Zaidi Oil: the SAP ERP dilemma

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On a beautiful October morning in 2011, Mr Abbas and Ms Kariuki were seated facing each other in the Zaidi Oil Group boardroom in the presence of the CEO and five other company directors in Nairobi. They were debating whether or not to upgrade their current B1 system to a bigger version of SAP.

Abbas was the new ICT Director of Zaidi Group, an oil marketing company (OMC) operating in East Africa. The fact that he had been with the company barely three months did not prevent Abbas from voicing his opinion and even disagreeing with the directors around the table as they discussed the B1 system. Kariuki, the Finance Director, saw the USD400,000 price tag for system licenses alone as very impractical. However, unable to hedge quickly enough, the company had lost a substantial amount of money due to the 20 per cent depreciation of the Kenyan shilling against the dollar in just three months:

> It's time to upgrade it, said Abbas.

No, it's not. Was the emphatic reply from Kariuki:

> "Yes, it is! We have outgrown the system and it is risky to remain with B1".

"No, it's riskier to upgrade to A1 since it is too big for us, not to mention the other costs involved. B1 software can be improved to accommodate our additional needs":

> But its architecture, *not to mention its functionalities,* is meant to serve the needs of small companies (see Exhibit 1). We are no longer a small company, replied Abbas. It is not good practice to keep on building and adding modules on top of B1 to meet our growing needs. It is as folly as adding 10 more floors to a building whose architecture was meant for a one-storey building.

"But other large entities are on B1 as it is more cost effective. And let me tell you why we shouldn't abandon B1 unless we absolutely have to", Kariuki stated:

> The success of the integration of the B1 with other modules from other vendors (approved by SAP) is proven through success stories such as Kenya Paint Company which RedLock implemented and supported. I'm also certain that Kenya Paint is not just relying on the standard B1 but have integrations with other modules to enable them managed their operations better (see Exhibit 2). The integration will only be done with other modules approved by SAP – i.e. already proven – where's the problem?
>
> One problem is that Kenya Paint is operating in Kenya only with very few branches. Secondly, SAP has no more responsibility on us if RedLock[1] do extensive customization of the system. We are in the hands of RedLock, who in the past, did not deliver a customized system and failed to provide support services, Abbas went on further.

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Granting we improve again on B1, for how long can we remain with it considering the growth we set for ourselves in the next five years? Then where would we be? We'd be explaining to the board why Zaidi Oil can't open new subsidiary companies in Zambia, DRC, South Sudan, Burundi, Djibouti, Malawi, Mozambique and Zimbabwe because our system can't support it. I don't want that job! Do you?

"Of course not!" Kariuki was stern:

But we already have a system in place. From the meeting we had with RedLock, they have assured us that all areas we require improved in the current system can be handled (see Exhibit 3) at a total cost of USA$125,000[2].

But all our competitors in the continent, like Kenol Kobil, Oryx Oil, Gapco, Gulf Energy, Hass Petroleum, Petrocity, not to mention multinationals like Shell, Total and BP are among others using SAP A1, Oracle or JD Edwards. None of our size is using B1. Are you not concerned?

"Of course, but what's that have to [. . .]":

Exactly! Abbas interrupted, That is because SAP has already customized a version of A1 that is based on best practice in our industry for companies of our size. Why on earth would you want to remain with B1?

Because, said Kariuki, we invested in B1 in 2007, reinvested again in 2010 when we re-implemented the software which improved functionality to a different level. If there is a chance that we can still get more out of the same system by adding a few modules and developments and achieve the functionalities currently lacking, we should give it a try. Otherwise we will not have given shareholders a chance to reap maximum returns on investment made on B1.

But Kariuki, Mr Abdul, the Operations Director, interrupted, We in Operations are looking for a more robust system that could monitor quality and quantity of our products both in our tanks and in transit. Last year, we reported loss and theft of products worth 2 million shillings due to laxity in our system's controls even after we installed CCTV. Things will just get worse as we intensify our campaign in pushing 200,000 cylinders of Zaidi LPG[3] in Kenya, Uganda, Tanzania and Rwanda. Besides, Commercials said they will open an additional 50 service stations across East Africa in the next five years. I am afraid B1 can't provide the functionalities we need.

