Decentralization Support Activity Project
There would be enormous risks involved in replacing the current system with a new off-the-shelf system. To take such a decision would have to be on the grounds that the existing system is technically unsound. There is no evidence that this is the case.

There has been no adequate cost-benefit study that would justify the huge capital and recurrent costs of an off-the-shelf system, as well as writing off the costs of the present system. The software cost comparison between the current system and the proposed system is as follows: proposed system - $6.45 million for 5 installations; current system - $2 million for 158 installations. These data give some idea of the scale of the cost-benefit difference between the two approaches – note of course that the existing system exists.

From a technical perspective, an off-the-shelf system would incur higher costs in Ethiopia than many countries because of the particular features of the country and its fiscal system.

An off-the-shelf system is very likely to be unable to be adapted entirely to the existing financial system. Changing the financial system would itself have large financial and transaction costs.

Recent evidence published by the World Bank confirms the very high failure rate and high cost of IFMIS projects.

The government does not need to make a decision at this time to introduce a new financial system. The upgrade of the current financial system (IBEX) should be completed and government should focus all of their IT resources available in the finance area to implement the current systems nation-wide by the EFY 1999 deadline.

A strategy of pursuing two financial systems simultaneously (rollout of the current system and introduction of a new off-the-shelf system) is costly duplication and would jeopardize the government policy of nation-wide rollout by EFY 1999.
The Issue

Why should you build a custom (bespoke) system when you can buy a system off-the-shelf? This is the principal argument made by the European Union IFMIS consultant for replacing the current government financial systems developed under the Civil Service Reform Program. This question is academic as there is already a custom system, and could be better phrased ‘Why should you buy an off-the-shelf system when there is already a custom system in place?’

Specialists in public financial management have raised numerous concerns about the risk and cost and appropriateness of overly sophisticated financial information systems. A recent review of these systems recommended that governments (and their development partners) answer four questions before procuring such systems:1

- Can the country afford the system—or is a ‘soft’ loan simply encouraging profligate expenditure?

- Does the government have both the technical capacity and future financial resources to sustain the ‘gold-plated’ system.2

- Most importantly, will the new system enable better government?3

- Could most of the benefits be achieved with a simpler and less expensive solution?

Taking these questions into account, there are seven issues that need to be considered in deciding whether a new off-the-shelf package approach to financial systems is needed.

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2 And in the case of Ethiopia does the government have the technical and financial resources to simultaneously support the development, implementation and rollout of the current system and introduce a new system?
3 International experience demonstrates that IFMIS’s do not curb corruption in government which is one of the major arguments put forward to procuring these systems. Corruption is often the result of the weakness of the ‘soft’ systems (the manual system and management) and can even be exacerbated by the introduction of complicated computer systems. Bill Dorotinsky, Technology and Corruption: the Case of the FMIS, The World Bank, March 26, 2003.
1. Custom versus Off-the-Shelf (OTS) Approach

The principal arguments for an OTS system are that it is cheaper because (a) it provides a comprehensive array of functions that fully meet user needs and, (b) it can be taken ‘off-the-shelf’ and rapidly implemented. Note also that the debate between a custom versus an OTS solution is in many ways academic since OTS systems have to be customized and custom systems often use OTS components (e.g. the IBEX upgrade of the current financial systems will use a third party security OTS package—‘SiteMinder’).

Assumption 1: Off-the-shelf (OTS) packages can be rapidly implemented

The question that must be asked of an OTS approach is how much customization is needed to meet government requirements. Customization takes time and is costly. Vendors of OTS software do not provide the computer source code so there are limits on customization and significant changes (modification) are not possible within a reasonable cost. With an OTS solution, the government has to adapt to the software but with a custom solution the software can be adapted to government requirements. It is thus not at all obvious that over time an OTS solution is cheaper, or that there is a higher benefit-cost ratio.

