

count on lean

Lean management is all about streamlining processes, localising decision-making and waste management. Central to this, argues **Ross Maynard**, is the accounting team. What does it mean to 'lean' an organisation's accounting function, and where does it leave the accountant?

Lean management seeks to radically restructure an organisation into value streams rather than functional departments. A value stream represents the whole production and service process from receipt of goods inward to delivery – so a value stream might incorporate a product family or range. All of the services and staff relating to that product family would be grouped into the value stream. Thus there are no 'departments' such as facilities or finance. Instead staff are allocated directly to the value stream they work on, with some head office staff for strategy planning. The aim is to streamline business processes (for manufacturing or services), improve customer service, and increase efficiency and profitability.

Lean management works to five key principles:

- establish value in the eyes of your customers
- map the total value stream
- make value flow with no interruptions
- make what the customer wants when they want it, otherwise known as pull
- search for perfection with no waste (continuous improvement)

Accounting systems must, of course, support these operational processes but traditional accounting systems, particularly those based on standard costs and absorption costing, do not support the principles of lean. In absorption costing, accountants seek to apportion all the costs of overheads to products

to give a standard unit cost. This is usually done in proportion to direct machine hours or direct labour hours worked on the product. Lean accountants recognise that there is no such thing as standard unit cost as this varies considerably with production volumes and a whole range of other factors. In lean accounting overheads are not absorbed to product units but left at the level of the value stream. Thus each value stream is expected to make a profit (also called a contribution) on its direct costs and direct overheads only.

Indeed, traditional accounting techniques often encourage inefficient practices, such as building inventory, and may lead to poor management decisions using standard costs. As noted above, in traditional accounting, costs are collected together as standard costs. This means that the more product that is manufactured, the lower the unit cost will be. This results in a strong incentive for manufacturing departments to produce as much product as possible in order to lower their unit costs in accounting reports. If this excess production cannot be sold then stocks build up, and stockholding is very expensive. Similarly, managers may make strategy decisions based on the standard unit costs that have been developed.

However, in the real world, production mixes are complex and volumes vary considerably. Therefore, there can never be one accurate standard cost for a product and any decisions made under the fiction

that there is a true standard cost are prone to error.

The examination of the variation of actual costs from the standard costs devised by the finance department is called variance analysis. Variance analysis reports are complex and impossible for anyone without detailed accountancy training to understand or interpret. Traditional accounting reports, like variance analyses, are too complicated for operational employees to understand easily and are often too late to be useful in shop-floor decision making.

Lean accounting

Lean accounting, by contrast, is focused on simple visual shop-floor measures for instant decision-making, coupled with management accounting tools for longer-term planning. Thus, lean accounting is an integral part of the introduction of lean management. At the same time it is a vital tool for strategic decision-making. In many ways, lean accounting provides the tools for the strategic management of lean.

Lean accounting is a relatively new technique that has grown up as the philosophy of lean management has developed. Firms which seek to implement lean management need to implement lean accounting to remove the waste and inaccuracy which surrounds traditional accountancy – particularly the fiction of one standard product cost.

Lean accounting is driven by four values:

- it must provide accurate, timely and understandable information to motivate the lean transformation throughout the organisation
- it must use lean tools to eliminate waste from the accounting processes, while maintaining thorough financial control
- it must comply with generally accepted accounting principles, external reporting regulations and internal reporting requirements

- it must support lean culture by motivating investment in people, providing information that is relevant and actionable, and empowering continuous improvement at every level of the organisation from top to bottom

Operational tools of lean accounting

A cell is an individual production or service activity in a process, such as a manufacturing task, lathe, or even despatch note preparation.

At the cell level, lean accounting establishes new measures of performance, incorporating output which is linked to customer demand, quality, and operational effectiveness. Many of these measures will be familiar to quality professionals, such as first-time through rate, cycle time, rejects, downtime and so on.

The value stream

Above the cell level lies the value stream. A value stream can be defined as: 'Everything we do to create value for the customer'. Usually there is a value stream for each product family plus value streams for new product development, acquiring new customers and business development.

Each value stream will include all support activities relevant to it, including engineering, design, marketing and finance. At this level, one of the key performance measures is the 'box score', a balanced scorecard combining financial and other performance measures. This is key for decision-making and planning.

The box score gives a very visual one-page summary of the performance of the value stream containing data such as units per person, on-time shipment, first-time through rate and capacity usage, as well as summaries of revenues and direct costs to give a gross profit for the value stream. The key is to keep it simple and usable by the staff involved in the value stream. Thus it is best to focus on ten to 12 key performance indicators that can really be acted upon.

Labour hours

In lean accounting, labour hours are not tracked through the production process. Rather, costs are allocated as direct costs at the value stream level. This saves a great deal of unnecessary paperwork and legwork. Cell per-



formance indicators and standard working procedures, including standard hours, allow labour costs to be calculated on an ad hoc basis for planning, but such data is not recorded on a continuous basis. See the box on page 33 for an example.

