck “in the red” when they fail to place earnings in a reserve account for unexpected events, such as truck accidents, unforeseen increases in insurance premiums, or equipment breakdowns. Profit retained by the food hub provides a cushion against unanticipated loss, making it possible for the hub to continue fulfilling its valuable mission over time. Goals for each food hub will vary, but one financial model recommends that food hubs seek 5 percent profit for long-term viability, in order to attract investment or to funnel back into operations as needed.12

Most food hubs already measure their net income, or profit after taxes, which is very important. To provide insight about the components of net income, we focus on additional measures of profitability, including:

- **Sales vs. forecast budget**
- **Gross margin (before costs of sales)**
- **Earnings before interest, tax, depreciation, and amortization (EBITDA)**
- **Net income or profit**
- **Return on assets (ROA)**

_Sales vs. Forecast budget_ is a very simple metric; the food hub calculates its realized sales as a percentage of budgeted sales for the period.

We define **gross margin (before costs of sales)** as the amount of sales revenue left for expenses and profit after paying the portion that passes through to farmers. If the food hub takes ownership of the product, the portion that goes to farmers first becomes costs of goods sold. If the food hub does not own the product, it passes directly to farmers and the remainder is similar to the gross margin.

The _Food Hub Benchmarking Study_ reports an overall gross margin (before costs of sales) of about 28 percent for the 41 hubs it surveyed. The most profitable top 25 percent of hubs had an average gross margin of 30 percent. However, typical gross margins vary widely by marketing outlet. For example, “mostly retail” (>80 percent retail) food hubs in the _Food Hub Benchmarking Study_ reported an average gross margin of about 45 percent. The average gross margin for conventional food wholesalers is nearly 16 percent.13 Most of the food hubs we interviewed used wholesale gross margins of 16–22 percent. This illustrates the importance of calculating gross margins separately for each marketing outlet and comparing them to appropriate benchmarks.

We also recommend calculating achieved gross margins by product line (e.g., meat, dairy, produce, etc.) and comparing them.

**EBITDA** (earnings before interest, tax, depreciation, and amortization, sometimes also called the operating expense ratio) measures profitability without considering the company's debt structure, investments in depreciable assets, or tax status. This metric is calculated in a manner similar to net income (revenue minus expenses) except that it does not count interest, depreciation, amortization, or taxes as expenses. EBITDA is affected by the gross margin and day-to-day costs of operations. It measures the profitability of operations and is a good indicator of how well the business generates cash.

Net income is the traditional measure of profit, the “bottom line” of a business. It is the portion of revenue left after all expenses, including costs of goods, and operating expenses, interest, depreciation, amortization, and taxes. Earnings from net income can be reinvested back into the business or, in for-profits, can be distributed to owners and shareholders.
EBITDA and net income are similar, but different. Net Income considers the impacts of financing and investment decisions on profitability, but EBITDA does not. One especially important difference is depreciation, an expense not considered in EBITDA. Depreciation represents the value lost by physical assets, such as equipment, as they age over time. Since it is not a cash expense, it does not affect cash flow. However, depreciation is still important, because it signals a future need to invest in new equipment when old equipment wears out. Since net income does consider depreciation, managers should look at both EBITDA and net income when measuring profitability.

Return on assets (ROA) measures profit returned on each dollar invested in the business, allowing a direct comparison with other possible types of investments. While asset turnover measures effectiveness in turning assets into gross sales, ROA measures effectiveness in turning assets into operating profit (profits before interest). For food hubs that don’t have investors, ROA is not terribly useful. For food hubs that do seek investment, ROA may affect how favorably investors will view the business.

**Additional ways to look at profitability**

In addition to tracking overall key metrics for profitability, we recommend paying attention to Costs of Sales and creating breakdowns for some of the metrics.

*Costs of sales* are variable costs incurred in filling and delivering an order. As sales volume increases, total costs of sales increase as well. Examples of costs of sales include packaging, credit card processing fees, delivery fuel, trucking expenses, and labor costs that increase as sales volume increases, such as packing and truck driver labor.

Our project advisors argue that because of the variation in food hub business models, it is not very useful to benchmark food hubs’ costs of sales against one another. However, it is important to understand your costs of sales within the context of your own gross margin. Subtracting the costs of sales from the gross margin shows how much of each sales dollar remains to cover fixed overhead costs (such as rent, utilities, insurance and administration) and profit.

The calculation is as follows:

\[
\text{Gross margin minus cost of sales (\%) = sales - COGS - cost of sales/sales}
\]

If gross margin minus costs of sales is less than zero, the business should halt operations and seriously rethink its business model, because it is losing money on every dollar of sales, regardless of volume. In this situation, “scaling up” only means losing more money. If gross margin minus costs of sales is greater than zero, the

**Margins and Markups**

People sometimes confuse gross margins with markups. In our definition, a gross margin is the percentage of the selling price that a food hub gets to keep after paying the cost of each item sold (the cost of goods sold or COGS). For example:

\[
\text{If gross margin = 20%:} \\
\text{(selling price – COGS) ÷ selling price = 20%}
\]

A markup, on the other hand, is a percentage of cost that is added to that cost to find the selling price. For example, here’s a markup based on costs of goods sold:

\[
\text{If markup = 20%:} \\
\text{selling price = COGS + (COGS x 20%) = COGS x 1.2}
\]

It’s important to realize that gross margin and markup are mathematically different. Think about it:

If you pay $10 for an item and then sell it at 20% markup:

\[
\begin{align*}
\text{COGS} &= \$10 \text{ per item...} \\
\text{Selling price} &= \$10 + (\$10 \times 20\%) \\
&= \$10 \times 1.2 = \$12 \text{ per item}
\end{align*}
\]

…then what portion of each sales dollar (or **gross margin**) do you keep?

\[
\begin{align*}
\text{Gross margin} &= (\text{Selling price} - \text{COGS}) ÷ \text{Selling price} \\
&= (\$12 - \$10) ÷ \$12 \\
&= 16.7\% \text{ gross margin}
\end{align*}
\]

You keep 16.7% of each sales dollar. That’s a lot less than 20%!
business may or may not be profitable, but it at least has a chance of covering its overhead costs by scaling up.

The gross margin minus costs of sales also helps determine how large a food hub must be to break even. The smaller the gross margin after costs of sales, the more the food hub has to sell to cover its fixed overhead costs and make ends meet.

Additional insight into profitability can be gained from the following breakdowns:

- Gross margins by program and product line
- Costs of sales for each program or revenue center
- Gross margin minus costs of sales, by program and product line
- List of top five operating expenses by percentage of total operating expenses, compared to previous months or years

It is also useful to look at sales by category and to compare them to targets. Examples of ways to analyze sales include:

- Sales by customer or customer type ($ and % change)
- Sales by delivery location
- Sales by vendor or vendor type ($ and % change)

**Improving profitability**

Since all of your business’ key metrics are interconnected, keep each one in mind when looking for ways to improve profitability. Many of the recommendations for improving efficiency and cash flow can impact profit as well. Below are some specific principles for improving profitability.

- **Form realistic expectations for gross margins.** According to Kate Danaher of RSF Social Finance, unrealistically high projections of gross margins are one of most common (and most costly) mistakes that she has seen food hubs make. Know the pricing norms of your industry, the needs of your producers, and the expectations of your customers — especially as you expand beyond your initial customer base. If you do not use a fixed markup, you may see cyclical changes in margins over the course of the year as produce goes in and out of season and market prices vary.

- **Monitor margins closely, by program.** Food hubs that do not use a predetermined percent markup (e.g., 18 percent for all products) experience a tradeoff. On the one hand, they are free to negotiate on price and to take advantage of the highest margins that the market will allow. On the other hand, they may not know what overall gross margin they are achieving. Such hubs should monitor actual (achieved) gross margins for each program on a weekly or monthly basis to make sure they’re on target. Also, check achieved margins on sales to your largest customers or categories of customers.

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**Note on Recordkeeping**

When a food hub often operates several different programs that generate revenue in different ways, each program can be thought of as a revenue center. Types of revenue centers include direct-to-consumer (online marketplace, pre-packed food box), wholesale with direct store delivery, wholesale via a distribution partner, and custom hauling for other businesses.

When programs differ from one another in their cost structures or cash flow characteristics, it is useful to track COGS, income, and expenses separately for each program. This encourages better analysis of efficiency and profitability on a program-by-program basis. For example, tracking income and COGS by program makes it possible to calculate gross margin by program. Tracking payroll expenses and variable costs by program makes it possible to see how these costs affect each program’s profitability individually.

Program-specific expenses can be tracked by creating a separate subclass for each program within Quickbooks™, or by creating subaccounts for each program under expense categories. When tracking labor costs for individual programs, try to include all payroll costs in the appropriate program category, including benefits and payroll taxes that go with the hours worked. It may be necessary to allocate multipurpose staff time among programs or functions, based on the portion of their time each person spent supporting each program.
## Measures of Profitability

<table>
<thead>
<tr>
<th>Name of Measure</th>
<th>Calculation</th>
<th>Use how often</th>
<th>Meaning</th>
<th>Interpretation</th>
<th>Ways to Improve</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales vs. Forecast Budget</td>
<td>Actual Sales ÷ Projected Sales</td>
<td>Weekly</td>
<td>Comparison of actual to forecasted sales, overall and in various sales categories.</td>
<td>Meeting sales targets is critical to meeting cash flow needs and profitability goals.</td>
<td>IF LOW compared to targets: revisit marketing, sales and pricing strategies.</td>
<td>% on target in business plan</td>
</tr>
<tr>
<td>Gross Margin (before Costs of Sales) (%)</td>
<td>(Sales - COGS) ÷ Sales</td>
<td>Weekly/ Monthly</td>
<td>Portion of each sales dollar remaining after Cost of Goods Sold. This is what remains for other expenses and profit.</td>
<td>Gross margins are determined by pricing. Appropriate gross margins depend on the customer, the product line, the nature of packing and delivery, and what the market will bear. Set reasonable targets in line with market realities, operating expenses and the business plan.</td>
<td>IF LOW compared to targets: Seek markets and products that offer higher margins; negotiate on prices; work with vendors to reduce COGS to the extent appropriate within the hub’s mission. Evaluate and update business plan projections. Are they realistic?</td>
<td>% of target in business plan</td>
</tr>
<tr>
<td>EBITDA (%)</td>
<td>(Net Income ($) + Interest + Taxes + Depreciation + Amortization) ÷ Total Revenue, where Net Income ($) = Total Revenue − Total Expenses</td>
<td>Monthly</td>
<td>Measures profitability without considering debt payments, depreciation or tax status. Equivalent to the gross margin (which reflects pricing) minus day-to-day operating expenses (which reflect efficiency).</td>
<td>To understand impacts of pricing on profitability, look at Gross Margin. To understand impacts of operational efficiency on profit, look at labor costs and at trends in top five largest expenses over time.</td>
<td>IF LOW compared to targets: Is the gross margin adequate – is the business charging enough? See section on pricing. Are operating expenses under control? See section on efficiency.</td>
<td>% on target in business plan</td>
</tr>
<tr>
<td>Net Income (Profit Margin) (%)</td>
<td>(Total Income - Total Expenses) ÷ Total Income</td>
<td>Monthly</td>
<td>The traditional measure of profit. The portion of revenue left after paying ALL expenses.</td>
<td>Compare to EBITDA to see how profitable the food hub looks before and after interest, depreciation, amortization and taxes.</td>
<td>IF LOW: See recommendations for improving profitability via EBITDA and Gross Margin. Also, are you depreciating assets too quickly? Are interest payments too high?</td>
<td>% on target in business plan</td>
</tr>
<tr>
<td>Return on Assets</td>
<td>(Net Income + Interest) ÷ Total Assets, where Net Income ($) = Total Revenue − Total Expenses</td>
<td>Annually</td>
<td>Measures return on each dollar invested in the business, allowing comparison with other types of investments. Note: This measure can be volatile for businesses holding few assets.</td>
<td>Look at asset turnover (ability to turn assets into revenue), factors affecting EBITDA, and depreciation. If ROA is low and asset turnover is good, look at COGS and other expenses. Small asset size (e.g., from renting equipment) can make ROA large; large asset size (e.g., from owning) can make it small.</td>
<td>IF LOW: Improve net income, improve asset turnover, and review depreciation expenses. Conventional wisdom says to seek ROA greater than the interest rate, ideally by 2%.</td>
<td>Increase/decrease</td>
</tr>
</tbody>
</table>
• **Know the gross margins associated with each product line, and expand accordingly.** Try to identify what is profitable based on past data rather than targets or assumptions. Evaluate achieved gross margins individually for product line categories like produce, meat, frozen goods, and dairy. This requires tracking COGS and revenues separately for each product line.

• **Look at gross margins and costs of sales together.** In accounting systems, try to categorize operating costs, especially costs of sales and labor costs, by program. Over time, monitor costs of sales to see whether the costs incurred per sales dollar are increasing, decreasing, or staying flat as sales increase. Where possible, monitor gross margin minus costs of sales by program or revenue center. If expanding from retail to wholesale, pay close attention to operational efficiency to be sure the smaller gross margin associated with wholesale will cover costs.

