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# Compatibility of Open Source Accounting Solution for Small Businesses in India – GNU Cash

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## **Abstract**

*The contribution of micro, small and medium industries in the panorama of Indian business is huge both in terms of share in GDP and total employment. Financial accounting is an indispensable function for any business and Most of the companies have shifted toward computerized Accounting System. Yet only around 5% of the companies in MSME sector use computerized accounts. This research explores the feasibility of using GNU Cash, a free and open source accounting software, developed by bunch of MIT people around 9 years back for Indian companies. This research paper is based on primary study of the software GNU Cash and its benchmarking to popular accounting softwares prevalent in Indian markets. This paper finds the merits of GNU Cash and makes recommendations on specific issues/features which would make the software more suitable for Indian use. Also the paper considers the key areas of accounting information generation in the real life scenarios at the voucher level. The features compared and suggested in this research paper are all relevant from business perspective in our country.*

*Keywords: MSME, Accountancy, Software, Free Software, Open Source, Software Development*

## **Introduction**

### **Indian Small Business Environment**

The micro, small and medium enterprises (MSME) sector contributes significantly to the manufacturing output, employment and exports of the country (GOI, MSME Annual Report 2009-10). It is estimated that in terms of value, the sector accounts for about 45 per cent of the manufacturing output and 40 per cent of the total exports of the country. The sector is estimated to employ about 59 million persons in over 26 million units throughout the country. Further, this sector has consistently registered a higher growth rate than the rest of the industrial sector. There are over 6000 products ranging from traditional to high-tech items, which are being manufactured by the

MSMEs in India. It is well known that the MSME sector provides the maximum opportunities for both self-employment and jobs after agriculture sector. Financial Accounting is a very important area for every business including MSME. The organized book keeping with the help of accounting software is restricted only to around 5% of the entire MSME mainly due to low

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capital outlay on softwares by them. Also the manual bookkeeping has scope for manipulation which might be encouraging them to stick to that system. This research is intending to provide information to MSME to explore open source solution for the accounting needs.

### **Open Source Software Intricacies**

The major plus point of Open source softwares (OSSs) is that they can be downloaded free of charge and often have same functions as expensive proprietary systems allowing clients to migrate to OSS at a low total cost of ownership (TCO). Also, the open source development model promotes the rapid correction to problems making it easier to customize at the level of client in accordance to business needs. Traditional accounting systems are sold under a proprietary license agreement designed to protect the intellectual property right of the developer. Under the OSS philosophy, a community of developers creates the accounting systems, and the intellectual property right is open to the community. Users are able to read, redistribute and modify the source code. With an OSS, the user actually owns the software; under proprietary (closed source code) systems, the copyrights are leased. The General Public License (GPL) is the standard template typically used by OSS creators and vendors. In this same spirit, improvements that users make to the software must be made publicly available.

Regarding the extensivity of the use of open source accounting systems, it can be said that OSSs have been adopted in a number of commercial enterprises and industries indicating that it is only a matter of time before development spreads to accounting and enterprise systems. OSSs will not replace existing Windows systems but they will provide the market with a viable alternative in near future. OSS functional elements include accounting software modules support specific functions such as general ledger, accounts receivable, accounts payable, purchase order, sales order, inventory management and fixed assets. A few OSSs do operate at the enterprise level including support for operations like inventory and manufacturing. There might be some cases of open source softwares requiring initial configuration specific to a particular company while there are various consulting firms who support these activities.

### **Accounting Software Selection and Customer Satisfaction**

Elikai F, Ivancevich D M and Ivancevich S H, (2007) conducted a study to provide insight into factors and features which are most important to users in selecting, retaining or changing accounting software packages. The survey also asked respondents to identify the most satisfying features as well as those most needed to improve. Authors also compared the software ratings of large versus small firms to identify key differences in observations between the two groups.