Material costs

Material costs, too, are not apportioned to products, but recorded directly at the value stream level. As in the example in the box, the total material cost is recorded for the value stream but there is no need to calculate some sort of standard material cost per unit – which may vary according to many different factors.

More radical perhaps, the cost of sales material expense is the cash cost of material purchases in the period. In lean accounting, costs incurred are recorded as the cash costs paid. In traditional accounting adjustments are made for items moved into and out of stock, but in the lean organisations stocks are low and stable so there is no need for these time-consuming adjustments.

Lean people

In traditional accounting staff such as design, engineering, quality, finance, marketing, even maintenance would be classed as overheads. However, assigning employees to value streams is one of the most important principles of lean accounting to make costs more accountable.

As many staff roles as possible are moved from offices onto the shop-floor, and cross-skilling is a key part of lean management. Individuals in each value stream are trained to carry out duties, such as basic financial recording and reporting, maintenance, design and engineering.

Thus a line supervisor, or even a team leader, will have responsibility for recording data, monitoring quality and will usually be trained in basic maintenance tasks. Such staff will also be trained in lean quality tools for process improvement. Individual maintenance staff, engineers, finance staff and so on will be allocated to work specifically on one value stream if it is large enough.

Allocation of work to value streams (using timesheets etc) is also possible, though it is preferable to keep this as simple and transparent as possible. Thus an engineer or quality professional may input to two or more value streams. Simple

timesheets will be used to allocate their time accordingly. This is not ideal in a lean organisation since timesheets mean non-value adding paperwork, but may be unavoidable.

In lean accounting, there will still be an overhead corporate support containing staff that cannot be allocated to value streams such as financial accounting, chief accountant, quality assurance, health and safety, human resources, chief engineer, marketing and so on.

This overhead should be kept to a minimum, only comprising, as far as possible, the heads of each specialism and certain other core staff.

Equipment costs

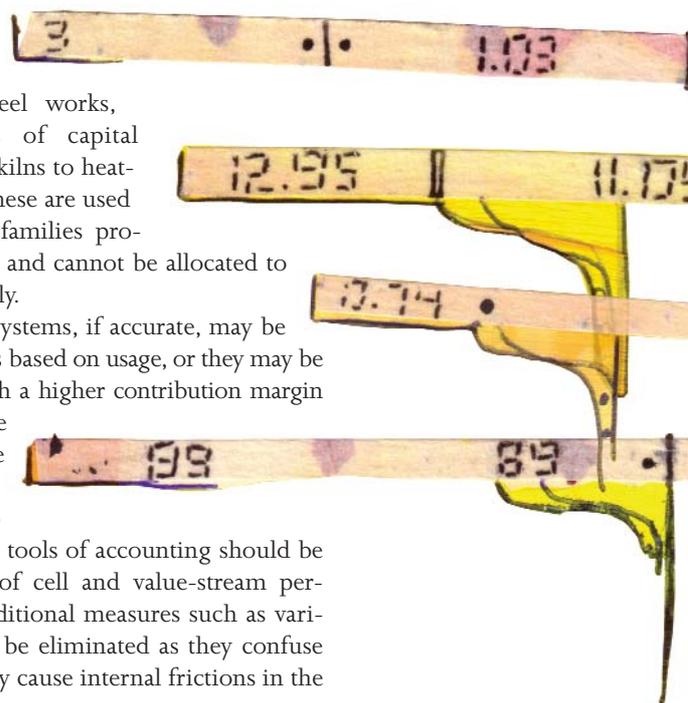
Similarly, large pieces of capital equipment may also be impossible to allocate to a single value stream. For example, in a firm which produces the components for steel works, the largest pieces of capital equipment are the kilns to heat-treat the products. These are used by all the product families produced in the factory and cannot be allocated to one value stream only.

Time-recording systems, if accurate, may be used to allocate costs based on usage, or they may be kept as overhead with a higher contribution margin required from the value streams that use the equipment.