If focusing on direct-to-consumer retail programs, remember that their appealingly high gross margins do not necessarily equate to more profit. In our case studies, retail programs sometimes were less profitable than wholesale — because of the large amount of labor, credit card processing fees, and packaging costs involved. This illustrates the importance of tracking variable costs by program.

• **Pay attention to trade-offs, especially with inventory items.** Sometimes inventory items such as value-added products or frozen meats yield a high gross margin. Be sure that the cost of keeping these items in inventory will be covered by the added margin. Calculate the holding costs of inventory to determine whether apparently profitable inventory items really are profitable. Learn more in Section 5.

• **Don’t be afraid to change prices or markups.** Sometimes price or markup changes are necessary. Most successful food hubs report having had to adjust their standard margins or markups to cover expenses. When larger wholesale companies need to increase prices, they schedule the changes with customers in advance, so that customers can plan ahead. For more detailed ideas about pricing and margins, see Section 5.

• **Invest judiciously in branding and marketing.** In our case studies, two food hubs went into the red with marketing expenses that did not seem to yield the desired results. Sometimes hiring an in-house marketing person is effective; other times it may be better to rely on an experienced external marketing firm. Either way, interview several candidates and check references before committing to a contract.

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**How Much Must We Sell to Break Even?**

A firm “breaks even” when it makes $0 in profit, meaning it covers all its expenses but has nothing left to distribute to owners and investors, to reinvest into operations, or to cushion against future losses.

Suppose costs of sales include all of a business’ variable costs — i.e., all of the costs that increase along with sales volume in the short run. Then, the gross margin after costs of sales can theoretically be used to predict the volume of sales needed for breakeven:

\[
\text{Breakeven sales volume ($)} = \frac{\text{fixed costs ($)}}{\text{gross margin minus costs of sales ($)}}
\]

Fixed costs are costs that do not increase along with sales volume in the short run. Examples include rent, utilities (unless the food hub is doing processing), accounting and administrative salaries, and insurance. In reality, of course, these costs do increase in the longer term as a business grows. The above calculation only works if fixed costs truly do stay the same over time, or if we can estimate what they would be at the breakeven sales level.

Clearly there are limitations of using such a basic method to calculate breakeven sales volume. Still, for “back-of-the-envelope” projections, it offers a handy reference point, especially if the business has already set future targets for fixed costs. You can also use the equation to explore how different possible levels of fixed costs, costs of sales, and gross margin would affect your breakeven point, which could assist in setting targets.
• **Use grant funding strategically.** Grant funding should be used to build capacity for more retained earnings in the long run, but not to bolster losses year after year. Consider spending grants on assets that will improve profitability in the long run. Examples include market development activities that will increase sales, or infrastructure that will increase efficiency and capacity. Bear in mind that grant funds used to buy fixed assets will translate directly into equity on your balance sheet, making your business more appealing to lenders and investors.

More resources on pricing and margins are offered in Section 5. Also see Table 7.

**More resources on profitability**


**Key Metrics: Efficiency**

Efficiency is directly tied to profitability. In this section, we look closely at the following measures of efficiency:

- **Revenue (or sales) per worker equivalent**
- **Labor to income (or sales) ratio**
- **Vendor concentration**
- **Customer concentration**
- **Asset turnover**

We focus on labor efficiency because labor was the number one operating expense for the average hub in the Food Hub Benchmarking Study, as well as for all four case study hubs whose metrics we reviewed. We also include metrics for concentration in this section, because decisions about vendor and customer concentration involve balancing tradeoffs between efficiency and risk.

At the end of this section, we provide a list of additional efficiency metrics that are commonly used in food industries. Limited data prevented us from calculating them for the food hubs in our case studies. We include them as examples of how efficiency can be monitored if managers are willing to collect more data about their operations.

**Labor efficiency**

For food hubs, labor efficiency is difficult to benchmark because food hub business models vary so widely in their degrees of labor intensity. In general, food hubs spend significantly more on staffing and labor expenses (18.3 percent of sales revenue, according to the Food Hub Benchmarking Study) than broadline grocery wholesalers (3.6 percent of sales revenue) or conventional grocers (6.3 percent of sales revenue), as seen in the key metrics in Appendix A. This may be because of the additional services that food hubs offer, such as working with smaller producers, adding value through marketing, providing farm-level transparency, or offering education. It also may be because food hubs pay workers a better wage, substitute less labor with technology, or experience scale-related inefficiencies in comparison to multimillion dollar conventional wholesalers.

In analyzing labor performance, **sales per worker equivalent** measures how efficiently labor hours were converted to sales, not taking pay rates into account. **Revenue per worker equivalent** is similar, but measures how efficiently labor hours were used to generate all kinds of revenue, including non-sales business revenue and charitable revenue. **Labor to sales ratio** measures how efficiently labor expenses generate sales, taking rates of staff compensation into account. The **labor to income ratio** measures the same thing for total revenue, including grants and other income. Each of these measures evaluates a slightly different aspect of efficiency.

Clearly some activities, such as direct-to-consumer programs that pack numerous small orders, require more labor than others. Robin Morris of Mad River Food Hub and Jesse Singerman of Prairie Rivers LLC recommend grouping staff expenses by revenue center or function. For example, expenses can be grouped by marketing outlet (wholesale, direct to consumer) and/or by functional categories such as administration, warehousing, trucking, etc. Internal goals can then be used to guide decisions about staffing in each of these areas.
Vendor and customer concentration

Vendor concentration measures the portion of a food hub’s product sales that come from its largest suppliers. Customer concentration measures the portion of sales that go to its largest customers. Both forms of concentration involve striking a balance between efficiency and risk. Managers often seek to scale up by selling more product to a few key customers, rather than by selling more product to many different customers. The reasons for this are obvious — it takes less time, staff, and marketing to manage a few large accounts than to recruit and manage many small accounts. Furthermore, sales volume from a few “anchor clients” can provide the cash flow necessary to grow the business over time. On the other hand, a highly concentrated customer base can be risky if it reduces the food hub’s ability to negotiate with large customers on things like price and payment terms. Similar logic applies for large vendors.

The Food Hub Benchmarking Study measured concentration based on the percentage of total sales connected to food hubs’ top 10 buyers and vendors. Another way to measure concentration is to list customer or vendor accounts in order from largest to smallest, and total how many of the largest accounts comprised about 75 percent of total sales.

How much concentration is appropriate? The answer depends on each food hub’s business model, but tracking vendor and customer concentration provides an important way to measure changes over time and compare to internal targets. As a rule of thumb, Jesse Singerman of Prairie Ventures LLC suggests taking a close look at concentration if one customer comprises 20 percent or more of total sales.

If your pricing varies with type of customer, monitor the achieved gross margin associated with sales to particular groups of customers. If you aim to increase sales to a particular customer, make sure the gross margin you already receive from that customer is on track with your targets. We have seen food hubs stuck in an unprofitable situation when their business model revolves around one large customer who demands unsustainably low prices.

Efficiency in use of assets: Asset turnover

As a measure of overall efficiency we look at asset turnover, which shows how efficiently the business uses its assets to generate revenues. This measure is impacted by the use of fixed assets and infrastructure, as well as its monetary assets.

Asset turnover can complement days in inventory as a way to get a clearer picture of how efficiently the food hub is using its physical infrastructure. High asset turnover appears to be common among newer food hubs, because they often borrow or rent infrastructure in order to start up with limited capital. This reflects the approach of “doing a lot with a little,” although infrastructure constraints also can lead to inefficiencies. Because asset turnover is affected by the degree to which the food hub owns or rents its physical infrastructure, it is more useful for comparing the hub’s performance to its own historical performance than for comparing it to other businesses.

Other measures of operational efficiency

So far this section has focused on efficiency metrics that can be calculated using financial and transaction records that most food hubs have on hand. However, managers can learn much more about their operational efficiency if they collect additional data, such as annual number of cases delivered, annual number of truck routes and delivery stops, delivery miles driven, and customer and employee turnover. In our interviews, we found that not all food hubs were collecting this kind of information. So, on the next two pages we’ve compiled a list of operational metrics illustrating how other businesses use such data to monitor their efficiency.

If you use an IT solution or computer program to take and manage orders, your program may already record information such as total cases or pieces shipped. Contact your IT provider for details.

Resolving efficiency issues

All of the food hubs in our case study had reasons to want to increase their labor efficiency. Recall that all personnel in the business, not just sales and marketing staff, contribute to increasing the volume of sales. To improve staff efficiency at generating sales, the Food Hub Benchmarking Study suggests asking the following questions (note: these are suggestions from the study’s authors, not findings of the study itself): 17
### Other Measures of Operational Efficiency: Conventional Wholesale

The following is a selection of operational metrics used by United Fresh Produce Association, an industry association of produce distributors, in their benchmarking. These metrics are fairly typical of the wholesale industry. They can be calculated over a time period of your choosing (e.g., weekly, monthly, or quarterly.)

**Sales Practices**

- **Avg. dollar value per case** = sales ÷ cases of product delivered
- **Avg. margin dollar value per case** = realized gross margin ÷ cases of product delivered
- **Avg. % of credits to sales** = $ credits to customers for product returns ÷ sales

**Procurement/Inventory Management**

- **True shrink (% of sales)** = inventory adjustments ($) ÷ quality related credit ($) + sales dollars
- **Avg. fill rate** = cases of product delivered to customers/cases of product committed to customers

**Warehouse Metrics**

- **Avg. overhead costs per case** = overhead costs ($) ÷ cases of product delivered
- **Avg. labor costs per case** = direct warehouse labor costs ÷ cases shipped
- **Avg. cases selected per hour** = cases selected ÷ case selector hours

**Outbound Transportation**

- **Avg. stops per trucking route** = # of delivery stops ÷ # of total routes
- **Avg. transportation costs per case** = transportation costs ($) ÷ cases of product delivered
- **Avg. transportation costs per mile** = transportation costs ÷ delivery miles driven
- **Avg. truck utilization** = avg. cubic feet of product shipped per route ÷ avg. cubic feet of truck capacity

### Other Measures of Operational Efficiency: Food Hubs

The following are additional operational efficiency metrics that food hub managers have mentioned in interviews and presentations:

- **Number of fulfilment errors per delivery cycle**
- **Number of customer complaints per ordering cycle**
- **Number of CSA or food box members per season**
- **Member retention (CSA or co-op)**
  = number of members renewing ÷ number members during previous season
- **Food box or CSA delivery site retention**
  = number of sites renewing ÷ number of sites during previous season
- **Average sales per customer**
- **Average size of purchase per customer**
- **Customer participation rate**
  = number of customer orders per week ÷ number of registered customers
- **Employee turnover rate**
  = number of separations per year ÷ avg. number of employees during the year
### Measures of Efficiency

<table>
<thead>
<tr>
<th>Name of Measure</th>
<th>Calculation</th>
<th>Use how often?</th>
<th>Meaning</th>
<th>Interpretation</th>
<th>Ways to Improve</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor to Income Ratio (%) (or Labor to Sales Ratio)*</td>
<td>Personnel Expenses + Revenues ÷ Revenues</td>
<td>Monthly/Quarterly</td>
<td>Measure of how efficiently payroll expenses (wages, salaries benefits and other payroll costs) are generating revenue.</td>
<td>Calculate for each program if possible. A lower value may suggest greater efficiency but can also reflect low staff compensation.</td>
<td>IF HIGH: See recommendations on staff efficiency. IF LOW and if Revenue per Worker Equivalent is below benchmarks, staff wages may be below average. See section on compensation.</td>
<td>Increase/ decrease against goal</td>
</tr>
<tr>
<td>Revenue per Worker Equivalent (or Sales per Worker Equivalent)*</td>
<td>Revenue + Average FTE</td>
<td>Monthly/Quarterly</td>
<td>Measures how efficiently staff time is generating sales.</td>
<td>IF LOW, may suggest labor inefficiencies, or that the food hub is focusing on activities that do not result in sales. (Note that for food hubs this measure is usually above conventional benchmarks.)</td>
<td>IF LOW: Increase efficiency with division of labor, clear responsibilities, investments in qualified staff, training, and reduced turnover. Consider mechanization options to improve staff productivity. Consider marketing, sales, and how staff activities generate revenue.</td>
<td>Increase/ decrease</td>
</tr>
<tr>
<td>Vendor Concentration (%)</td>
<td>$ COGS from Top 10 Vendors + Total COGS</td>
<td>Quarterly</td>
<td>Portion of sales derived from 10 vendors who sell the most to the food hub. High concentration can reduce expenses by lowering transaction costs of each purchase. But it may not align with the hub’s mission, and poses risks.</td>
<td>IF LOW: Look at time and labor involved in working with many vendors. Are there ways to reduce these transaction costs? IF HIGH: Is the food hub at risk if it loses a vendor? Is there a back-up plan in place for filling orders if a large vendor leaves?</td>
<td>IF HIGH: Develop redundant product sources, or discuss effects of vendor concentration with key vendors to put alternatives in place. IF LOW, ask: Should you increase sales from existing vendors before seeking others? If the mission requires sourcing from many farmers, how can you interact efficiently with vendors?</td>
<td>Intuitive based on business</td>
</tr>
<tr>
<td>Customer Concentration (%)</td>
<td>$ Sales to Top 10 Customers + Total Sales</td>
<td>Quarterly</td>
<td>Portion of total sales made to the 10 customers who buy the most. High concentration can keep transaction and marketing costs low as sales grow. But it’s risky if a big customer has too much negotiating power or stops buying.</td>
<td>IF LOW: Look at time and labor involved in selling and taking orders. Will increased concentration need to be part of the food hub’s strategy for scaling up?</td>
<td>IF HIGH, ask: If a large customer stops buying, are there programs to absorb excess? IF LOW: Consider how to increase sales without adding customers, e.g., via an intermediary such as a distributor or a grocery service. Develop a product line targeting large customers.</td>
<td>Intuitive based on business</td>
</tr>
<tr>
<td>Asset Turnover Ratio</td>
<td>Total Revenue ÷ Avg. Assets</td>
<td>Annually</td>
<td>Measures how efficiently the business uses assets to generate revenues. Impacted by efficiency in using both physical assets and monetary assets. Volatile for hubs owning few assets.</td>
<td>IF LOW, sales are low compared to the hub’s assets. IF HIGH, indicates efficient use of assets or that the hub is using rented / donated infrastructure.</td>
<td>IF LOW, may have a scale mismatch: unproductive assets, too much equipment capacity, equipment sized for peak rather than average volume, or mismatched equipment type. Or, sales may still be catching up to infrastructure size.</td>
<td>Increase/ decrease</td>
</tr>
</tbody>
</table>

* Multiplying the result by 100 to get percentage.
• Should we be doing more or different marketing?
• Do we have the right people doing the right jobs?
• Can we offer sales training to our staff?
• Do we conduct performance evaluations of key personnel?
• Where can we improve sales efficiencies or remove bottlenecks?
• Is our pricing appropriate?
• Have we built a marketing plan with a sales goal?
• Does our entire team know the plan?