The findings of the study include first, the functionality/capability of software as the most important factor category to users in selecting software followed by cost and compatibility. Within the functionality/capability category, the flexibility (customization) feature was rated as the most important by participants by a wide margin while multi-company features, web access capabilities, international capabilities and graphics were rated as relatively unimportant. Flexibility (customization) also stood out as a key feature for user satisfaction followed by real-time processing and price. With respect to features in need of improvement, users were least satisfied with report writing, flexibility and annual operating costs. Also with respect to why companies change their software, flexibility (customization) rated as the most important feature, followed by transaction processing capabilities. Not surprisingly, the primary reason for companies not to change software is that they are happy with their existing software. Nevertheless, the costs, disruption and effort required to change are also quite important.

Key differences were also noted in ratings of factors and features between large versus small companies. Many significant differences seemed to be driven by size, complexity of operations or capabilities of software. Interestingly, the top five reasons for not changing software were fairly similar between the two groups. Vendor support stands out being rated as relatively unimportant to users. It appears that users are much more concerned with how the software helps their business needs than the reputation and support of the vendor. In other words, users appear to be attracted to a great product that fully meets their needs, more so than looking to a

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particular vendor in hopes of finding that its product comes close to meeting their needs.

## **GNUCash**

GNU Cash is identified as the prospective solution for meeting the accounting needs of MSMEs free of cost and also conforming to international standards. This research goes ahead to analyze the feasibility of the software for use in MSMEs and also the managerial recommendations for improving it to the standards of the reputed software available in the market. This paper first focuses on the basics of accounting and also the need for accounting software in companies. Then briefly this research focuses on the major players in the accounting software market to compare GNU Cash with them from technical point of view. Specific research areas have been identified and global feedback has been collected for issues. The research paper's findings and recommendations can be used by freelance software developers worldwide and modify their products according to Indian needs.

## **Research Scope**

The scope of the research is limited to three accounting softwares Tally.ERP 9, Busy 3.6 and GNU Cash 2.2.9 currently available in India. Also, the comparison is limited to accounting features of these softwares. Though the scope of the study is limited as mentioned above, it is worthwhile to note that the features mentioned in the recommendations can be easily applied to other accounting softwares as well for adapting them for better results in the accounting softwares.

## **Research Design**

### **General Methodology and Procedures**

This has been completely a primary research where data are processed for comparison by entering accounting entries in each of the software and then understanding their operations. The steps included-

- Installation of GNU Cash and understanding its features
- Installation of Tally and Busy thereafter understanding its features for a similar set of data

- Developing comparison framework for GNU Cash
- Suggesting recommendations for GNU Cash

## **Data Source Specifications**

Data taken for designing the comparison of softwares are from primary sources. The same set of transactions is entered in three softwares to understand its functionality and generate data required for designing the comparison framework.

## **Data Collection, Analysis Procedure and Interpretation of Results**

Depending on the business needs of the MSMEs and various functionalities present in the reputed softwares, data on the comparison designing framework have been collected. Data analysis have been done by evaluating the framework parameters by entering similar type of entries into each of the software for verifying its presence. Absence of any required feature have been considered for recommendation. The practical facets of each software have been captured in the training module.

## **Technical Comparative Analysis of 3 Softwares**

### **Financial Accounting**

Financial accounting is the basic module in any accounting software. It concerns with the entry of day to day accounting transactions. The key features needed in this module are:

### **Book of Accounts**

Every entity in accounting is represented by an account entity. These entities are classified under any one among – asset, liability, equity, revenue or expense. The book of accounts contains all the accounts of the company. For example, if we have an office building, it is recorded in the account, 'Office Building' under assets. This way, we will be able to group the accounts according to their accounting nature and do the accounting process easily.

GNU Cash comes with a custom book of accounts which can be used directly for accounting. Also, additional accounts can be created as needed.

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In Tally and Busy the basic structure is present but we need to create the accounts individually.