"There you go", Abbas seconded:

But colleagues, this time of the year is difficult for us. I am sure, SAP B1 can still handle our volume even if we grow in the next two years, Samson, the Commercial Director, interrupted.

"We can harmonize our processes before adding the additional modules".

"And B1 can be improved with less cost", Kariuki added definitively. "Why are we trying to abandon it?"

"It is because cheap is expensive", Abbas replied:

Four years ago, we spent USA$75,000 to implement SAP B1 and last year another USA$95,000 just to re-implement it. This time, USA$125,000![4] When will it end? he concluded.

Instead of replying, Kariuki sat back. The CEO, Mr Macharia, was listening to the debate. It was not the first time he heard his executives disputing. This thorough approach, however, had only deepened Mr Macharia's confusion over what to do about B1. He wondered what approach would be most in keeping with how Zaidi Oil implemented and exploited its overall core system.

Oil product consumption in Kenya by product

In Kenya, oil products were mainly consumed in the manufacturing, commercial, transport, residential, power generation and agricultural sectors. Consumption of oil products has

been erratic over the years and it is important to note that the demand for oil products had on average been increasing over the years. The national consumption trends of selected oil products increased by an estimated 8 per cent from 2.62 million m^3 in 2005 to about 2.84 million m^3 in 2006, with a further increase of 5 per cent in the year 2007. A sharp drop by 3 per cent in the yearly national consumption was recorded in 2008 due to the activities of the post-election violence (Table I).

History and company highlights

Zaidi Oil Group of Companies Ltd. was founded in Kenya in 1990 by Mr Macharia and three other East African businessmen and started out as an oil distributor to Rwanda and Democratic Republic of Congo markets as local OMCs saw opportunities with the departure of some of the major multinational players from Kenya. Over the years since its inception, Zaidi has grown and acquired oil depots in different parts of Kenya and opened subsidiary companies in Uganda, Rwanda and Tanzania.

In 2007, Zaidi Oil Kenya acquired the Mombasa Terminal and formed Zaidi Transport Ltd. to improve efficiency in transporting its products across the region. The fleet started with 30 trucks. By mid-2010, it had grown to 60 trucks as the demand for oil products doubled. Zaidi Oil's businesses were primarily focused on supplying oil products in the power generation, mining, manufacturing and construction sectors.

The following were some of the highlights in 2011[5]:

- Lubricants were introduced in the first quarter.
- Zaidi Cylinders was introduced in Mombasa City in the second quarter.
- Hospitality volume in Zaidi Mombasa Depot was 180,000 m^3 of fuel and 4,800 tons of LPG. This earned a net revenue of USD180,000.
- Established an efficient supply chain management monitoring system – seven days a week stock cover – by February. However, it was established in the books only and not in actual product.
- Implemented the ISO 9000:2008 quality management system in the first quarter.
- Completed the Spur line[6] in February 2011 at a cost of USD950,000.
- Completed and operationalized the Nairobi Terminal in April 2011 at a cost of USD1.7 million after a year of delays.
- Completed the metering and tank gauging facility in Mombasa by March at a cost of USD200,000.
- Completed a security enhancement project (CCTV) in Mombasa by March at a cost of USD100,000.
- Completed a Mombasa truck fuelling facility by the first quarter.
- By the third quarter, the Group's total number of employees was 450.

Table I KPC uplifts vs. national consumption in Kenya

Year	*KPC uplifts*	*National consumption*	*Yearly increase in national consumption in %*	*KPC uplifts vs national consumption in %*
2005	2,350,577	2,624,870	–	90
2006	2,487,883	2,836,796	8	88
2007	2,721,796	2,984,647	5	91
2008	2,573,888	2,906,833	−3	89
2009	3,079,695	3,471,845	19	89

Source: Republic of Kenya Economic Survey 2010 as computed by KIPPRA as cited by Silvestre Kasuku

Recent business statistics showed the Group supplied over 300 million liters of oil to retail, resellers and commercials in the region. This was against a capacity to supply 600 million liters to the same market.