Other recommendations include:

• **Focus on decreasing labor to sales ratio on a program-by-program basis.** Try breaking up staff expenses by program or function, so that you can compare labor efficiency metrics for wholesale and retail. Limit seasonal labor hours in situations in which seasonal labor is not the most efficient way to get tasks done. Continue to plan ahead for growth to avoid staffing bottlenecks.

• **Take a close look at compensation and benefits** in tandem with efforts to reduce turnover and increase labor efficiency. Retaining talented staff and attracting future talent will yield returns in the long run, but may require higher compensation. See Section 5 for more ideas about setting appropriate compensation.

• **Reduce losses from product spoilage and from quality-related customer credits.** These losses, which together comprise “shrink,” can have a big impact on profits, so be sure to monitor them. When product spoils in inventory or passes its “sell-by” date, record the inventory adjustments as a special type of expense, separated from COGS. (This is also a good idea for tax purposes.) When customers are given credit for spoiled or poor-quality items, track these as a special type of expense as well. Add them together to find your shrink, and set targets for improvement. The United Fresh Produce Association, comprised of large produce distributors, reports an average shrink of 1.7 percent of total sales.\(^\text{18}\)

**More resources on efficiency**


**Top 15 Metrics for a Successful Distribution Operation.** Webinar from ExtenData and International Telematics. [www.youtube.com/watch?v=9qCwBl-I00A](http://www.youtube.com/watch?v=9qCwBl-I00A)

**United Fresh Produce Association.** Collects and compiles operational benchmarks for association members. [www.unitedfresh.org](http://www.unitedfresh.org)

Also see Table 8.

**Food Hub Example: Profitability and Efficiency**

Recall The Golden Bean, the imaginary food hub we mentioned earlier. Following our key metrics template, The Golden Bean chose internal profitability targets for themselves. They then calculated the following profitability metrics for Q4 of 2015 (Table 9). What would you say is going well for The Golden Bean? What problems might they be experiencing?

Some basic observations:

- Retail and wholesale sales were both lower than forecast.
- The gross margins for wholesale and retail were both lower than their targets.
- EBITDA was low and net income (profit) was negative. Low gross margins may have contributed to this problem with profitability.
- Return on assets was lower than expected, because of low profits before interest. Since the food hub’s total assets were not very large, the small difference in expected profit appears as a larger difference in the ROA.
<table>
<thead>
<tr>
<th>Name of Measure</th>
<th>Calculation</th>
<th>Benchmarks from Other Businesses</th>
<th>Internal Target (Q4 2015)</th>
<th>Actual Performance Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales vs. Forecast</td>
<td>Actual Sales + Projected Sales</td>
<td>Refer to food hub’s own business plan</td>
<td>Wholesale: $460,000</td>
<td>$411,305</td>
</tr>
<tr>
<td>Budget</td>
<td></td>
<td></td>
<td>Retail: $440,000</td>
<td>$382,249</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Overall: $900,000</td>
<td>$793,554</td>
</tr>
<tr>
<td>Gross Margin</td>
<td>(Sales - COGS) ÷ Sales</td>
<td>Broadline Wholesale: 16.3%</td>
<td>Wholesale: 19%</td>
<td>18.1%</td>
</tr>
<tr>
<td>before Costs of Sales</td>
<td></td>
<td>Food Hub (Mostly Wholesale): 30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cooperative Retail Grocer: 36.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food Hub (Mostly Retail): 45%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food Hub (Overall)*: 28.1%</td>
<td></td>
<td>24%</td>
</tr>
<tr>
<td>EBITDA (%)</td>
<td>(Net Income ($) + Interest + Taxes + Depreciation + Amortization) ÷ Total</td>
<td>Broadline Wholesale: 2.70%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revenue, where Net Income ($) = Total Revenue – Total Expenses</td>
<td>Conventional Retail Grocer: 2.40%</td>
<td></td>
<td>0.1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cooperative Retail Grocer: 0.98%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Income (Profit) (%)</td>
<td>(Total Revenue – Total Expenses) ÷ Total Revenue</td>
<td>Produce Wholesale: 1.30%</td>
<td></td>
<td>-1.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Broadline Wholesale: 3.10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conventional Retail Grocer: 2.80%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cooperative Retail Grocer: 2.03%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food Hub: 1.80%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Produce Wholesale: 1.30%</td>
<td>Overall: 2.0%</td>
<td>-1.2%</td>
</tr>
<tr>
<td>Return on</td>
<td>(Net Income ($) + Interest) ÷ Total Assets</td>
<td>Broadline Wholesale: 18.90%</td>
<td></td>
<td>-3%</td>
</tr>
<tr>
<td>Assets (%)</td>
<td></td>
<td>Conventional Retail Grocer: 24.20%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cooperative Retail Grocer: 8.44%</td>
<td>Overall: 5% (all of 2015)</td>
<td>-3%</td>
</tr>
</tbody>
</table>

Performance that was better than targets is shown in green. Performance that was worse than targets is shown in red.
To better understand profitability, let’s take a look at the metrics below for The Golden Bean’s efficiency in 2015 (Table 10). Which programs were the most labor intensive? What was happening with vendor and customer concentration? How efficiently were assets being used to generate sales?

Here are some observations about The Golden Bean’s efficiency:

- Overall sales per worker equivalent were below the internal target and the food hub benchmark, suggesting that the food hub may want to use labor hours more efficiently.
- The retail program was much more labor intensive than the wholesale program, with a much higher labor to sales ratio. This is probably because the retail program involved packing and delivering numerous individual customer orders.
- The labor to sales ratios were close to targets, and the overall labor to sales ratio fell well below the food hub benchmark. Since efficiency in using labor hours doesn’t explain this difference, the lower labor costs may have come from paying workers less than the “average” food hub. It’s possible that low wages may have been helping to subsidize some inefficiencies in how staff were working.
- Vendor concentration for the 10 largest vendors was within the food hub’s target range. However, customer concentration was higher than the target.
- The asset turnover ratio was a little lower than the target, but higher than benchmarks. This suggests that the food hub was using its assets efficiently to generate sales. It may also have been renting some infrastructure or using donated infrastructure.

Table 10

<table>
<thead>
<tr>
<th>Name of Measure</th>
<th>Calculation</th>
<th>Benchmarks from Other Businesses</th>
<th>Internal Target (Q4 2015)</th>
<th>Actual Performance Q4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor to Sales Ratio</td>
<td>Total personnel expenses ÷ total revenue</td>
<td>Broadline Wholesale</td>
<td>3.60%</td>
<td>Wholesale: 12%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cooperative Retail Grocer</td>
<td>22.86%</td>
<td>Retail: 24%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food Hub</td>
<td>18.30%</td>
<td>Overall: 13%</td>
</tr>
<tr>
<td>Sales per Worker Equivalent</td>
<td>Total sales ÷ average FTE</td>
<td>Broadline Wholesale</td>
<td>$387,204</td>
<td>$300,000</td>
</tr>
<tr>
<td>Vendor Concentration</td>
<td>$ COGS from top 10 vendors ÷ total sales</td>
<td>Produce Wholesale</td>
<td>29%</td>
<td>No more than 30%</td>
</tr>
<tr>
<td>Customer Concentration</td>
<td>$ sales to top 10 customers ÷ total sales</td>
<td>Broadline Wholesale</td>
<td>35%</td>
<td>30–35%</td>
</tr>
<tr>
<td>Asset Turnover Ratio</td>
<td>Gross revenue ÷ average asset</td>
<td>Broadline Wholesale</td>
<td>5.4</td>
<td>Increase from last year’s value of 7.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conventional Retail Grocer</td>
<td>5.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cooperative Retail Grocer</td>
<td>4.3</td>
<td></td>
</tr>
</tbody>
</table>

Performance that was better than targets is shown in green. Performance that was worse than targets is shown in red.
A large volume of The Golden Bean’s wholesale sales was made to one distribution company. This is the reason for the high value of the customer concentration metric. Achieved margins from sales to the distribution company were consistently below the food hub’s target of 19 percent. However, the company is an important customer, so the food hub wants to keep selling to it.

Two vendors who usually supply winter-season greens and root vegetables suddenly stopped supplying to the food hub this year. In December, the hub had to look around for winter vegetables for its retail food box program. As a result of having to buy those items on an ad hoc basis, they ended up paying more than expected. The higher COGS had a significant effect on gross margins for the retail program, because it was too late for the food hub to raise prices on customers’ produce subscriptions. This is why retail gross margins were lower than expected.

The food hub wants to keep its retail program even if it is not very profitable, because the prepaid food boxes provide a large amount of cost-free working capital.

Take a moment to consider what advice you would give this food hub to improve the efficiency and profitability of its operations. Here are some ideas:

- Revisit the labor structure. Institute standard operating procedures to streamline worker processes, collaborating with employees to standardize and define their roles and tasks. Build employee awareness and ownership regarding the business’ goals. Consider using improved efficiency as a way to justify paying staff more, so that talented staff can be recruited and retained. Where appropriate, consider relying more heavily on full-time staff than on seasonal workers.

- Try to eliminate unpaid overtime by full-time staff, or at least track these hours in order to determine more realistically how much labor is needed.

- Revisit the relationship with the distribution company to see if the food hub can obtain a better margin or sell a more profitable product line to the distributor. Explore whether the distributor would engage in production planning and make

<table>
<thead>
<tr>
<th>Gross Margin and Variable Costs of Sales by Program, as % of Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program</td>
</tr>
<tr>
<td>--------------------------</td>
</tr>
<tr>
<td>Gross margin</td>
</tr>
<tr>
<td>Variable labor*</td>
</tr>
<tr>
<td>Packaging materials</td>
</tr>
<tr>
<td>Delivery expense</td>
</tr>
<tr>
<td>Credit card processing</td>
</tr>
<tr>
<td>= Gross margin minus costs of sales</td>
</tr>
</tbody>
</table>

*Note that this costs of sales calculation includes only variable labor costs, or those that increase as sales volume increases. It does not include overhead labor such as administration and accounting.

The Golden Bean also used its records of variable costs of sales to calculate gross margin minus costs of sales for each of its programs in the last quarter of 2015 (Table 11):

Looking at the costs of sales breakdown shows us that although the original retail gross margin was large, the retail gross margin after costs of sales was smaller than for wholesale. That is, after costs of sales, the retail program left a smaller portion of each sales dollar to cover fixed overhead costs and profit. If each program had about the same overhead requirements in proportion to sales volume, the retail segment ultimately was less profitable than wholesale.

Now let’s see what The Golden Bean’s managers can tell us about this time period:

- The food hub hired new seasonal workers this season, as well as some new part-time marketing and sales staff who worked on contract. They were paid by the hour and were not paid very much. Because they needed training and were not on site full-time, it was hard to get things done efficiently. This low-cost, inefficient labor is why labor to sales ratios were low (reflecting labor cost “savings”), but sales per worker equivalent also were low (reflecting a need to improve efficiency). Furthermore, the hub’s full-time managers ended up working undocumented overtime hours to keep operations running smoothly, effectively subsidizing the food hub’s labor inefficiency.
purchasing commitments that would enable farmers to commit to an affordable price. Build relationships with other customers or distribution partners who can move large volumes of products at a gross margin consistent with the target of 19 percent.

- Keep the retail program, but work to secure more explicit production commitments from farmers who will supply the food hub in the winter. Consider raising prices on winter direct-to-consumer food box subscriptions, or reducing the quantity of items packed in the boxes in the winter.