Government requirements for financial information systems in Ethiopia are constantly evolving as government policies evolve according to experience and need (e.g. second stage devolution to weredas, single pool, zero balance treasury accounts) and demands of development partners (e.g. conditionalities for a consolidated budget and evolving data exercises—Joint Budget and Aid Review, Fiduciary Assessment, etc). As those requirements change, reports change, and the way the budget is consolidated nation-wide changes. This evolutionary process would create expensive demands on OTS providers.

Since an OTS system is costly to customize and limits customization, a precondition for implementing an OTS is the existence of mature (stable) and institutionalized budget and accounting policies and procedures. These are still evolving in Ethiopia and a custom system is more flexible and responsive to these changes and would not incur the large additional costs that a commercial supplier would ask if policy changes are made mid-implementation.

Moreover, there are aspects of the Ethiopian system that require a significant level of customization, including the need for different languages. The current financial systems developed by the DSA project operate in four languages (Amharigna, Tigrigna, Oromiffa, English) and can be modified to run in additional national languages. The systems generate over 120 reports in national languages and additional reports can be rapidly developed. For the preparation of the EFY 1997 budget 14 new reports were prepared within a week for the
Ministry of Finance and Economic Development for presentation to the Prime Minister.

A customized system is also needed to consolidate nation-wide budgets and accounts. Ethiopia is currently managing multiple formats of budgets and accounts given the sequencing of implementing the new budget and accounts reforms across regions. The early reforming regions are operating the new chart of accounts and double entry system while the later reformers are still using the old chart of accounts and single entry system. MoFED will have to ‘map’ these various systems for a six year time frame (EFY 1994-EFY 1999) in order to consolidate the national accounts. It is unlikely that any OTS system will have the capability to manage the consolidation of multiple custom accounting systems unless it is significantly customized.

The virtues of a custom approach have been demonstrated for public financial management in Ethiopia and internationally. The Addis Ababa Bureau of Finance and Economic Development has procured a custom tax system (‘SIRM’) which has been operating for over a year and has helped the bureau increase revenues four-fold. BoFED used a custom approach because it was the only way its requirements could be met. No OTS system was available that could exactly meet the requirements of BoFED for tax administration. For the same reason the Government of South Africa procured a custom treasury system.

Assumption 2: OTS systems have comprehensive functions which custom systems do not have

Experience has shown that successful implementation of financial systems is achieved by limiting comprehensiveness initially and focusing on integrating a core set of financial functions. The core systems are typically a general ledger, accounts payable and receivable and financial reporting. The more comprehensive a system, the more complex and the greater the risk of failure. The current financial systems have precisely the three core financial functions (budget, accounts, expenditure planning) recommended by international best

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4 The Addis Ababa BoFED custom tax information system is the SIRM (System of Integrated Revenue Management). See also, Addis Ababa BoFED, “Presentation on the City Management Reform,” January 2005.

5 Case Study: South Africa Treasury, www.treasury.gov.za/. This custom system was developed and implemented by the international consulting firm of Accenture. Accenture implements a variety of OTS installations for both corporate and government clients but in the case of the South African treasury found that a custom system best suited the client’s requirements.

practice. They have also been developed incrementally based on extensive consultation with government staff. An incremental approach is appropriate because users refine their requirements over time as they become familiar with a financial information system. An OTS often provides costly functionality that may be of little relevance or use.

2. Cost

Information system projects are notorious for exceeding budget and schedule without achieving specifications. The cost comparison between the current system and the proposed system is as follows:7

- Proposed OTS system: $6.45 million for 5 installations
- Current custom system: $2 million for 158 installations

The above costs for the current system are actual costs for a system that exists. The costs for the proposed OTS system are estimated and international experience shows that these are often exceeded (frequently in multiples).

The costs of the current system are fully documented in the Phase 4 proposal of the DSA Project. The costs of the proposed OTS are not documented. These costs should be presented using a format such as found in the World Bank Treasury Diagnostic Toolkit for a treasury project.8 In addition to consulting, equipment and software, and training the proposed system should clearly state the following costs:

- Initial customization costs
- Version upgrade customization costs which will also apply for any commercial package (that has been adapted for government) as each new version is released
- Annual license fees: major vendors are changing from the number of current users to the number of named users, thus increasing the numbers of licenses that have to be purchased for any particular client

Added to the investment cost is the maintenance cost. International rule of thumb is that maintenance costs for five years is 15% of the software investment cost.