### Basic Financial Statements

Every business needs to generate various financial statements for regulatory purposes as well as for analysis. These include Balance Sheet, Income Statement, Cash Flow Statement, Statement of retained earnings, various tax reports.

GNU Cash provides all these except tax reports. Additionally, graphical presentation of these statements is possible.

Tally and Busy can generate all the needed financial statements.

### Cost Center

A company may have one or more branches and it would need to monitor the performance of each of these branches. It includes the revenue and expense of each branch. Also, when revenue is generated or expense incurred, it should be allocated to a specific cost center.

GNU Cash does not have this feature of 'Cost centers'.

Tally and Busy have this feature and separate reports for each cost center are also possible.

### Credit Limit

In business, most of the sales are done on credit. A company plans to control its credit sale with a customer by setting credit limits for each customer and ensuring that the customer does not exceed the credit limit.

GNU Cash does not have an effective credit limit feature. It uses credit limit data only for indication purposes.

Tally and Busy have effectively implemented credit limit feature.

### Tax & Cess

Different types of tax rate and cess are applicable from Indian business point of view. The most frequently used tax rates include -

- VAT (Value Added Tax) – Taxes on the true value added to the product at each point of the transaction chain.
- CENVAT ( Central VAT) - Tax on Value Addition on the goods manufactured according to Central Excise & Customs Act Definition
- CST ( Central Sales Tax) – Tax on inter-state sales of goods
- Excise – Tax on goods produced or manufactured in India intended for home consumption
- TDS (Tax Deducted at Source) – The buyer deducts the income tax from the payment made to the seller and remits the tax to IT department within stipulated period of time.
- Other taxes not mentioned above

Similarly Cess is added in addition to taxes applicable for a particular voucher. All taxes in India are subject to an education cess which is 2% of the total tax payable. With effect from assessment year 2008-09, Secondary and Higher Secondary Education Cess of 1% is applicable on the subtotal of taxable income. Mainly education tax is applicable on excise duty and service tax. The commonly used cess includes :

- Educational Cess
- Secondary and Higher Secondary Cess

Following Tax Features critically are required in business and expected from accounting software :

- Multiple Tax Entry

Different types of taxes are levied at a time in a voucher. For example, when we are generating a sales voucher providing a professional service, there is the need for at least three interlinked taxes like Service Tax Educational Cess on ST, Secondary and Higher Secondary Cess on ST. The first tax is an absolute tax, while the other two are dependent on it. So this type of dynamic adjustment of taxable amount is done by the accounting software.

GNU Cash can have multiple tax entries built in the form of tax tables to be included in the voucher during its creation. Tally and Busy may implement the feature quite efficiently.

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## Input and Output Taxes

Same tax can be an input to an organization as well as output from the same organization. Taking example say when you provide service you charge Service Tax, which comes to your organization as output tax. Similarly, when you avail service then you pay Service Tax which is an input tax to your organization. The return filing at the end of realization period happens for the net Tax amount which have been cash realized (more explanation in 3rd point) or settled. So these tracking and reporting are also done by accounting software.

GNU Cash keeps track of the resultant taxes from both input and output operations of each tax. But it populates all of them in one ledger, not categorizing them into input and output taxes. Tally and Busy populates of the voucher formation in separate ledgers of Input and Output taxes of various type from the very beginning.

## Tax adjustment on Partial Realization

Depending on the amount of tax paid for availing the service, there is a rebate which happens in the assessment of tax input to the organization. But this rebate is limited to realization of the payment in cash only and not on accrual concept. Suppose you raise an invoice for 1lac INR output service tax, but realize only half i.e. INR 50000 of that as of now in this period. So you can avail tax benefit on the paid portion only but not on the invoiced amount of tax. Adjustment due to partial realization is not separately recorded in GNU Cash. Tally and Busy maintain separately in different and respective accounts the partial repayment and realization of taxes. Individual reports can also be retrieved from them.