Key Metrics: Solvency and Repayment Capacity

The measures in this section deal with solvency and debt repayment capacity, which are of interest both to managers and to potential lenders. Here, we look at the following measures:

- Debt service coverage ratio
- Debt asset ratio

The debt service coverage ratio measures repayment capacity, or whether the business is generating enough income to make regular payments on its long-term debt. It shows the number of times the business can cover scheduled long-term debt payments (principal and interest) using the income it generates before taxes, depreciation and interest. This indicates the degree to which a business can endure possible shortfalls in cash flow resulting from adverse economic conditions. Because this ratio depends on the company EBITDA, it turns out to be high in profitable years and low in unprofitable years.

When thinking about debt, managers also should be mindful of the length of term loans and the useful value of assets. Longer loans are appealing because they require lower debt service payments, but a loan to purchase an asset should never take longer to pay off than the life of that asset.

The debt asset ratio is a measure of solvency. It shows the portion of total assets that would need to be liquidated in order to pay off all liabilities, or the portion of the business owned by lenders, creditors, and other entities who are not the owners. Generally, if the debt-asset ratio exceeds 60 percent, the organization may find that traditional financing becomes harder to obtain and interest rates become less favorable.

Solvency can become a big issue for food hubs, especially those that began with a relatively small amount of startup capital or owner equity. Although food hubs tend to be conservative about taking on long-term debt, they still utilize credit from other sources such as Accounts Payable and low-interest, short-term loans (sometimes from farmers or other stakeholders). With slow and occasionally negative net income, a solvent business that is highly leveraged (i.e., one that has large liabilities in proportion to its assets) is at risk of becoming insolvent quickly if it incurs losses instead of profits. Insolvent businesses — those that owe more than they own — not only face the immediate threat of bankruptcy, but also have a tough time finding new loans and other support.

Also see Table 12.
### Measures of Solvency and Repayment Capacity

<table>
<thead>
<tr>
<th>Name of Measure</th>
<th>Calculation</th>
<th>Use How Often?</th>
<th>Meaning</th>
<th>Interpretation</th>
<th>Ways to Improve</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Debt Service Coverage Ratio</strong></td>
<td>EBITDA ($) + scheduled principal and interest payments for year, where EBITDA ($) = Net Income + Interest + Taxes + Depreciation + Amortization</td>
<td>Quarterly</td>
<td># of times the business can cover scheduled debt payments (principal and interest) using income it generates before taxes, depreciation and interest. Shows degree to which the business can endure cash shortfalls and still pay its debts on time. &lt;1 means negative cash flow. Rule of thumb: maintain debt service coverage of 1.25 to 1.3.</td>
<td><strong>IF LOW:</strong> Look at structure of debt: interest rates on each loan, interest as a % of gross margin or revenue, and total principal owed. Food Hub may be carrying too much debt or paying too much interest; it may have loans for too many fixed assets, which now affects cash flow. Ask if these assets are yielding adequate returns. Look at changes in ROA and asset turnover. Monitor and anticipate possible cash flow shortfalls, especially in low-volume months.</td>
<td><strong>IF LOW:</strong> Refinance or pay off long-term debt to reduce interest payments. Increase EBITDA through operational efficiencies and/or increases in gross margin.</td>
<td>Loan Covenants</td>
</tr>
<tr>
<td><strong>Debt to Assets (%)</strong></td>
<td>Total liabilities + Total assets</td>
<td>Quarterly</td>
<td>Portion of total assets that would need to be liquidated in order to pay off all liabilities, i.e., the portion of the business owned by lenders, creditors and other entities that are not the owners. Over 100% means the business is insolvent and would be unable to pay off all of its liabilities at one time. Below 50% is recommended.</td>
<td><strong>IF HIGH:</strong> there may be a solvency issue. If most liabilities are current liabilities, there also may be a liquidity problem – check current ratio. If most debt carries interest, may lead to a debt repayment issue and a cash issue – check debt service coverage ratio. If EBITDA is high enough, a hub with a high debt asset ratio will still be able to cover debts.</td>
<td><strong>IF HIGH:</strong> Increase profits; build equity; pay off debts. Consider seeking charitable dollars that can be used for long-term assets that improve profitability. Consider raising equity from co-op members or shareholders. <strong>IF LOW,</strong> compared to industry standards, and if profitability is good, the hub might consider more debt financing to take advantage of growth opportunities.</td>
<td>Increase/decrease</td>
</tr>
</tbody>
</table>
Confusion about balance sheets

Measures using information from the balance sheet can be difficult to interpret. Sometimes a food hub’s decisions about how to value its assets and structure its balance sheet, such as using tax-basis depreciation to value assets, can make the business look less successful than it really is. This is why it helps to make adjustments when calculating metrics.

Consider the example, from a real food hub (Table 13). The food hub had undervalued its assets by depreciating them quickly. It also had included a $50,000 grant under “current liabilities,” which can be a good accounting practice, but causes confusion because grants do not actually have to be repaid. Without adjustments, the food hub’s financial metrics show it to be insolvent with negative working capital. But if the grant liability is removed and assets are depreciated using a straight-line method, as in the “With Adjustments” column, the business appears to be solvent.

From a recordkeeping standpoint, neither way of depicting the food hub’s assets is wrong. But, from a financial evaluation standpoint, the adjusted version probably gives a more accurate picture of the business.

Table 13

<table>
<thead>
<tr>
<th>Effect of Adjustments on 2014 Year End Balance Sheet</th>
<th>Without Adjustments</th>
<th>With Adjustments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current assets</td>
<td>$43,623.84</td>
<td>$43,623.84</td>
</tr>
<tr>
<td>Long term assets</td>
<td>$94,809.88</td>
<td>$211,625.59</td>
</tr>
<tr>
<td>Total assets</td>
<td>$138,433.72</td>
<td>$255,249.43</td>
</tr>
<tr>
<td>Current liabilities</td>
<td>$215,577.54</td>
<td>$164,027.54</td>
</tr>
<tr>
<td>Long term liabilities</td>
<td>$56,640.72</td>
<td>$56,640.72</td>
</tr>
<tr>
<td>Total liabilities</td>
<td>$272,218.26</td>
<td>$220,668.26</td>
</tr>
<tr>
<td>Owner equity</td>
<td>-$133,784.54</td>
<td>$34,581.17</td>
</tr>
</tbody>
</table>

Effects on Liquidity and Solvency

<table>
<thead>
<tr>
<th></th>
<th>Without Adjustments</th>
<th>With Adjustments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt-asset ratio</td>
<td>197%</td>
<td>86%</td>
</tr>
<tr>
<td>Current ratio</td>
<td>20%</td>
<td>27%</td>
</tr>
<tr>
<td>Solvent?</td>
<td>NO</td>
<td>YES</td>
</tr>
</tbody>
</table>

In general, factors that can cause confusion on a balance sheet include:

- **Tax-basis depreciation.** Clearly, depreciating assets using IRS schedules is appropriate for filing taxes. However, IRS depreciation schedules tend to undervalue assets in the first few years after purchase. As a reference point for lenders and for internal decision-making, the balance sheet should reflect a best guess of the actual market value of the business’ fixed assets, and depreciation expenses should reflect real changes in the market value of those assets. Because depreciation affects both the income statement and the balance sheet, undervaluing assets makes it harder for managers (and lenders) to determine the business’ actual solvency position and to determine its net income.

- **Not tracking inventory.** If the food hub does not track inventory, it cannot be counted as a current asset on the balance sheet. In this case, if the inventory is recorded as a cost of goods sold at time of purchase, its value simply disappears from the balance sheet until it is sold. For a food hub holding a large amount of inventory, this can make its position look worse than it really is.

- **Errors in inventory tracking.** Food hubs that pay for their own food processing can sometimes have trouble accurately valuing each piece of inventory. Discrepancies should be reconciled regularly so that they do not build up over time. See Section 5 of this guide for details.

- **Methods of categorizing grants.** It is common to show grants as liabilities on the balance sheet until the grant funds are spent for their contractually defined purposes. This makes sense as an accounting method, especially if the grant will be spent for some purpose outside the food hub’s normal operations. Until the grant funds are spent, though, it will look as though the grant funds must be repaid to the funder.
• Equipment owned by an owner of the business, but rented to the business. Sometimes small business owners choose to personally own and rent equipment to their business rather than having the business own the equipment. An argument can be made that such equipment is really an asset of the business, and should be considered in its metrics. Including it would improve the business’ debt-asset ratio.

• Loans made by an owner to the business. Sometimes small business owners choose to make a loan to their business instead of contributing equity. As one small business specialist explains, “Consider the individual who wants ready access to his or her investment in the business. He or she could hold stock, but the bank might restrict the repurchase of shares. And if the company goes under, he may come up empty handed. If he lends the funds to the corporation instead, management can free the money by simply paying the debt.” The issue with this strategy, however, is that it takes what is essentially owner equity and represents it as a liability on the balance sheet. When making decisions about how to contribute personal capital to the business, owners should consider effects on how lenders will view the business.

Does the balance sheet matter?

Measures based on sales, expenses, and cash flow usually are more important for week-to-week decision-making than measures based on total assets, such as asset turnover, ROA, and the debt asset ratio. So, it might be tempting to think that the structure and accuracy of the balance sheet matters only when someone outside the food hub, like a potential lender, is going to see it.

A word of caution: Without adjustments to their balance sheets, three out of four of the food hubs in our case studies were shown to be insolvent or nearly insolvent. So, food hub managers have reason to monitor their equity and their debt-asset ratio. If the balance sheet is set up to give an accurate picture of the business, then no adjustments will be needed, and monitoring the business becomes easier. Moreover, items causing confusion about solvency, such as inventory and depreciation, also impact profitability and cash flow.

Improving solvency

In general, the two ways to improve the debt asset ratio are to build more equity and to reduce total liabilities. The best way to build equity is to be profitable so that debts can be paid off. Alex White of the Agricultural and Applied Economics program at Virginia Tech also suggests the following:

• Sell unneeded assets and use the proceeds to pay down your debts.
• Take good care of your assets (preventative maintenance) so they will hold their value longer.
• Reinvest profits back into the operation; be sure to invest in productive, profitable assets, though!
• Find outside investors for your business. If you are a C-corporation, you might sell additional shares of stock, etc.
• Don’t take on additional debt if you can possibly avoid it.

Sources of equity for food hubs include member equity (for co-ops only), investors (for appropriately structured for-profits), or grants that can be spent on long-term assets. Note, however, that co-op member equity accounts may be treated as a liability by some lenders. The decision about whether to seek outside investors for a food hub, especially if it is having profitability problems, is a serious one; see Section 5 for details.

To improve repayment capacity, a business owner can either increase earned income before interest, depreciation taxes and amortization (EBITDA), or reduce the amount of debt that is currently owed. This can be done by paying off existing long-term debt, but also by refinancing short-term debts into long-term loans.

If a company is unable to service its debt and is veering towards default on its loans, owners should think outside the box about how to improve their position. In our interviews, we heard about one food hub that was having trouble creating enough cash flow to pay off the last few years of a debt. Managers knew that once the debt was paid off, they would be “in the black” again. The food hub went to its farmers and told them it needed a temporary 2–3 percent increase in gross margins, effective only through the end of the debt term.
The extra 2–3 percent would be placed in a reserve account and used exclusively to make debt payments. The farmers agreed to accept a temporary decrease in prices on the condition that the food hub would reinstate the original pricing once the debt was paid off. This flexibility was possible in part because farmers also were owners and shareholders of the hub.

**More resources on solvency**

Financial Analysis of an Agricultural Business – Liquidity and Solvency.


**Food Hub Example: Solvency and Repayment Capacity**

Using our template of Key Metrics, managers of Pete's Produce set some targets for repayment capacity and solvency, then calculated the following actual measures for 2015 (Table 14).

Take a moment to look at these figures. What would you say about the solvency and debt repayment capacity of Pete's Produce?

Here are some observations:

- Pete's Produce appears to have dangerously low repayment capacity. Its EBITDA is low relative to the interest and principal it owes on debts, suggesting that the food hub is experiencing a cash shortage after making its debt payments.
- Pete's Produce is at a high risk for insolvency. That is, the majority of its assets are owned by the company's creditors and only a small portion of its assets (19 percent) consist of equity owned by the owners. One year of negative net income could easily cause the business to owe more than it owns.

Now let's see what the managers of Pete's Produce can tell us about this time period:

- The business never had much equity to begin with; its owners have “bootstrapped” the business with their personal savings and short-term credit, such as accounts receivable and (until recently) credit cards. The food hub has invested carefully and cautiously in equipment, renting at least some of what it needs.
- Last year was a bad year that diminished the food hub's retained earnings, reducing its debt-asset ratio. Managers are worried that the same thing will happen again this year.
- One $20,000 short-term loan held by the business is actually a loan from the owner and does not necessarily need to be paid back in the current year, so in reality it functions more like equity. If this loan were removed from current liabilities, the debt service coverage ratio would be 1.1. This

<table>
<thead>
<tr>
<th>Name of Measure</th>
<th>Calculation</th>
<th>Benchmarks from Other Businesses</th>
<th>Internal Target 2015</th>
<th>Actual Performance 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt Service Coverage Ratio</td>
<td>EBITDA + all principal and interest payments due within the year, where EBITDA = net income + interest + taxes + depreciation + amortization</td>
<td><strong>Food Hub</strong>&gt;1.1–1.5</td>
<td>1.3</td>
<td>0.5</td>
</tr>
<tr>
<td>Debt to Assets (%)</td>
<td>Total liabilities + total assets</td>
<td><strong>Broadline Wholesale</strong> 84.70%</td>
<td><strong>Conventional Retail Grocer</strong> 55.70%</td>
<td><strong>Cooperative Retail Grocer</strong> 59.33%</td>
</tr>
</tbody>
</table>

*Performance that was better than targets is shown in green. Performance that was worse than targets is shown in red.*
helps explain why the food hub is not experiencing an emergency situation in repaying its debts.