It needs assessment

Abbas[7] joined Zaidi Oil after a five-year stint in South Africa. His mandate was to set up the structure for the newest department in the company, a breakaway from the Finance Department with only five members of staff, himself included. Unlike the former Information Technology (IT) Manager, he reported to the CEO and one month after joining the company, Abbas initiated an IT needs assessment survey across the Group and all departments to better understand ITs current status within the company. He also visited facilities in Mombasa, Nairobi, Nakuru, Kisumu and Eldoret and subsidiary companies in Uganda, Rwanda and Tanzania, including Zaidi Transport.

The company's ICT infrastructure was highly decentralized and its ICT governance and purchasing procedures had never been completely coordinated. While they all had the same core B1 system, databases and hardware, most had dissimilar hardware and software platforms. In addition, even if two operating companies did have the same application, they were configured differently and loaded with different information. In fact, even if they dealt with the same customer, there was no guarantee that they would have exactly the same customer information within their separate information systems.

Abbas also discovered important issues, challenges and limitations of their current ERP system, including the unreliability of their only server in Kenya and obsolete network and Internet infrastructure. He also noted reports of frequent system downtimes that paralyzed operations, resulting in inefficiencies, including the inability to load and transport products due to necessary Kenya Revenue Authority documentation. The Zaidi Oil IT users, however, were largely young and highly computer literate. See Exhibits 2 and 3 for B1 limitations and add-ons required.

Abbas proceeded to formulate his IS Plan[8], which he divided into three stages to support Zaidi's five-year strategic plan of becoming a premiere energy company in Africa by 2015 and hoped to enter the power generation and oil exploration business by 2020.

Stage 1: Enhance existing "Foundation" solutions

- Replace B1:
  - financials, purchasing and sales; and
  - stock management (inventory), crystal reporting and fixed asset tracking.
- Solutions required soon:
  - human resource management, business process and work flow;
  - company-internal: instant messenger (desktop and mobile);
  - business intelligence to centralize view of company performance; and
  - customer relationship management (crm) or @customer/stakeholder/channel relationship management and basic campaign management, systems portal and mobility.
- Payroll (enhance/incorporate into new ERP). Local solution is currently in used.
- Areas of possible "Paper overload" = focal point for digitization, Work Flow, Electronic Data Interchange (EDI) for the centralization of procurement processes.

Timeline: January-December 2012 (12-month duration).

Stage 2: Core business solutions rollout (Forecourt and related "New force in energy" strategy)

- Intelligent Forecasting: inventory, ordering and sales;
- Inventory tracking and control;
- Forecourt management systems, e.g. e-signage, remote price management;
- CRM (Part 2):
  - market and consumption analysis and geo-demographics; and
  - market-specific campaigns (multi-channel) and contact centre.
- Loyalty program;
- Payments, e.g. mCommerce and Card/Smartcard linked to recharge gateway;
- Smart utility usage for sites;
- Franchise management solutions, e.g. standards, safety, skills and processes; and
- Estate management and asset management.

Timeline: January-December 2013 (12-month duration)

Stage 3: advanced solutions

- Integrated marketing tools (forecourt and channels), e.g. centralized national pricing tools;
- Number plate recognition solutions;
- Advanced payments (RFID/NFC);
- Detailed service bookings (car maintenance);
- Enhanced loyalty;
- Advanced fleet management, e.g. driver monitoring, load quality monitoring and load temperature monitoring; and
- EDI for seamless procurement and logistics.

Timeline: January-June 2014 (6-month duration)

Abbas also outlined his IT Development Plan for 2011-2012:

- Implement high performance computing:
  - procure modern high-end server(s); and
  - create virtual servers for the various systems and applications in use.
- Implement enterprise IT services:
  - setup Zaidi domain and exchange; and
  - operationalize multiprotocol label switching in all operational business units;
  - have all the business units on fiber optic cables;
  - create shared folders for the individual departments; and
  - have centralized mail backups, software and antivirus updates.
- Restructure the IT Department:
  - retain the IT Manager (to manage current ICT infrastructure);
  - hire a technological innovation manager (to spearhead identification and implementation of breakthrough systems that could possibly change industry economics); and

– create a position of IT Officer in each country.