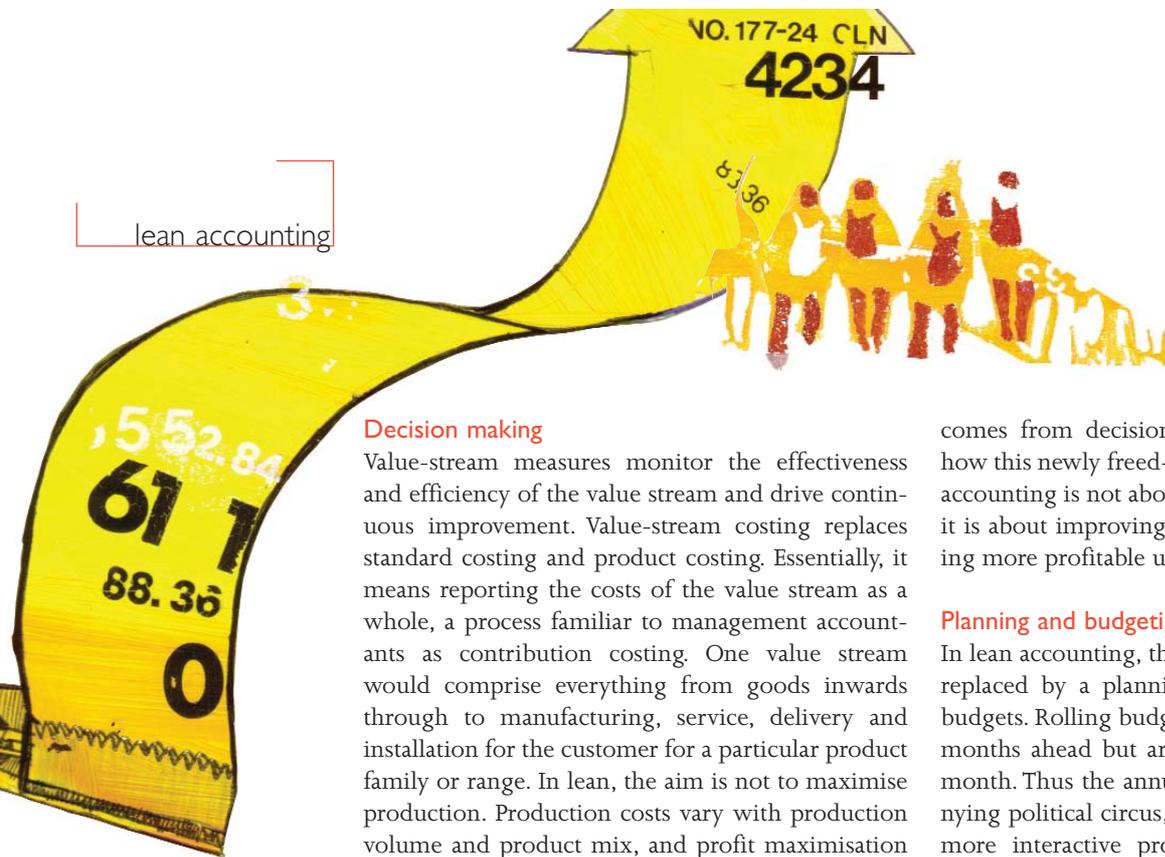
It is important to stress that these lean tools of accounting should be the only measures of cell and value-stream performance. Other traditional measures such as variance reports should be eliminated as they confuse the situation and may cause internal frictions in the organisation.

Having more than one set of reporting data, containing different figures, is bound to confuse people and may result in petty politics playing one set of data off against another. This hinders the improvement process. In day-to-day accounting practice, lean accounting must completely replace traditional accounting in an organisation if it is serious about implementing the lean management philosophy.

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lean accounting



Decision making

Value-stream measures monitor the effectiveness and efficiency of the value stream and drive continuous improvement. Value-stream costing replaces standard costing and product costing. Essentially, it means reporting the costs of the value stream as a whole, a process familiar to management accountants as contribution costing. One value stream would comprise everything from goods inwards through to manufacturing, service, delivery and installation for the customer for a particular product family or range. In lean, the aim is not to maximise production. Production costs vary with production volume and product mix, and profit maximisation comes by maximising flow through the value stream. This is the role of the lean accountant.

Target costing

The management accounting technique of target costing drives the lean accounting process. Target costing involves setting a target price (based on market research) for a product or service, and then working out how and if the product or service can be delivered for this price at a reasonable profit. Target costing establishes the value created for the customer by the product or service and works back to provide target costs for operations, distribution, marketing and so on. In lean accounting, however, target costing is not a one-off, it is repeated throughout the lifecycle of the product.

Any cost gaps between the target cost and current value stream cost is, of course, the focus of continuous improvement and value engineering. In the computer market, price points of £1,000, £1,500 and £2,000 existed for laptop computers a few years ago. Falling component prices and improved processes mean that manufacturers are now aiming to produce laptops at price points around £399, £599 and £999.

Design for six sigma, value engineering and other techniques are used to design manufacturing processes that deliver product profitably at these prices. Of course, the targets are always shifting in a fast moving market so process engineers are constantly in demand.

Lean improvement projects eliminate waste and create spare capacity in the form of machine time, employees' time and physical space. The financial impact of lean improvements on the bottom line

comes from decisions made by management on how this newly freed-up capacity will be used. Lean accounting is not about short-term cost reductions, it is about improving customer value and developing more profitable uses for the freed up resources.