What recommendations would you make to this food hub?

Here are a few ideas:

- Continue to aim for positive net income in order to build up retained earnings.
- Keep track of both market-value and tax-basis depreciation as separate accounts, so that they can see the true value of their assets.
- Don't be afraid to seek grant or charitable funding for the purchase of assets.
- Use measures like asset turnover to gauge how efficiently assets are being used to generate sales. Sell off unproductive physical assets and invest in more productive ones.

Section 5: Spotlight on Common Challenges

In this chapter, we take a closer look at some common challenges that surfaced in the case studies and interviews with food hub managers.

Common Challenge 1: Pricing and Margins

Since narrow gross margins tend to be a challenge for food hubs, finding the right margin and choosing a successful pricing strategy are critical. In this section, we provide a basic overview of some “textbook” approaches to pricing, then give examples of how real food hubs deal with price in practice. We also discuss common issues related to pricing, including the issue of farmers selling “around” the hub.

Pricing and margins: A “textbook” approach

There are two components that determine the gross margin retained by a food hub: the cost side (i.e., the price that farmers are able to accept), and the demand side (i.e., the selling price that customers are willing to pay). Usually, prices are determined using some combination of information about both the cost and demand sides (See Table 15.)

The cost side. Some businesses take a cost plus approach to pricing. To determine selling price, they start with the cost of providing a quantity of goods, and then add a markup for selling and administrative costs. One method of cost plus pricing takes into consideration not only the costs of goods sold (including processing), but also the variable costs of packing, processing (if applicable), delivery, and fixed costs of maintaining a facility. A hypothetical example might look something like this:

The amount added to the unit product cost should be big enough to cover any selling and administrative costs and still leave enough profit to meet profitability goals. In the example, the food hub has determined that it needs to add an 11 percent markup to the total costs of buying, storing, picking, packing and delivering the broccoli (costs which total to $36/case). So, the food hub aims for a selling price of $40/case. The hub may have chosen this markup based on experience, recommendations from other food hubs, or a calculation. (Recall that a markup is not the same as a gross margin; see the “Key Metrics: Profitability” section for details.)

It is important to notice that at a given price, if the number of cases of broccoli sold is different from the sales forecast, profits will change. If the food hub in the example sells more than 1,000 cases, profits will be larger than the target profit. If it sells less than 1,000 cases, profits will be smaller than the target, and might be negative.

Cost plus pricing is not an exact science. Some of the values needed for the method on the previous page, like labor per case, might be hard to estimate. Often, managers use trial and error to determine what markups are needed to cover their costs — but back-of-the-envelope calculations like the one shown can help as well.

Another example of a template that uses unit costs to calculate prices is the Farm-to-School Distribution Cost Template by Rodney Holcomb and Ahn Vo of Oklahoma State University: www.ngfn.org/resources/ngfn-database/knowledge/Farm-To-School_Distribution_Cost%20Template_97-2003%20version.xls

The demand side. As any manager knows, costs aren't the only factor in pricing; the demand side plays a huge role as well. Considerations include: What price are
customers willing to pay for particular items? How much will demand change if prices increase? To what degree are customers segmented in their characteristics and in their willingness to pay? That is, to what extent can the food hub charge different prices to different market segments?

A rule of thumb is that if demand for a particular product is price-elastic, meaning that buyers’ decisions are strongly affected by changes in price, then sellers must charge a smaller markup. If demand is price-inelastic, meaning that customers don’t care as much about price, then a larger markup should be possible. Consider eggs, for example. Grocery stores sell a lot of eggs, and many consumers view them as a staple. Stores know that consumers are price-sensitive when it comes to eggs, so they mark them up less than other products. They may even treat eggs as loss leaders, taking a small loss on each unit to lure in customers, hoping they also will buy other products with larger markups.

Following a similar logic, several food hubs we interviewed received a 15 percent gross margin on eggs while obtaining a 20–30 percent gross margin on almost everything else they carried. A customer’s standing order for a weekly delivery of eggs can be a good foundation on which to add other, more lucrative sales. So, charging a competitive price on local eggs turned out to be worthwhile. Getting a feel for the price-elasticity of different products helps vendors to devise an overall pricing strategy that balances out to positive profits, even though some items may be sold at low markups or even at a loss.

Other relevant pricing concepts include price skimming and premium pricing. Price skimming, a form of periodic pricing, involves introducing a product at a high price and gradually lowering it over time, to try to capture the best price possible from those who are willing to pay extra to get the product early. This is essentially what farmers are doing when they charge a higher price for early-season produce.

Premium pricing usually involves selling two grades of products at different prices that are produced using roughly the same process. The seller might take a loss on the low-priced product but make a profit on the high-priced product. A farmer selling higher-priced extra-fancy heirloom eating apples and lower-priced culls from the same orchard would be an example of premium pricing. We’d expect the extra fancy apples to generate a profit on each unit sold. The culls might be sold at a loss, for less than their per-unit variable cost of production. Selling the culls still would be beneficial to the farmer, if it helps him recover his fixed costs for things like equipment and inputs. Alternatively, the farmer could find a market for the culls where they have more value, for example as child-sized apples for school lunches. Either way, premium pricing requires thinking about high-grade and low-grade items together so that the overall result maximizes profit.

Table 15

<table>
<thead>
<tr>
<th>Cost</th>
<th>Amount</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Goods</td>
<td>$30/case</td>
<td>Price per case of broccoli purchased by the food hub</td>
</tr>
<tr>
<td>+ Variable Labor</td>
<td>$3/case</td>
<td>Estimated cost of labor needed to pick and deliver each case</td>
</tr>
<tr>
<td>+ Variable Overhead</td>
<td>$2/case</td>
<td>Other per-unit costs that increase with quantity, like fuel</td>
</tr>
<tr>
<td>+ Fixed Overhead</td>
<td>$1/case</td>
<td>Costs that don’t vary much with quantity, like rent and insurance, divided by number of units. Suppose these are $1000 per month and the hub sells only broccoli, then fixed overhead per unit is $1000/1000 cases = $1/case</td>
</tr>
<tr>
<td>= Unit Product Cost (absorption cost)</td>
<td>$36/case</td>
<td>Total of per-unit costs above</td>
</tr>
<tr>
<td>+ Selling &amp; Admin Expenses + Desired Profit</td>
<td>$4 (~10%)</td>
<td>This markup on the unit product cost is used to cover any remaining selling and admin expenses and profit</td>
</tr>
<tr>
<td>= Target price</td>
<td>$40/case</td>
<td>Desired selling price to charge to customers</td>
</tr>
</tbody>
</table>

*These prices and costs are fictional"
Pricing in practice: Working with farmers and customers

Generally speaking, food hubs take one of two basic approaches to pricing: either they charge a fixed percent markup, or they use a flexible gross margin that varies with farmer needs, market prices, customer expectations, and product line. Some hubs pay all farmers the same price for a particular product, while others do not. Some hubs charge all customers the same price for the same product, while others do not. Either way, managers tell us that pricing is part of a more complicated equation of building trust and relationships on both the supply and demand sides. Quality relationships are key to suppliers’ and customers’ willingness to work with the food hub on price.

Working with customers. To obtain good prices from wholesale customers, author and organic farming consultant Atina Diffley recommends these basic principles:

- Know what your customers value.
- Assure quality.
- Work from your strengths and competitive advantages.
- Stay in the market and never break a pattern of delivery.
- Tell the same story consistently with your delivery person, label, quality, pack, point of purchase cards, and attitude.
- Engage in production planning to assure predictable supply.

Clearly, there is a relationship between the selling price and the volume that can be sold at that price. Pricing often is a question of matching the price to the volume that the farmer wishes to sell, according to Diffley. When selling to a customer who resells product, such as a retail grocery store, it may be appropriate to ask how much of a product they will be able to sell at different prices. This can be a part of a price negotiation.

Understanding the marketplace also is key to successful price negotiation. USDA’s Agricultural Marketing Service (AMS) regularly publishes market prices for edible commodities at www.ams.usda.gov/market-news. The most common reference points for produce prices are terminal markets, which are large public exchanges located at major transportation hubs across the country. USDA’s terminal market price reports cover both conventional and USDA Certified Organic items. USDA also posts prices on local and regional food, collected from major farmers markets and other locations, at www.ams.usda.gov/market-news/local-regional-food.

Most food hubs seek to avoid playing “the price game” of closely tethering their prices to the fluctuating national market. However, Red Tomato (CT) uses terminal market prices as a tool to understand how their price points are likely to compare to conventional wholesale. According to executive director Laura Edwards Orr, knowing the market price allows the food hub to recognize in advance if their suppliers’ prices are significantly higher or lower than the market price. They constantly review market prices and forecasts for the season. This gives them a chance to share their concerns with growers, and if necessary, to gather talking points about the attributes of a particular product so that they can explain or negotiate charging a higher price to customers. This prevents the food hub from being caught off-guard in price negotiations when they make their sales calls.

Working with farmers. Food hubs often struggle to offer a fair price to farmers when selling in competitive markets. However, Michael Rozyne of Red Tomato argues that there are many ways to offer “a good deal” to farmers in ways that go beyond price. These include:

- Volume: Being able to sell a large and consistent volume, but also to match the right grower to the customer so that their price and volume expectations align.
- Planning: Helping farmers plan their production so that they can fit their volume to the demand without having excess capacity.
- Long-term relationships: Creating a feedback loop with customers so that growers have the chance to improve, which helps with customer retention.
- Efficient logistics: Saving growers money on distribution via shared trucking, backhauls, and full pallets.
• **Fast, reliable payment:** This benefits farmers’ cash flow, which can be of great importance, especially for farmers selling to wholesale channels only.

• **Ability to move the whole crop -- all sizes, all grades:** Finding alternative markets that maximize the value of small and cosmetically imperfect products.

• **Quality of relationship:** Providing reliability, trust, dignity, and market intelligence, thus reducing farmers’ stress and risk.

When food hubs offer farmers “a good deal” that helps them move more products, gain critical information about the marketplace, reduce waste and excess, and speed up cash flow, farmers may be in a position to be more flexible on prices.

In general, farmers selling large volumes of products may have more flexibility around price, while small farmers may require a higher price to be viable. Rather than standardizing prices, Red Tomato builds supply chains that match farmers to the right type and volume of customers, so that each farmer can earn the price he or she needs to be profitable. To this end, the food hub provides customized ordering guides to different customers depending on the type of customer, specific products, and the volume of product they purchase. As a result, the food hub may end up paying different farmers different prices on the same day for the same product — but this suits their mission and also helps them capture the margins they need.

Red Tomato is always transparent with growers about price negotiations and the prices they are charging their customers. They use an approach they call “dignity pricing” in working with growers to set prices. As the starting point for going into a negotiation with a buyer, they establish with the grower: a) their top or ideal price; b) the price they are comfortable with for the volume and customer in question; and c) their bottom price, which is the lowest both their finances and their dignity can tolerate. That gives Red Tomato a price range for negotiation as they go into discussions with a buyer, so that they know the point at which it is not worth it to the grower to make the sale.

Similar to Red Tomato, Common Market in Philadelphia works closely with farmers on pricing. Common Market’s co-executive director Haile Johnston explains that they provide guidance to farmers on what they think the market will bear, but essentially allow farmers to set their own prices and to test how well different prices will work. To these prices, Common Market adds a flexible markup of 15–35 percent, depending on the product, time of year, and their relationships with the market segment in question.

Some managers feel strongly about the importance of flexible markups, because they allow food hubs to take advantage of favorable market variations in price. For example, during the height of the growing season, the asking price of local farmers can turn out to be lower than the prices offered by national distributors. Unforeseen factors such as droughts in California or fluctuations in fuel prices may also cause national prices to be higher than local prices. Flexible pricing and margins allow the food hub to retain at least some of the profit from these windfall price advantages before passing the rest on to farmers or customers. An inflexible pricing scheme, based on a fixed markup and yearly average farmers’ market prices rather than seasonal wholesale prices, was cited as one reason for the unprofitability and eventual closure of Grasshoppers Distribution food hub in Kentucky.

**Price and “selling around the hub”**

Some food hubs report struggling with farmers “selling around the hub.” These farmers choose to start delivering directly to customers with whom their food hub has provided an initial sales connection. To the extent that this violates agreements with the food hub, it can be both a relationship and pricing concern. If farmers deliver to customers directly, it suggests a perception that they can do so at a lower cost than the “price” of the food hub’s services (i.e., its markup). This perception actually may be justified, or the farmer may be undervaluing the food hub’s services.