Conclusion

Abbas and Kariuki did not reach a consensus about Zaidi's ERP system that morning in October 2011 and this left Mr Macharia wondering: Would upgrading to a higher version create a bigger risk than remaining with the lower version? Kariuki was fearful of overspending on a huge IT system where current functionalities required could be addressed by a smaller system through add-ons, customization and development. She was aware that USD100,000 would be budgeted for the upgrade of their server and network infrastructure if they would remain with and improve B1.

Abbas, on the other hand, was worried that Zaidi was building an ever-growing company on a small ERP system. Abbas' fears also included RedLock's past inefficiencies: What if RedLock made mistakes with the customization process and turned the B1 system from an application that was stable into a real problem for the IT department and the Group? The partner at RedLock had explained that the reason they did not implement the system thoroughly in 2010 was because they too were growing, resulting in some internal inefficiencies, not to mention working with the existing limitations of SAP B1 version at that time. It was also explained that RedLock had now sorted out its internal problems and assured that all the needs of Zaidi could now be addressed with the latest version of SAP B1 system (Version 8.8). But Abbas had gotten nowhere by having RedLock sign an service level agreement stating that, in case of loss or corruption of Zaidi's data in the process of development, RedLock would assume full responsibility.

Did all of this mean that it was now time to upgrade to a bigger version of SAP? A typical full-scale SAP A1 installation would require five high-performance servers and several individual workstations connected to these servers in a virtual private network setup via either local area network and/or wide area network connectivity (roughly USD200,000), not to mention other costs of ownership such as implementation and training costs (USD400,000)[9]. What if the cost of shifting to SAP A1 were to run over budget? What would happen to a company that was already experiencing some financial difficulties (Exhibit 5)?

Mr Macharia saw that a move to change Zaidi Oil's SAP system entailed a number of follow-up decisions. Was now the right time to make them, or should the company simply improve the current one?

The other directors, none of whom were specialists in IT, were wondering what, if anything, they could contribute to the discussion and/or to the final decision.

Keywords:
Oil and Gas,
Energy Sector,
ERP,
SAP,
Kenya

Notes

1. RedLock is a Gold Partner of SAP for the BI System.
2. USD1 = KES105.00
3. LPG business is one of the fastest growing OMC businesses. Zaidi currently has the second largest facility in Kenya plus a market share of 25% in the region.
4. USD125,000 includes licenses, development, implementation and training costs.
5. Source: Authors.
6. The Spur line was built to solve the issue of the storage capacity limit given to each OMC at the refinery. It is a direct line between Zaidi Mombasa Terminal and KPRL.
7. Abbas completed a Bachelor of Science degree in Computer Science (2005) and a Master in Business Administration (2010).
8. Source: Authors.
9. SAP A1 will be implemented by a SAP Gold Partner from Zimbabwe that had partnered with a local technology company. They specialized in the Oil and Gas sector.

10. SAP Business One was not an original product of SAP. It was acquired from another company to diversify its product portfolio catering the ERP needs of small companies.

11. Negative inventory occurs when Zaidi's stock is nil and/or below the required volume by a customer in one depot while stocks owned by other marketers are in their tank because of the hospitality service.

Exhibit 1

SAP Business One solution (www.sap.com/sme/solutions/businessmanagement/businessone/index.epx, accessed 24 November 2011)

The SAP Business One (B1) was a single integrated management application for small businesses. The application integrated all core business functions across the entire company – including financials, sales, customer relationship management, inventory and operations. SAP Business One was a single application, eliminating the need for separate installations and complex integration of multiple modules.

SAP Business One[10] software included the following:

- *Financial management*: Automate, integrate and manage all financial and accounting processes.
- *Warehouse and production management*: Manage inventory across multiple warehouses, track stock movements and manage production orders based on material requirements planning.
- *Customer relationship management*: Grow customer profitability and increase customer satisfaction with effective sales and opportunity management and after-sales support.
- *Purchasing*: Automate entire procurement process from purchase order to vendor invoice payment.
- *Reporting*: Act on instant and complete information with comprehensive, real-time reports.