Planning and budgeting

In lean accounting, the annual budgeting process is replaced by a planning process based on rolling budgets. Rolling budgets typically forecast 12 to 15 months ahead but are reviewed and revised every month. Thus the annual budget, with its accompanying political circus, is abandoned for a smoother more interactive process. Sales, operational and financial planning (SOFP) is a coordinated monthly planning process for each value stream over the next 12 months. It is a form of rolling budget, and is recast every month.

Since no forecasts are ever totally accurate, continuous improvement practices are applied to the SOFP process itself – such as six sigma processes to analyse the accuracy of forecasts or process improvement techniques to streamline the activity – to eliminate the causes of variability and inaccuracy in forecasting. The SOFP provides a coordinated plan for the development of the business including pricing and marketing policy, new product development and capital investment.

The accountant's role

In lean accounting, financial control moves from the accounts office to the shop-floor. Indeed, the role of the accountant can change quite radically in a lean company – and for the better. In lean, accountants must become involved in operations and, particularly, control processes including monitoring the effectiveness of cell and value-stream measures, SOFP, value stream costing and analysis. The accountant becomes much more focused on real-time control and decision-making rather than recording the past.

The lean accountant will spend much more of his or her time with the people involved in the process. Performance data is constantly monitored and discussed with operatives, staff and team leaders. Performance problems are quickly identified and worked on with team members and supervisors. The role of the lean accountant is to facilitate continuous improvement by providing an expert

eye on performance data and finances and translating this into a form that can be used in decision making on the spot by empowered teams. The lean accountant is thus a change agent, not a 'bean counter'.

This means there is little place for keeping complex sets of accounts, devising impenetrable costing routines, or calculating overhead absorption percentages. It is acceptable to absorb certain factory overheads. However, although the number of square metres occupied and the depreciation of equipment used in the value stream will stay much the same, all other costs are directly allocated to the value stream where they arise.

For example, labour, materials, quality assurance, maintenance and technical support will all be given a value stream. One of the philosophies of lean accounting is to free capacity and space for other projects and provide the tools to identify additional profitable projects. Value-stream costing, therefore,

plays a pivotal role in lean accounting by helping to make decisions about manufacturing, purchasing, new products, accepting new orders and so on.

Leaning the finance department

The move to lean management can dramatically increase the volume of transactions. Daily deliveries of supplies, smaller batches, daily shipments to customers and so on, can all potentially swamp traditional transaction-based accounting systems. Since such administrative transactions are themselves waste, one of the core aims of lean accounting is, as far as possible, their elimination.

Thus lean management principles are also applied in the finance department. This makes accounts payable largely unnecessary as materials payments are authorised on receipt of the goods, and credit cards are issued to supervisors for minor purchases through approved suppliers. Stock control is easier with much-reduced inventories, and standard costing routines and calculation of absorption cost rates are eliminated by simpler, value-stream-based reporting.

Automated invoicing of customers and massive simplification of the chart of accounts also reduces the need for accountants and bookkeepers. Instead, management accountants become much more proactive and involved in shop-floor decision making, planning and continuous improvement teams.

The lean accountant is central to the successful leadership of the lean transformation since lean accounting provides the strategic tools and measures for change. In addition, successful lean management requires culture change within the organisation to bring learning and development, and employee involvement and empowerment to the fore. Lean accounting contributes to this effort by providing appropriate measurements and decision-making tools.

Useful measures used may include the number of improvement suggestions implemented, the percentage of people actively involved in continuous improvement, and the level of cross-training within the value streams.

Lean accounting provides vital opportunities for management accountants to play a key role in decision making, strategic planning and continuous improvement – and to move away from tedious number crunching 

Lean accounting in action

Assume we run a factory producing footballs. One square metre of leather costs £2 and produces ten footballs. Based on standard working times, the labour cost per football stitched is £1. Total factory overheads amount to £1m. If the factory plans to produce one million footballs in the coming year then the budgeted standard cost per football is £2.20 (£0.20 material per ball plus £1 labour per ball plus £1 overhead apportioned according to output). However, in real life we cannot accurately forecast what production will be. If football fever hits the nation then output may be doubled reducing the actual cost per ball to £1.70 (£0.20 material per ball plus £1 labour per ball plus £0.50 overhead per ball). If football scandals cause a drop in sales to 500,000 the actual cost per ball rises to £3.20.

Either way the budgeted standard cost is no use whatsoever for decision making. Material and labour cost changes may also cause the standard cost to be wrong. Lean accounting takes a much simpler approach – don't bother allocating costs to individual units, rather keep a high-level profit and loss account for each value stream (product family). Thus, sales of £5,000,000 minus material costs of £210,000, and labour costs of £1,200,000, minus total overheads of £1m leaves a value stream gross profit (or contribution) of £2,590,000. Decision-making becomes much easier as we can simply work alternative scenarios in a spreadsheet.