Food hubs have two main tools at their disposal in addressing farmers who are “selling around the hub.” They can negotiate more explicit agreements with farmers, and/or they can adjust how they price their services. Local Food Marketplace LLC, which offers information technology (IT) services for many food hubs around the country, suggests that managers should.
• **Select producers strategically**, choosing those who will value its services;

• **Engage with producers before conducting business with them** to discuss potential customer overlap, pricing strategies, quality expectations, and policy on sales around the hub;

• **Develop a production plan with producers and customers** to create shared expectations about price and volume and to increase the hub's value;

• **Analyze risks for each party and implement creative solutions**, such as marketing seconds or providing upfront payment for products;

• **Adopt a continual improvement process** to make sure the hub offers unique value;

• **Protect the hub's intellectual property**, including its brand and customer lists, in agreements; and

• **Create a hub brand** to increase customer loyalty to the hub.

Local Food Marketplace also provides advice on developing and enforcing successful contracts with producers. Read more at [http://home.localfoodmarketplace.com/about-us/resources-2](http://home.localfoodmarketplace.com/about-us/resources-2).

In one of our case studies and some of our interviews, we noted that “selling around the hub” can be especially problematic for food hubs that use a fixed percent markup to calculate prices. If the food hub is distributing to some sites near the farmer and some sites far away from the farmer, the farmer may recognize that she can distribute the same products more cheaply to the customers that are close to her farm. However, if the transportation costs reflected in the hub’s markup are based on a particular mix of nearby and faraway delivery destinations, a change in the mix could mean that the hub’s markup is no longer sufficient to cover its transportation costs. That is, if farmers stop using the food hub for local deliveries, the food hub must either create a new pricing schedule that varies with delivery distance, or recalculate its overall markup to reflect a longer average delivery route.

**Further resources:**


**Common Challenge 2: Attracting and Retaining Skilled Staff while Controlling Costs**

According to the 2014 Food Hub Benchmarking Survey, the 25 percent of food hubs with the highest profits spent 3 percent less of their revenue on labor than the average food hub, but paid workers 39 percent more per FTE. \(^30\) Such findings highlight the importance of investing in and retaining skilled staff.

In our interviews, food hub managers expressed interest in strategies for benchmarking appropriate wages and salaries. Several managers also mentioned staff turnover as an operational challenge that might be decreasing their labor efficiency. This section explores reasons for turnover, the role of compensation in labor productivity, and resources for benchmarking compensation.

**Staff turnover**

Staff turnover is expensive. It can cost 20 percent of an employee's annual salary to replace an employee who leaves. \(^31\) It also affects customer relationships. A case study on the collapse of Grasshopper Distribution concluded that “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 customers' relationships and overall performance of the enterprise.” \(^32\) Furthermore, turnover can reduce efficiency, lower morale, and make it difficult to build a culture around organizational values.

A compilation of research suggests that the following are important predictors of staff turnover: \(^33\)
• Whether initial expectations for the job are met; for example, to what degree was the job situation accurately described at time of hire
• Compensation level, including:
  ▪ Adequacy for meeting income needs
  ▪ Whether compensation is perceived to be a fair reward for effort
  ▪ Whether the promotional scheme is seen as equitable
• Likelihood of promotion or increase in pay, even if expected increase is small
• Satisfaction with supervisor relations, including:
  ▪ Perceptions of equitable or inequitable treatment
  ▪ Whether employee needs for recognition and feedback are met
• Quality of peer relationships on the job, including:
  ▪ Participation in a cohort of other trainees upon hire
  ▪ Inclusion and cohesiveness among peers
  ▪ Equity of social aspects of the job
• Satisfaction with the job content, including:
  ▪ Are the job tasks too repetitive?
  ▪ Is there enough autonomy and responsibility?
  ▪ How does the level of clarity about job roles compare to a given employee's need for clarity (which varies among individuals)?

As noted, compensation is only one of many factors affecting whether employees stay with a business. Food hubs may be able to recruit and retain skilled staff by providing a positive peer atmosphere, empowering staff to make decisions, offering opportunities for advancement, and providing strong job satisfaction. But compensation has social responsibility implications, and plays a role in productivity as well as turnover.

Compensation and productivity
Zeynep Ton, a professor at Massachusetts Institute of Technology who researches the staffing strategies of retailers, has documented many instances in which cutting staff or paying low wages hurt retailer profitability. Reasons include impacts on staff morale, customer service quality, and staff efficacy in making stocking decisions or other judgment calls that impact sales.

Ton cautions against using the labor to sales ratio alone as a tool for determining ideal staffing levels, as this tends to lead to cuts in payroll. Instead, she recommends that stores improve labor efficiency by reducing the number of product offerings and special promotions, cross-training employees for various tasks, timing and standardizing tasks, and giving employees the freedom to make small decisions. To determine optimal staffing levels, Ton recommends tracking performance on tasks that are the most likely to suffer from insufficient labor, and adjusting accordingly.34 One example of a store that uses such strategies is Costco, which pays employees 40 percent more than its chief competitor (Sam's Club) and enjoys almost twice the sales per square foot.35

While these suggestions are aimed at retail stores, they have relevance for food hubs as well. For a food hub that shapes its employee roles and process efficiency to increase Sales per Worker Equivalent, cost savings could make it more affordable to raise worker pay, which in turn could pay off with greater efficiencies.

Benchmarking wages and salaries
Food hub managers often express curiosity about the wages and salaries that other food hubs are paying. However, our case studies suggest that food hubs tend to greatly undervalue their personnel, and also experience high turnover. We recommend looking beyond the world of food hubs to benchmark appropriate compensation.

For guidance on what to pay employees, Jesse Singerman, food business consultant for Prairie Ventures LLC, recommends the following sources:

• Local economic development entities that collect wage information from their business members
• Local chambers of commerce
• Newspaper advertisements or online job postings 
  (be sure to look at job descriptions for positions 
  similar to yours, including positions at nonprofits 
  or social enterprises, and how they are defined)
• Social sector support organizations such as Third 
  Sector New England (http://tsne.org) sometimes 
  collect regional compensation data for values-
  driven organizations. To learn more, try contacting 
  your local or state nonprofit association.

The federal Bureau of Labor Statistics (BLS) calculates 
median wages and salaries for all kinds of job 
 descriptions nationwide. You can search the Bureau of 
Labor Statistics’ National Compensation Survey data for 
information on your state and region at www.bls.gov/
ncs/home.htm. Median hourly wages and salaries can be 
searched through the “multi-screen data search” feature 
on the site, or by downloading Excel spreadsheets for 
your state or metropolitan region. If you wish to search 
for wages only from the food wholesale industry, use 
NAICS code 424400: “Grocery and Related Product 
Merchant Wholesalers.”

Median wages for the following occupational categories 
may be of special interest:

13-1921 Buyers and Purchasing Agents, Farm 
  Products
41-0000 Sales and Related Occupations
43-4051 Customer Service Representatives
53-0000 Transportation and Material Moving 
  Occupations
53-3033 Light Truck or Delivery Services Drivers
53-7062 Laborers & Freight, Stock, and Material 
  Movers, Hand
53-7064 Packers and Packagers, Hand
We have not found BLS median wages and salaries 
for managerial positions to be very useful, because 
they show pay rates at larger for-profit companies, 
most of which do not have a social mission. From a 
mission-driven standpoint, it may be both unrealistic 
and undesirable for food hubs to pay their managers 
the same salaries as top-level staff at a $15-million 
wholesale distribution company. However, BLS figures 
do reinforce the need to offer a good package (including 
job satisfaction, a connection to values, and other non-
monetary benefits) to employees who could be making 
more money elsewhere.

On the other hand, BLS median wages for positions 
in lower pay brackets, such as packers, drivers, and 
the other occupational categories listed above, may be 
helpful in understanding what wages are competitive in 
the local labor market. Wage-labor jobs probably bear 
the least resemblance to nonprofit jobs in the degree to 
which employees are able to sacrifice potential income to 
become part of a social mission.

Benefits are another big consideration. Some food hubs 
do not offer health, vacation, dental, or retirement 
benefits to employees. Such benefits are highly 
recommended to enhance employee retention. In 
addition, consider creative, low-cost ways to reward 
employees. For example, one food hub offers an annual 
$400 “professional development stipend” for employees 
to attend food-related classes or conferences of their 
choosing.

Further resources:

Bureau of Labor Statistics National Compensation 
Survey. www.bls.gov/ncs/home.htm
The Good Jobs Strategy by Zeynep Ton. 
http://zeynepton.com/book
How to Calculate Employee Turnover. Discusses costs 
of turnover and several ways to think about it. 
www.payscale.com/compensation-today/2010/02/how-
to-calculate-employee-turnover

Common Challenge 3: Inventory 
Management

Inventory management has implications for food hub 
financial performance, both on paper and in reality. 
This section explores the importance of inventory 
management, approaches to setting up an inventory 
management system, and the costs of holding inventory 
items.
The importance of inventory in financial metrics

Food hubs that specialize in highly perishable products tend not to invest time and money in inventory tracking systems at the outset, which makes sense when their products turn over almost immediately. If inventory is being held for more than a few days, it is worth tracking, for several reasons:

- **Efficiency**: Calculating Days in Inventory or Inventory Turnover makes it possible to track how efficiently the food hub is moving its products and using its warehouse space.

- **Cash flow**: Since inventory turns are part of the cycle of converting Costs of Goods Sold into cash, knowing Days in Inventory (together with Days Receivable and Days Payable) allows the food hub to see how quickly sales are being converted into cash for the business.

- **Accurate valuation of assets**: Tracking inventory allows it to be listed as an asset, which improves the hub’s liquidity and solvency measures. Even if products are turning over very quickly, a large portion of current assets may be sitting in inventory at any given time.

Kate Danaher of RSF Social Finance says that inaccurate information about the value of inventory has led to problems for some food hubs, especially those that engage in or pay for processing. The valuation of each unit of inventory should reflect the Cost of Goods Sold for that product, which for processors includes the per-unit costs of processing. For example, suppose a food hub purchases a steer, has it processed, and places all the cuts of meat in a freezer to sell them separately. In the valuation of this inventory, processing costs ideally should be divided across all of the cuts of according to their weight; this is complicated, because prices per pound probably differ for each cut.

Such precise tracking may not always be possible, but managers should be aware that small discrepancies over time can lead to large cumulative discrepancies in the valuation of their inventory. Danaher suggests that managers revisit and reconcile their inventory valuation periodically, at least every quarter, so that discrepancies don’t accumulate. Otherwise, overstatements of inventory value eventually become unexpected write-offs that dig into the food hub’s margins.

Choosing an inventory management solution

Implementing inventory management involves more than just purchasing software for tracking. Dr. Caroline Krejci, a professor in the department of Manufacturing and Systems Engineering at Iowa State University, has studied inventory management solutions for food hubs. She explains that successful inventory management requires some sort of an informational gatekeeper to actively ensure that inventory information is kept up-to-date. The gatekeeper can be an automated technology solution, a staff person, or both.

If the gatekeeper is a technology solution, that solution should: provide standard procedures for logging items into and out of inventory; be straightforward enough for multiple staff to use; and make it difficult for people to bypass the system. (For large wholesalers, such systems usually involve handheld barcode scanners, which feed inventory adjustments directly into a computer system.) Staff who use the system must be trained to respect the importance of following standard procedures so that data is kept up-to-date.

If the gatekeeper is a person, he/she becomes the “funnel” through which all inventory-related information will pass. The recordkeeping system itself could be simple, since only one person needs to use it. It could be an Excel spreadsheet, a Google form or the inventory feature of Quickbooks™. The gatekeeper must take full responsibility for making inventory updates, and work systematically to make sure all information is correct.

Most hubs seem to start tracking inventory using Excel or the basic inventory functions of Quickbooks™ Professional. This software has limits, and depending on the hub’s needs, a more advanced solution may or may not be required later. Large distribution companies typically purchase inventory management capabilities as part of an enterprise resources planning (ERP) software solution. ERP software collects, stores and interprets data from many activities, including inventory, planning, marketing, shipping, and more. ERP systems are valuable because they can automatically trigger reordering of inventory items when stock is reduced to a
certain level. They also are built to interact directly with financial recordkeeping, so that financial statements will reflect accurate inventory valuations.

Some businesses choose to purchase an already-designed ERP package, while others have one custom-designed for their needs. Examples of ERP systems for food distributors include Edible Software, FoodConnex, and Produce Pro. Other ERP systems are specifically designed for food hubs. Examples of food hub ERPs that advertise inventory management capabilities include Delivery Biz Pro® and Local Orbit. Some software solutions that focus specifically on inventory. DEAR Inventory is a solution favored by Mad River Food Hub, because its lot-tracking capabilities support compliance with Good Agricultural Practices (GAP) and the Food Safety Modernization Act (FSMA).

New Venture Advisors offers the following framework to help food hubs evaluate the inventory capabilities of potential software solutions:36

- **Silver (good):** Inventory services are optimal for “just in time” and are largely grower-level. Minimal functionality that allows hub to view products that are owned by the hub and part of the hub’s supply chain.

- **Gold (better):** Tracks in-house inventory by “ordered, received, in warehouse, booked, etc.,” and tracks shelf-life and aging.

- **Platinum (best):** Includes produce specific characteristics, such as recognizing shelf-life/aging as unique from “received date.”

For more information on choosing IT solutions for food hubs, see [http://ngfn.org/resources/food-hubs/technology](http://ngfn.org/resources/food-hubs/technology).