Enhancements can be done by integrating modules developed by independent companies approved by SAP. Any especial customized needs by other companies can be achieved through its system development kit.

Exhibit 2

Table EI Additional modules/add

Need/Functionality	*Brief description*
Human Resource and Payroll	Includes recruitment, administration of personnel benefits and compensation, personnel development, travel management, training and events management, time management, workflow, payroll and employee self-service RedLock Response: Integrate Altura, Pledge
Business Intelligence	Offers best practice reports, analytics, simulations and data warehousing tools for financial accounting, logistics, customer relationship management and many more RedLock Response: Business Objects will be used to fulfill this requirement
Project Management	Co-ordinates and controls all the phases of a project; involves managing projects and sub-projects including budgeting, execution, management, costing and simulations RedLock Response: Enterprise Project Management module will be added to Business One
Treasury Management	Includes cash and liquidity management, loans management, bank accounting, bank communication management, SWIFT integration, treasury and risk management RedLock Response: Development will be done to achieve this requirement
Plant Maintenance	Manages equipment and technical objects, maintenance and service RedLock Response: Variatech maintenance add-on will be used
Quality Management	Includes planning, inspections, notifications, control, certificates and test equipment management RedLock Response: A combination of Variatech and Usability Pack will be used

Exhibit 3

Table EII SAP B1 system limitations and RedLock response

1. Posting in closed periods for certain transactions, e.g. sales documents but not expenses
   RedLock Response: Usability Pack data management and validations to be used
2. See who posted a document without actually having the rights to raise the document
   RedLock Response: SAP Business One query can be written
3. An approver of a document should not be able to raise the same transactions
   RedLock Response: Usability Pack data management and validations to be used
4. Negative inventory[11]
   RedLock Response: Development will be done to streamline and correct the process
5. Financial report consolidation for the various countries
   RedLock Response: Business Objects will be used to fulfill this requirement
6. Credit limits in system according to customer currency
   RedLock Response: Business Objects will be used to fulfill this requirement
7. Bank statements can be processed by the system
   RedLock Response: Templates for the import tool will need to be created per bank, once this is done standard functionality can be used
8. Automated purchase requisitioning system
   RedLock Response: Development will be done to achieve exact process match
9. Budget monitoring
   RedLock Response: Usability Pack notifications will be used
10. Workflow systems
    RedLock Response: Usability Pack workflow will be used

Source: Authors

Exhibit 4

Table EIII Projected cash flow for the SAP A1 project

Year	*Cashflow (USD)*
	The cost of capital is 12%
Year 0	−1,000,000
Year 1	350,000
Year 2	350,000
Year 3	400,000
Year 4	400,000
Year 5	500,000

Source: Authors

Exhibit 5

Table EIV Statement of financial position (Balance Sheet)

Balance sheet

as at January 31, 2011

	Actual Kshs
Assets	
11,000,000–Non-Current Assets	
11,100,000–Property, Plant and Equipment	110,406,455.00
11,200,000–Intangible Assets	33,501,750.00
Total 11,000,000–Non-Current Assets	143,908,205.00
12,000,000–Current Assets	
12,100,000–Inventory	110,229,777.00
12,200,000–Trade Receivables	83,010,993.00
12,300,000–Other Receivables	99,627,775.00
12,400,000–Tax Recoverable	13,065,900.00
12,500,000–Intercompany	75,604,245.00
12,600,000–Cash and Cash Equivalents	68,102,556.00
Total 12,000,000–Current Assets	449,641,246.00
Total Assets	593,549,451.00
Liabilities	
21,000,000–Current Liabilities	
21,100,000–Trade Payables	395,660,129.00
21,200,000–Other Payables and Accruals	32,549,202.00
21,300,000–Taxes Payable	–
Total 21,000,000–Current Liabilities	428,209,331.00
Non–Current Liabilities	
Loan for Nairobi Terminal	142,800,000.00
Capital and Reserves	
31,000,000–Capital and Reserves	
31,100,000–Capital	10,000,000.00
31,200,000–Reserves	(190,350,106.00)
Profit Period	202,890,226.00
Total Capital and Reserves	165,167,430.00
	593,549,451.00

Source: Authors

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