## Localization

The tax rates as well as different forms/challans required for filing each tax at the end of the realization period are inbuilt in the accounting software, so that when the net tax is calculated as described in previous feature, it automatically generates the challans and reminds the company the filing dates. Now the tax forms and rates change state by state, region by

region. The software takes care of this from the incorporation details of the company when it is entered into the software for the first time. GNU Cash totally lacks localization. Tally and Busy are highly localized.

## Inventory Control

The raw materials, work - in - process goods and completely finished goods that are considered to be the portion of a business's assets that is ready or will be ready for sale. An effective management and control of inventory is required for a company to be efficient. The accounting software should help in tracking the inventory level and provide details as to when to place order for materials. GNUCash is targeted for personal finance and small business applications and does not have the feature of inventory control. Tally and Busy have the feature of inventory control.

## Data Export/ Import

Accounting software produce various reports and hence it becomes essential that these reports can be exported from the accounting software in various formats viz., MS-Excel, XML, etc. Also if a company plans to change its accounting software, in order to avoid duplication of work, all accounts and transactions should be exportable from the old software to the new software. Hence data export/import feature becomes quite important for accounting software.

GNUCash has limited export/import options. It can export only to formats – QIF, OFX, HBCI.

Tally and Busy on the other hand can export/import from MS-Excel, ASCII, XML, HTML files.

**Table 1: Technical Comparative Analysis of the 3 Softwares**

Module	Feature	GNUCash	Tally, Busy
Financial Accounting			
	Book of Accounts	Yes	Yes
	Basic Financial Statements	All except tax reports	All
	Cost Center	No	Yes
	Credit Limit	No	Yes
Tax			
	Multiple Tax Entry	Yes	Yes
	Input and Output Taxes	Yes	Yes
	Tax adjustment on Partial Realization	No	Yes
	Localization	No	Yes
Inventory Control		No	Yes
Data Export/Import		Few formats - QIF, OFX	Many formats - MS-Excel, XML, ASCII, HTML

**Strategic Research on Some Features**

Study was done to explore GnuCash regarding the following features:

1. Hosted Solution
2. Paid version of GnuCash
3. Multiuser facility
4. Cost centers

**Hosted Solution:**

Gone are the days when software needed to be installed in a computer in the office to obtain the benefits of it. The latest advancement is the concept of 'Hosted Solution'. In this, the software is installed in a server in some location typically at the service provider's premises. Users can access the software through the internet. This eliminates the costs of installation and data storage. If GnuCash can be



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installed in a server and made accessible over the internet, it would provide a good business opportunity to a service provider. To find the feasibility for this feature, the GNUCash developers were contacted through e-mail. Unfortunately, it turned out to be that GNUCash is a pure desktop application and web hosting is not possible.

#### **Paid Version of GNUCash:**

Often it happens that the free software has a paid version of the same product with some additional features. It was planned to look out for such paid version of GNUCash and study the additional features, if any, in that and try to develop similar features using a team of developers at any firm. However, GNUCash does not have any paid version of it and comes only as completely open source free software.

#### **Multuser Facility:**

A level of data abstraction is required to protect the integrity of data in companies. For example, in a the business scenario, an accountant enters only the expense details of the company, another accountant enters only the revenue details of the company and the manager should be able to view all the data. For this to be implemented, multuser facility should be present in the software. Again, GNUCash is designed for simple applications and hence the multuser facility is not custom built into the software.

#### **Cost Centers:**

As we saw in the critical features part, the cost center is a feature frequently used by companies and hence the accounting software should provide this feature. Though this feature is currently not present, GNUCash being open source software could be enhanced to implement the feature. However, the developers opined that such enterprise level features can't be implemented in GNUCash.

#### **Findings and Conclusion**

The study of GNUCash and its comparison with the market leaders like Tally and Busy reveals that GNUCash can be marketed for a niche segment characterized by the following framework.