The point must also be made that developing custom systems creates public and private sector IT capacity in Ethiopia. In addition to the financial cost-benefit a social cost-benefit needs to be taken into account. As far as I am aware there has been no proper cost-benefit analysis of the procurement of an off-the-shelf package.

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7 These figures are for software costs only.
The World Bank’s estimate for an IFMIS installation in a three tiered government is approximately US$23 million.  

3. **Integration with the Existing Budget, Accounts and Expenditure Planning Reforms**

A package solution is a top-down approach and is not integrated with the budget, accounts and expenditure planning reforms which have been underway for eight years and contracted for an additional two years for a total cost of $30 million. Over 30,000 staff have been trained in these procedures and an additional 28,000 will be trained over the next two years. If the proposed package solution cannot replicate the budget and accounts procedures exactly then the government will have to revise the newly introduced systems and retrain the staff that implement them. This would create huge sunk costs that should be unacceptable in the presence of such scarce resources. It would also jeopardize the completion of the reforms.

The argument by the EU IFMIS consultant that the proposed OTS would not replicate existing procedures and would reengineer current business processes entirely is inappropriate given the breadth, depth, effectiveness and appropriateness of the ongoing financial reform. The IFMIS consultant is recommending that the reform be restarted and is also recommending an inappropriate strategy of technology-driven reform which international best practice refutes.

> “A bespoke system is likely to replicate existing procedures, whereas an off the shelf package will represent best practice and provide the opportunity to improve business process in its entirety.”

4. **Time Line**

The new financial system which is to be piloted in five federal ministries for two years would not meet the government’s policy priority of implementing the budget and accounts reform by EFY 1999. Even if the pilot is successful, it would not be applicable to implementation at region and wereda level so additional time would be required to pilot this solution at these administrative levels. The new financial information system would almost certainly not be available in regions and weredas for three or four years.

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The government’s Public Sector Capacity Building Program (PSCAP) requires as a “Minimum Mandatory” capacity building activity for regions to be eligible for follow-on funding the following activities:

- Elimination of the backlog of accounts at regional and local levels
- Installation and training in the medium-term expenditure management procedures manual
- BIS and BDA 3 (the current financial systems) in all regional and wereda institutions.\(^{11}\)

Introducing a new financial information system at this time would delay this high priority government program. Introduction of a new financial system would also delay the management of accounts which would increase the backlog and would delay the execution of the expenditure management reform. A further issue is which local resources and knowledge would be seconded to any new systems design and implementation? This would consume the time of several staff of the Central Accounts Department of MoFED which are already heavily committed and probably much of the DSA resources as well.

To achieve the PSCAP objective of automating financial systems at wereda level, the DSA project is currently upgrading the current financial systems to operate on the government’s new wide area network (WEREDANET). This upgrade (IBEX) will be available for EFY 1998 to utilize the significant government investment in the Information and Communication Technology (ICT) infrastructure and will provide a cost effective means of automating financial management at all levels of government especially weredas.

The current systems have taken several years to develop, refine and implement. An OTS system will also require several years. A strategy of pursuing two financial systems simultaneously (rollout of the current system and introduction of a new off-the-shelf system) is costly duplication and would jeopardize the government policy of nationwide rollout by EFY 1999.

5. **Risk**

The current financial systems are proven and have a demonstrated track record and manage approximately 95% of public expenditure. The Federal budget and expenditures are managed through these systems, as are all the large regions. There have been no failures in the systems, although there are developments that are required to bring them to the final required standard: those developments are now taking place. In other words, to justify replacing the systems would require specific technical arguments that

invalidated the systems by showing that they are fundamentally unsound and need to be replaced.