### True costs of inventory

Sometimes inventory items such as frozen products or value-added goods have a higher gross margin than highly perishable items. Given the limitations of the growing season, a food hub may have good reason to stock up on large quantities of high-margin inventory items while they are available. However, it’s important to remember that holding inventory can be costly. Inventory holding costs include:37

- **Risk cost:** Costs from deterioration of products (shrinkage), theft, or damage while items are in inventory. This cost is very important for food purveyors and often can be underestimated.

- **Capital cost:** The “opportunity cost” of tying up capital in inventory that could otherwise be invested elsewhere or used to cash-flow the operation. For example, if holding inventory requires obtaining an operating loan to replace the cash invested in inventory, then the interest on the loan will be a capital cost.

- **Service cost:** The cost of managing inventory stock and insuring its value.

- **Storage cost:** The cost of warehouse space and handling during storage.

Total holding costs are calculated by adding up the four cost categories above. (Determining storage costs per unit is tricky if you already have a fixed amount of storage. It may or may not make sense to include these. Risk and capital costs per unit are a bit easier to calculate.)

If you know the Days in Inventory per unit of a particular product, you can multiply this by daily holding costs to get a rough idea how much it costs to hold each unit of product before it is sold. By subtracting this and other variable costs from the gross margin of an inventoried product, you can get a better idea of how the inventoried product compares to other products in terms of profitability.

Bear in mind that although holding inventory incurs costs, it also can reduce costs. Keeping more items in inventory can reduce ordering costs (costs of procuring more product) and shortage costs, which represent the missed opportunity of not being able to fill orders if inventory runs out.

Many theories of supply chain management address how to balance the risks of shortage against the costs of holding inventory. Conventional manufacturers, retailers, and wholesalers typically calculate the economic order quantity (EOQ): the optimal amount of product that they should order at a given time in order to minimize the sum of holding costs and ordering costs. The basic formula for EOQ is as follows:

\[
EOQ = \sqrt{\frac{2 \times \text{reorder cost per order} \times \text{annual demand for units}}{\text{holding cost per unit}}}
\]
A more complex version of this model is used by ERP systems to determine optimal order size and the level of stock that should trigger inventory replenishment. The latter calculation also considers lead time, or the amount of time between when the firm places an order and receives the order.

The EOQ concept may be less applicable to businesses that procure highly seasonal products or that pre-sell or broker items. However, it is relevant for businesses that purchase and hold inventory items, such as frozen or value-added goods, throughout the year.

Learn more about working with EOQs:

EOQ Model slideshow, by Ken Homa, Georgetown University McDonough School of Business. faculty.msb.edu/homak/homahelpsite_slides/EOQ.ppt

Investopedia video (for very general overview of EOQ concept). www.investopedia.com/terms/e/economicorderquantity.asp

EOQ calculator. www.ultimatecalculators.com/economic_order_quantity_calculator.html

Common Challenge 4: Equity and Financing

Note: The managing investor equity, managing equity from cooperative members, and investors in cooperatives sections below were contributed by Keri Jacobs, assistant professor of economics at Iowa State University.

In a finance presentation at the 2012 National Food Hub Conference, lenders urged food hubs to “guard equity jealously” and to set a timeline of goals for building equity. Businesses must increase their equity over time in order to grow sustainably, and they must have their own money in order to borrow money. Even if the firm rents its equipment and owns few physical assets, as sales increase it will still need an increasing amount of working capital to operate. If equity does not grow in tandem with the firm, the firm will need to borrow more, and over time it could become highly leveraged or even insolvent.

Food hubs can increase their equity in three ways:

- Profitability from operations,
- Infusions of capital from charitable funders if the food hub is eligible, and
- Contributed capital from owners, co-op members and/or investors.

In this section, we focus on the implications of the third item: contributed capital from owners, co-op members and investors.

Is equity financing appropriate for food hubs?

Compared with debt financing (e.g., loans and credit), equity financing from investors has several advantages. In some ways it is less risky than a loan, because it does not have to be paid back on a certain schedule, and there are no regular loan payments to detract from available working capital. Investors usually don’t expect an immediate return on their investment. The initial value of the investment does not have to be paid back if the business goes bankrupt, although some investors may have preferred access to liquidated assets.

On the other hand, investors may ultimately require a rate of return larger than the interest you would pay on a loan. Also, taking on investors involves giving up some control of the business, as we will discuss. For a business
that is strongly mission-driven, investor control has the potential to divert the enterprise from its founders’ mission.

Some food hub service providers believe that traditional equity financing is too awkward of a fit for food hubs. According to the Food Hub Benchmarking Study, the average hub experiences negative profit. A “typical” investor will be looking for a larger return on investment than a “typical” food hub can offer. Of course, there are atypical investors who are more patient with their capital, and there are atypical food hubs that can offer a more appealing ROI. Nonetheless, food hubs should be very cautious when deciding how to finance their operations.

Established, growing food hub businesses may wish to explore hybrid models of debt and equity financing, such as mezzanine financing. Examples include subordinated debt, royalty financing, and warrants. These bear varying degrees of similarity to traditional debt financing (for example, royalty financing does require debt service), and typically involve less loss of control of the business than equity financing. For examples, see:

Flexible Capital Fund, L3C (Vermont)  

Vested for Growth.  
www.vestedforgrowth.com/financing-options/deal-scenarios.aspx

For a more detailed comparison of debt and equity financing, see:

Debt vs. Equity Financing: Which Is the Best Way for Your Firm to Access Capital?  
www.nfib.com/article/ital-50036

Managing investor equity (risk capital)  

Individuals who contribute equity (risk capital) to a business often require control (voting rights) and/or a potential return on investment. Control over the activities of the company often is granted in proportion to the contributed equity. For example, an individual who contributes 10 percent of the raised capital might receive 10 percent of the voting share or control through stock shares. Similarly, distributions of earnings reflect the proportion of capital contributed when stock or shares are issued. If the firm is able to distribute a dividend to equity shareholders, the amount distributed per share or stock certificate is the same, and investors holding more shares receive a proportionally larger distribution.

Food hubs should weigh the costs and benefits of accessing investor risk capital. Some questions that deserve consideration:

- Does it make sense to give away voting control with equity? If not, then a higher return on equity might be expected to solicit investments.
- How much risk capital is needed, and for how long should investors expect to remain vested in the business? Is there a mechanism for investors to sell their investment, and how is this best structured?
- Can the business afford to divert earnings to investors? Earnings paid as dividends decrease ability to accumulate more capital. This has implications for access to debt capital, as well.

Paying dividends on equity (often called preferred stock) is a common practice for well-established and financially stable firms. However, guaranteeing a dividend is dangerous because of shifting business environments and market conditions. In unprofitable years, it is inappropriate to pay dividends on invested equity. Even in profitable years, it may not be in the best financial interest of the firm to pay dividends on shares of equity, because doing so reduces the firm’s overall equity amount. Food hub managers, in consultation with auditors and lenders, should decide when they are able to pay dividends on equity while maintaining the financial stability and growth of the food hub.

Managing equity from cooperative members  

A cooperative is intended to operate for the benefit of its members. Those benefits include control (voting) by members and financial benefit from patronage dividends. They also may include access to markets, marketing, or services that are otherwise missing in the local economy and that producers or consumers cannot individually access. All of these benefits come with a responsibility for each cooperative member: economic participation.
The concept of economic participation by users is unique to cooperatives; if one is to benefit from a cooperative, s/he must have “skin in the game” and participate in an economically significant way. In other words, it is the responsibility of the members to fund the cooperative through purchases or sales of goods and/or services. This is particularly true in the case of start-up cooperatives that have not yet had enough years to accumulate sufficient permanent equity via profitability. It is critical that the members understand their role in the cooperative: equity must come from 1) their own initial investments, and 2) accumulation of equity in the cooperative as the member participates in it.

There are a number of ways to capitalize a cooperative with members’ investments:

- **An upfront investment for payment of a membership share.** A cooperative can set a membership (stock) fee that permits a consumer or producer to become a member by purchasing a share. In this case, each share comes with one vote per member, and each member pays the same amount. For cooperatives with limited numbers of members, the purchase price per share could be significant.

- **Accumulation of equity through profit allocations.** A cooperative distributes a portion of its profits (a.k.a. “savings”) to its members. When it does this, it must pay at least 20 percent as cash, and can hold the remainder in the member’s name as allocated equity. Just as profits are allocated, losses are allocated to members, too. (This is another example of economic participation by members; they benefit from profits and share losses in unprofitable years.) Allocated equity is not permanent equity, because it must be returned to members at some future date — although this happens at the discretion of the board.

- **Accumulation of equity through capital retains.** Some cooperatives access equity by “per-unit retains.” This is an investment by a cooperative member in proportion to the quantity of products that the member markets or purchases through the cooperative. The cooperative implements this by setting a per-unit amount per quantity of product marketed that is deducted from the member’s receipts (sales proceeds). Fruit and vegetable marketing cooperatives often find this a useful model in lieu of patronage, because profits are highly variable. Per-unit retains can be redeemed later just like allocated equity, and have tax implications.

A co-op can only redeem member equity if profits are large enough to replace it with either permanent equity or additional newly allocated equity. Equity redemption is determined by the board and management, and must be managed carefully to ensure financial stability.

In marketing and processing cooperatives, the most efficient equity systems are usually the ones where members’ equity is roughly proportional to the amount of business they do through the cooperative. This can be achieved through a base capital equity program, or by using per-unit retains. Each member’s benefit from the cooperative is balanced with their contribution to the co-op’s business during a specified period. If equity is used to purchase depreciable assets, the ownership and depreciation of those assets will be “matched” over the assets life with the members who use it.

The cooperative determines the amount of equity needed, and then develops a strategy for assigning amounts to be received among its different classes of members. Cooperatives should communicate expectations (both privileges and responsibilities) that come with membership at the outset, and continue to do so regularly.

**Investors in cooperatives**

Cooperatives follow different rules from other business structures when obtaining risk capital in exchange for control (voting rights) and returns. Most states’ original cooperative statutes disallowed risk capital from passive investors by requiring that control be limited to members, who must be users of the cooperative and have “production at risk” (in the case of marketing cooperatives). Today, many states have newer statutes that permit cooperatives to obtain investments from non-members, but set limits on the payment of dividends and the amount of control that can be shared with non-members.

Cooperatives should be aware of an important tradeoff: invested capital often costs more than member equity,
and frequently involves a transfer of voting control. Member equity is, in some sense, viewed as a costless source of capital. Equity from investors, on the other hand, likely comes with expectations of both dividends and control. Cooperative boards and management should carefully consider the true cost of investor capital.

Further resources on equity:


Who Owns the Cooperative, from Keri Jacobs of the Iowa State University Economics Department. www.extension.iastate.edu/agdm/articles/others/JacFeb14.html

Cooperative Capital Structure, Equity Redemption and Taxation, also from Keri Jacobs. https://iastate.box.com/s/1w0i8vhhpikfqkqfjsfob2039mspng9

Section 6: Recordkeeping from a Manager’s Perspective

New businesses tend to take a bare-bones approach to accounting. They set up systems that meet their basic needs so that they can report to the IRS, pay bills on time, and monitor their own bottom line. As businesses grow, recordkeeping systems may evolve more slowly than the business does. But if accounting systems are organized to meet managerial as well as reporting needs, financial data can be a bigger asset to making decisions. “Closing the books” correctly at the end of each month also proves critical to producing useful data.

General Tips

The previous sections of this guide contained tips on recordkeeping. Here’s a summary:

On the income statement:

• In COGS, include the cost of actual products, processing for those products, inbound freight costs incurred by the food hub to pick up or process the products, and any costs of repackaging products into unit-sized containers.

• Record revenue and COGS separately by revenue center or program, in order to track gross margin by program. In Quickbooks™, one way to do this is by assigning a subclass to each program.

• Record sales and COGS by product line, e.g., Dairy, meat, produce, and value-added, in order to track gross margin by product line. In Quickbooks™, this can be done by setting up separate sales and COGS subaccounts for each product line you wish to measure, then assigning product items to them.

• Where possible, record costs of sales and labor costs by program, so that efficiency metrics and gross margin after costs of sales can be calculated for each.

• Separate inventory adjustments (shrink in inventory) from credits given to customers for quality-related issues, so that they can be tracked independently.
• Try to recover aged receivables, but write off accounts receivable that are more than 90–120 days old (if payments from the customer have stopped).

• Track write-offs by program.

On the balance sheet:

Try to show the actual market value of fixed assets by keeping depreciation as a separate account.

• Consider tracking inventory, and reconcile inventory valuations regularly.

• If different programs have different payment collection processes, subdivide Accounts Receivable by program, so that payment collection for each program can be monitored individually.

For additional ideas about how to set up Quickbooks™ for a food hub, see: “Using Accounting Software for Food Hubs: Processing Traceable Orders,” from former food hub manager Johnice Cross and Savanna Lyons of Iowa State University Extension and Outreach:
https://store.extension.iastate.edu/Product/14446.

Closing the Books

Financial and operational metrics are less useful for ongoing self-evaluation if they’re based on accounting data that are not up-to-date. To maintain the accuracy of your numbers year-round, it is helpful to follow a “closing checklist” at the end of each month and/or quarter.

Robin Morris of Mad River Food Hub lists the following benefits of following a standard checklist to close out each month:

1. For an accountant, office manager and/or bookkeeper, the checklist provides an action plan and reminder for completion of the monthly finance activities.