#### **Features of GNUCash**

##### **Following are the features of GNUCash**

- Double entry system of accounting
- Easy to use
- Visual interface
- Customized book of accounts
- Built in customer, vendor and employee management module
- Various financial statements and reports
- Reminder for pending bills
- Reconciliation
- Cheque printing
- Generating customized invoices

#### **Advantages of GNUCash**

##### **GNUCash has the following advantages over its competitors like Tally and Busy:**

- Easily usable visual interface
- Open source, hence modifiable as per customer requirements
- Visual reports and Graphs
- Built in customer, vendor and employee management module

#### **Disadvantages of GNUCash**

##### **GNUCash has the following disadvantages when compared to Tally and Busy**

- Inventory control and management is absent
- Localization as per Indian tax rules is not done
- Tax reports are not developed
- Cost center or branch wise accounting can't be done
- Absence of hosted solution

#### **Target Segment**

##### **The target segment for GNUCash is:**

- Organizations needing single user license
- Organizations that have varied geographical presence but the accounting is done at a single place
- Organizations that don't require inventory management and control

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## USP of GNU Cash

**It can still be used by companies in MSME sector for the following Unique Selling Propositions (USP):**

- Free of Cost
- Easily usable visual interface
- Open source, hence modifiable as per customer requirements
- Visual reports and Graphs

Thus, we can conclude that GNU Cash is accounting software which is totally capable of doing all the functionalities needed by the target segment identified but needs some modifications in its freely available code so as to make it useful for larger organizations as well.

## Software Re-engineering Recommendations

Based on our study, following are our recommendations regarding the enhancements needed in GNUCash.

### Taxation:

Every company operating in India has to comply with many tax laws and hence this module becomes the quintessential part of accounting software.

1. Develop localized tax rules and accounts such as, Service tax, Excise, TDS, etc. These should be custom built into the software taking into consideration the various tax rates prevailing in various states. The software should provide with a readily available list of all these rates to choose from.
2. Implement partial repayment of tax for the amount only cash is received. Currently, only full payment of tax is possible.
3. Develop enhanced tax reporting features. Though we have a tax report feature, it is very simple and can't cater to the requirements of Indian SMSEs. Develop separate reports for every type of tax.

## Financial Accounting:

This is the basic and most frequently used module. GNUCash has this module almost well developed; still the following enhancements can be done.

1. Find a way to implement the cost center feature or branch wise reporting.
2. Advance the credit limit feature from just being an indicator entity to a more useful and powerful feature. Checks for credit limits should be done every time a customer is invoiced.

## Inventory Control:

This module is completely absent in GNUCash. However, companies need this functionality in the software.

1. Develop an integrated inventory control module.

## Data Export/Import:

1. Advance the current export/import feature to cover much used formats such as XML, MS-Excel, ASCII, etc.
2. Develop procedure to migrate data from software like Tally, Busy, which are the current widely used software, to GNUCash.

## General Features:

1. Show the list of all customers or vendors in a single screen. Currently, only a single customer can be viewed or we have to browse for a particular customer or vendor.
2. Modify the settings of report so that a change once performed is remembered by the software. Currently, we need to configure the report by accessing the 'Options' tab, every time a report is generated.



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- <http://www.busy.in/>
- <http://www.gnucash.org/>

### Exhibit 1: Price Benchmarking (*Source - Individual Websites*) Competitor's Price Benchmarking

Software	Version	Number of User	Price
Busy 3.6	Basic	Single User	4500
	Standard	Single User	7200
		Multi User	18000
	Premium	Single User	10800
		Multi User	27000
	Enterprise	Single User	13500
Kalculate	PRO PRO-LAN	Multi Company Multi Year F. A. + Inventory	5,975
		PRO version on LAN	7,975
Tally	ERP 9 Silver	Single User	13500
	ERP 9 Gold	Multi User	40500
GNU Cash			FREE