Ethiopia’s fiscal devolution poses a serious challenge to implementing financial information systems at all levels of government especially in weredas. Shortage and turnover of skilled staff and limited infrastructure are just some of the obstacles to automating financial functions. Under these conditions, experience has shown that automation must be carefully paced and well supported. It is also essential that computer systems be seamlessly integrated with a manual system given the uncertainties of the infrastructure. Financial management in weredas must be reliable and must function even if the infrastructure needed to operate computers (e.g. power) fails.

A ‘big bang’ approach with a new complicated information system is likely to fail. International experience confirms that it takes time to introduce new information systems and the more complicated the system the more difficult and lengthy the process, and the greater the risk and likelihood of failure.

A recent World Bank assessment of the performance of 34 IFMIS projects in 27 countries found that:

- only 21% were successful
- only 6% were regarded as likely to be sustainable
- they took an average of seven years to complete
- the funding provided by the World Bank averaged US$12.3 million

A further risk is the quality of the technical assistance. Would the proposed OTS system be introduced and managed by consultants with experience in financial reform and fiscal decentralization generally, and in Ethiopia specifically? Do they fully understand the constraints in Ethiopia that will impact the effectiveness of such a complicated reform? Even if the technical assistance has adequate experience in implementing financial information systems under these conditions, they will still require a significant learning curve which will delay implementation and will inevitably involve mistakes.

The current financial systems have been developed over eight years and are based on manual procedures that have been developed through extensive consultation with government staff. The steep learning curve is embodied in these systems.

Fiscal devolution and its deepening to weredas is a bold move and has now brought to the fore the need to develop and establish nation-wide standards and policies for budgeting and accounting. This is a precondition for moving forward on any new system purchase.

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6. Sustainability

Sustainability is promoted through available and cost effective local support. The current financial systems are supported by the DSA project principally through a sub-contract with a local firm (Omnitech). Omnitech has been extensively involved for over three years in the development and support of these financial systems. Omnitech staff know the details of the computer software and are able to rapidly and cost effectively customize it to meet government requirements. Omnitech’s staff are also very familiar with the organizations and staff in the federal and regional governments and understand how these systems fit in and support government operations. This intimate understanding of the operating environment has been essential in reducing the risk of these systems and ensuring their smooth operation. Introducing a new financial system would discard this critical expertise and experience.

7. Capacity to Grow

The current financial systems are based on international standards and open architecture. The source code is owned by the government. These features allow for the current core system (budget, accounts, disbursement) to be supplemented by new functions such as payroll and human resources. The sub-contractor (Omnitech) of the current systems has taken the initiative to develop a human resource and payroll system which is based on the budget and accounts structures and fits seamlessly into the existing systems. Should the government decide to deepen the reform, these functions could be rapidly integrated with the current financial systems.

An Appropriate Way Forward

The current financial systems are a ‘simpler and less expensive’ solution, they meet government requirements, are proven performers, and are being upgraded to meet changing needs. These systems are the only solution available in the short to medium term to meet several of the government’s high priority programs (PSCAP) and the demands of its development partners (JBAR). An appropriate strategy going forward for the government’s financial information systems is to continue the rollout and upgrade of the current systems and use any additional funding that is available for financial information systems to support them. This approach would have the benefit of avoiding costly and unnecessary duplication and would continue the close integration between the development of financial procedures and the computer software which replicates and supports them.

The government does not need to make a decision at this time to introduce a new financial system. The upgrade of the current system should be completed and government should focus all of their IT resources in the finance area to implement these systems nation-wide by the EFY 1999 deadline.
Once the current financial systems are operating smoothly nation-wide, it would then be appropriate to review their adequacy and performance. If an upgrade is deemed necessary at that time, it could be smoothly introduced because the current system would have thoroughly tested the following: user requirements (which will be more stable), the computer communications infrastructure (WEREDANET), and the capacity of government to manage financial automation. The current financial systems are based on an open architecture, international standards, and are thoroughly documented. These features ensure that the current IBEX financial system can incorporate new functionality as deemed essential. If migration to a new application were deemed to be needed and cost effective, the open architecture of the current system would facilitate a rapid and smooth migration in the future which would incorporate existing procedures and data.