2. As a manager, you know the accounts are complete once the checklist is completed by whoever is doing the closeout.

3. As a part of closing out the month, reconciling your “cash” — including bank account(s), credit cards and financing (loans and leases) — ensures all bank and credit card transactions are entered.

4. Counting and posting of accurate inventory every month, as part of completing the checklist, is essential for robust financial records.

5. Reconciling monthly vendor statements will confirm that all monthly purchases have been correctly entered.

6. Reviewing customer invoices and checking that all monthly invoices were entered and sent will protect against “forgotten” invoicing.

7. Sending customer statements at the end of the month likely will prompt customers to alert you to errors, and accelerate payment.

8. Expensing a large capital purchase will affect your profit and loss. Part of the checklist process should be to ensure that these purchases are posted to your fixed assets, as per your fixed asset policy.

9. Posting pre-payments (such as annual insurance payments or deposits to the balance sheet) as prorated monthly expenses will reduce volatility in your profit and loss.

10. Reviewing your balance sheet and statement of cash flow as well as your profit and loss reports helps ensure accuracy. Does the report reflect your expectations, or are there unexpected changes in categories or accounts? How does it compare against prior months/quarters and budget? Reviewing regularly allows you to check these variations before sharing with your board, lenders, and team.

On the next page you will find Mad River Food Hub’s month-end checklist (Table 16). While this checklist is specific to Mad River Food Hub, its format can be adapted for any business.
### Sample Month-End Checklist

*Contributed by Robin Morris of Mad River Food Hub*

#### Inventory
- ☐ Storage pallet count
- ☐ Inventory count
- ☐ Cleaning/consumables materials inventory

#### Payables
- ☐ Review open orders against receipts and invoices
- ☐ Reconcile vendor statements
- ☐ Review accounts payable aging list

#### Expenses/Credit Card
- ☐ Review fuel expenses
- ☐ Review small equipment expenses

#### Payroll
- ☐ Paychecks completed
- ☐ Payroll monthly summary
- ☐ Post employer’s social security/Medicare entry
- ☐ State (monthly)
- ☐ FUTA/SUTA (federal and state unemployment insurance) - (quarterly)
- ☐ EFTPS (Electronic Federal Tax Payment System – used to pay the government) - (monthly)
- ☐ 941 (employer’s federal tax return) - quarterly

#### Invoicing
- ☐ Pallet storage
- ☐ Processing rooms
- ☐ Distribution
- ☐ Receiving/shipping
- ☐ Packaging
- ☐ Review revenue vs. last month vs. month prior year
- ☐ Review accounts receivable aging list
- ☐ Email statements

#### Journal Entries
- ☐ Inventory journal
- ☐ Depreciation & amortization journal
- ☐ Insurance policy prepayment adjustment
Section 7: Conclusion — and What’s Next?

Key financial metrics can be valuable tools to identify problems and help make managerial decisions based on data your business is already collecting. In this guide, we have provided suggestions on how to use these tools and then set goals and targets for your business, referring to benchmarks from various industries. We have discussed some common financial questions and concerns. We’ve also offered tips on setting up accounting systems so that they make useful information more readily available for managers. Now, how will you put these ideas into action?

We recommend that food hubs put together a dashboard of metrics and a plan for measurement that suits their own needs. Staff should be fluent in the metrics, and should understand numerical targets and their role in achieving them.

Here are some ways to get started:

- Identify which key metrics are the most relevant to your business. You could start with the general metrics in our template in Appendix A, modifying them to meet your needs. You also could think about operational metrics and ways of breaking each metric into useful parts. For example, it may be a good idea to measure sales by customer, product line, or drop-off site. It also may be useful to measure gross margins by program, customer, or product line.

- Identify how often it will be appropriate to measure, review and respond to each metric. See our template in Appendix A for suggestions.

- Identify who on your team should calculate, review, and respond to each metric, and how this will be integrated into their workflow. This depends on the management structure of your business and on who has the authority to take action at different levels. For example, an accounting person should probably evaluate days receivable on a week-to-week basis, because that job acts on billing issues. Sales staff should probably review sales per customer (especially for large customers) every week or month. But the whole managerial team and perhaps even the board of directors should be discussing metrics such as sales vs. Forecast budget, EBITDA, and net income every quarter.

- Identify what recordkeeping changes would be needed to make your metrics easy to calculate, and how staff will gain access to the data. If your metrics can’t be calculated in a few minutes using existing data, you might need to rethink your data collection or your choice of metrics. Check with your bookkeeper or IT provider about how to find the data you need.

You might also want to:

- Revisit the goals and targets in your current business plan; think about how new benchmarks and metrics might be incorporated.

- Download the spreadsheet template that accompanies this guide and experiment with calculating key metrics for the most recent quarter or year.

- Meet with staff and partners to discuss the system of measurement and agree on targets for future performance.


- Build self-evaluation checkpoints into your regular schedule.

Running a food hub is hectic, all-consuming work. It is hard to find time for reflection and evaluation. In the long run, remember that your performance data are your best tools for keeping your business viable and for sustaining your important mission.
## APPENDIX A: Food Hub Key Metrics - REFERENCE CHART FOR MANAGERS

Note: In this master list, benchmarks are color-coded according to source of benchmarking data. Color key is shown at the bottom of chart.

### CASH FLOW AND LIQUIDITY

<table>
<thead>
<tr>
<th>Name of measure</th>
<th>Calculation</th>
<th>Measure how often?</th>
<th>To compare to others</th>
<th>To compare to self</th>
</tr>
</thead>
<tbody>
<tr>
<td>Days receivable</td>
<td>(Avg. accounts receivable/revenue) x days in period</td>
<td>Weekly</td>
<td>Benchmarks from other businesses (see color key for sources)</td>
<td>Increase/decrease against goal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Broadline wholesale</td>
<td>22.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Produce wholesale</td>
<td>30.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Food hub</td>
<td>Recommended 30 days or less</td>
</tr>
<tr>
<td>Days in inventory</td>
<td>(Avg. accounts payable/COGS x days in period)</td>
<td>Weekly/monthly</td>
<td>Increase/decrease against goal</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Broadline wholesale</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Produce wholesale</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Conventional retail grocer</td>
<td>29.2</td>
</tr>
<tr>
<td>Days payable outstanding</td>
<td>(Avg. accounts payable/COGS x days in period)</td>
<td>Monthly</td>
<td>Increase/decrease against goal</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Produce wholesale</td>
<td>47.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Food hub</td>
<td>Higher than days receivable, but no more than 30 days</td>
</tr>
<tr>
<td>Current ratio (end of period)</td>
<td>Current assets/current liabilities (end of period)</td>
<td>Quarterly</td>
<td>Increase/decrease against goal</td>
<td></td>
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<td></td>
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<tr>
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<td></td>
<td>Conventional retail grocer</td>
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<td></td>
<td>Cooperative retail grocer</td>
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<td></td>
<td>Food hub</td>
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<tr>
<td>Working capital (end of period)</td>
<td>Current assets/current liabilities (end of period)</td>
<td>Quarterly</td>
<td>Increase/decrease against goal</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Specific to each business</td>
<td>Increase/decrease against goal</td>
</tr>
</tbody>
</table>

### PROFITABILITY

<table>
<thead>
<tr>
<th>Name of measure</th>
<th>Calculation</th>
<th>Measure how often?</th>
<th>To compare to others</th>
<th>To compare to self</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales vs. forecast budget</td>
<td>Actual sales/projected sales</td>
<td>Weekly</td>
<td>Refer to food hub’s own business plan</td>
<td>% Of target for business plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Broadline wholesale</td>
<td>16.3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cooperative retail grocer</td>
<td>36.0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Food hub</td>
<td>28.1%</td>
</tr>
<tr>
<td>Gross margin before costs of</td>
<td>(Sales – COGS)/sales</td>
<td>Weekly/monthly</td>
<td>% Of target for business plan, break down by program (wholesale, retail, etc.)</td>
<td>% Of target for business plan</td>
</tr>
<tr>
<td>sales (%)</td>
<td></td>
<td></td>
<td>Broadline wholesale</td>
<td></td>
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<td></td>
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<td></td>
<td>Cooperative retail grocer</td>
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<td></td>
<td>Food hub</td>
<td></td>
</tr>
<tr>
<td>EBITDA (%)</td>
<td>(Net income ($) + interest + taxes + depreciation + amortization)/total</td>
<td>Monthly</td>
<td>% Of target for business plan</td>
<td></td>
</tr>
<tr>
<td></td>
<td>revenue</td>
<td></td>
<td>Broadline wholesale</td>
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<td>Cooperative retail grocer</td>
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<td>Food hub</td>
<td></td>
</tr>
<tr>
<td>Net income (profit) (%)</td>
<td>(Total income – total expenses)/total income</td>
<td>Monthly</td>
<td>% Of target for business plan</td>
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<td></td>
<td></td>
<td>Food hub</td>
<td></td>
</tr>
<tr>
<td>Return on assets (%)</td>
<td>(Net income ($) + interest)/avg. Total assets</td>
<td>Annually</td>
<td>% Of target for business plan</td>
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<tr>
<td></td>
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<td>Broadline wholesale</td>
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<td>Cooperative retail grocer</td>
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</tbody>
</table>

Created by: Savanna Lyons, Leopold Center for Sustainable Agriculture and Iowa State University Extension and Outreach Local Foods Program. Reviewers and contributors: Craig Chase, Iowa State University Extension and Outreach; Georgeanne Artz, assistant professor of economics, Iowa State University; Robin Morris, Mad River Food Hub; Jesse Singerman, Prairie Ventures LLC; Kate Danaher, RSF Social Finance.
<table>
<thead>
<tr>
<th>EFFICIENCY</th>
<th>Monthly/quarterly</th>
<th>Broadline wholesale</th>
<th>3.00%</th>
<th>Increase/decrease against goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor to sales ratio</td>
<td>Total personnel expenses/total sales</td>
<td>Food hub</td>
<td>16.40%</td>
<td>Increase/decrease against goal</td>
</tr>
<tr>
<td>Labor to income ratio</td>
<td>Total personnel expenses/total revenue</td>
<td>Food hub</td>
<td>29%</td>
<td>Intuitive based on business</td>
</tr>
<tr>
<td>Sales per worker equivalent</td>
<td>Total sales/avg. FTE</td>
<td>Food hub</td>
<td>18.30%</td>
<td>Increase/decrease against goal</td>
</tr>
<tr>
<td>Revenue per worker equivalent</td>
<td>Total revenue/avg. FTE</td>
<td>Food hub</td>
<td>22.86%</td>
<td>Increase/decrease against goal</td>
</tr>
<tr>
<td>Vendor concentration</td>
<td>$ COGS from top 10 vendors/total COGS</td>
<td>Food hub</td>
<td>35%</td>
<td>Intuitive based on business</td>
</tr>
<tr>
<td>Customer concentration</td>
<td>$ sales to top 10 customers/total sales</td>
<td>Food hub</td>
<td>$431,872</td>
<td>Increase/decrease against goal</td>
</tr>
<tr>
<td>Asset turnover ratio</td>
<td>Total revenue/avg. assets</td>
<td>Food hub</td>
<td>3.00%</td>
<td>Increase/decrease against goal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SOLVENCY &amp; REPAYMENT</th>
<th>Quarterly</th>
<th>Broadline wholesale</th>
<th>84.70%</th>
<th>Local covenants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt service coverage ratio</td>
<td>EBITDA ($) / scheduled principal and interest payments for year, where EBITDA ($) = net income + interest + taxes + depreciation + amortization</td>
<td>Food hub</td>
<td>55.70%</td>
<td>Increase/decrease against goal</td>
</tr>
<tr>
<td>Debt to assets (%)</td>
<td>Total liabilities/total assets</td>
<td>Food hub</td>
<td>59.33%</td>
<td>Increase/decrease against goal</td>
</tr>
</tbody>
</table>

Color key for sources of benchmark data

<table>
<thead>
<tr>
<th>Type of business benchmarked</th>
<th>Size of businesses</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperative retail grocer</td>
<td>Under $2 million in sales</td>
<td>“Strong Performance, But Can We Sustain It?” Cooperative Grocer, July-August 2006.</td>
</tr>
<tr>
<td>Food hub (recommendations)</td>
<td>N/A</td>
<td>Recommendations from Kate Danaher of RSF Social Finance.</td>
</tr>
</tbody>
</table>
References


2. Ibid.


8. Ibid.


11. Ibid.


14. Note: The NGFN benchmarking study (see reference 6) counts all labor costs in costs of sales, regardless of whether they were performed by hourly or salaried workers. Following this method requires tracking how much time salaried as well as hourly staff spent on trucking and packing activities.


Additional Resource

The author has developed an Excel™ tool, “Dashboard of Key Metrics,” to go along with this guide. It allows food hub managers to enter data from their own food hubs and calculate their key metrics. Both this publication (LF-0015A) and the tool (LF-0015B) may be downloaded free from the store: https://store.extension.iastate.edu. You may search by title or publication number.

For more information on food hubs, visit the Local Food Program’s resource page at www.extension.iastate.edu/localfoods/food-hubs, or contact Craig Chase, local foods program manager, at cchase@iastate.edu.

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