Les Brown

Qualifications

- 1989 Master of Business, USQ (International Business major)
- 1993 Diploma of Export Management, (AIE/USQ)
- 1989 Bachelor of Business (Economics), QUT.

Professional Affiliations

- Member, Australian Institute of Export, (Qld).
- Member, The Academy of Marketing Science (USA)
- Board Member, The College of International Business (Qld)

Specialist Fields

- Strategic planning/Corporate strategy
- Business to business marketing
- International marketing
- Development and preparation of business plans

Recent History

Les Brown has a breadth and depth of knowledge of marketing, business strategy development including market chain theory, analysis and practical case study application. His academic career has been distinguished by empirically based research projects, publications and presentations at numerous conferences both in Australia and overseas. More recently he has pursued focussed research in the field of market chains and networked firms including business-to-business and business-to-customer relationships.

His focus on business-to-business and business-to-customer relationships is being expanded through the development of this company. Mr Brown has taken an innovative approach through out his career with a demonstrated ability to adopt and implement new techniques to agribusiness technology transfer, academic applications and the approach this company is taking to the new techniques in identity preservation.

Margaret Cruickshank

Qualifications

- 2000 Graduate Certificate in Public Sector Management - Flinders University SA – Queensland Scholarship for Women - 1999
- 1998 - Graduate Diploma in Rural Systems Management Rural Extension Centre, University of Queensland, Gatton College - ongoing
- 1995 B.A. (Mass Communication), University of Southern Queensland

Professional Affiliations

- Australian & New Zealand Regional Science Association International (ANZRSAI)
- Queensland Rural Women's Network (QRWN)

Specialist Fields

- Process design and change facilitation
- Communications design and implementation
- Continuos improvement and innovation
- Systems mapping and benchmarking

Recent History

Margaret Cruickshank recently has followed interests in the process that individuals and groups undertake to achieve success on personal, community and enterprise levels. This is being explored through the development of a series of government and community partnerships in southwest Queensland. These partnerships involves a team approach to the design or planning of processes, idea or project screening, feasibility assessment, implementation and evaluation of the process and outcomes.

These partnerships are inclusive of small group, industry initiatives and regional or catchment wide strategic planning and capacity building pursuits. Margaret focuses on results orientated outcomes that meet individual, groups or business needs within defined market place signal. People within a change process are encouraged to become drivers of their own change, so a dynamic of continual improvement and innovation is realised.

Bruce McGrath

Qualifications

1990 Graduate Diploma of Management - University of Central Queensland

1976 Bachelor of Economics – University of Queensland

Professional Affiliations

Australian & New Zealand Regional Science Association International (ANZRSAI)

Specialist Fields

- Marketing and in-market research
- Business and group development
- International marketing
- Development and preparation of strategic and business plans
- Resource identification and access
- Business negotiation and mediation

Recent History

Bruce McGrath has an extensive history in agri-business development over an extended time frame both in the operational and business development spheres. He has led Asian trade missions that have resulted in new export business for Queensland agri-business firms. Most recently Bruce has focussed on horticultural businesses in South-eastern Queensland. He has promoted the use of options such as identity preservation (IP) as a strategic leverage for market chain development.

An opportunity not to be missed; using IP (identity preservation) to boost Australian export and domestic food supply chain performance

by
Margaret Cruickshank, Les Brown and Bruce McGrath

Key words: traceability, green supply chain, agri-market chains, agri-business, identity preservation (IP), product integrity, food systems, sustainability, change management**,** continuous improvement and innovation (CI&I), labelling.

Abstract

This paper shows how a contemporary agri-business fresh fruit marketing organisation is developing leverage in its market chain using a range of strategies including the extension of identity preservation (IP) to ensure relationships and alliances between stakeholders are based on high-level trust. Consumer concerns about food safety is an international phenomenon. Therefore, it is critical that Australian food producers and manufacturers develop and maintain high levels of product integrity throughout food supply chains. Fundamental to this is the concept of identity preservation (IP) followed by labelling. The limited literature about IP is discussed and from this, suggestions are made from a theoretical perspective about using IP as a point of leverage in a market chain system. This is codified using a table format showing the relationships between hard and soft systems in order to achieve a practical approach in ensuring product integrity. An example of how this is being developed in a fresh-fruit marketing organisation based in South-eastern Queensland concludes the paper.

Introduction and background

This paper focuses on highlighting the importance and urgency of developing product integrity policies in Australia in order to sustain global competitive advantage in agribusiness. It proposes that an appropriate technique is identity preservation (IP). This is an appropriate technique for addressing current consumer concerns about food safety. These authors define identity preservation (IP) as a hard systenm for tracking a product from inception (e.g. seed selection to the product at consumption e.g. biscuits or cakes) with intangible outcomes such as product integrity and trust between chain participants and consumers.

Food safety issues are driving legislation at both international and national levels. Examples include the UN sponsored international ‘Cartagena Protocol on Biosafety’, which was finalised and adopted in Montreal in January 2000, and at a national level, the Australian

labelling laws. However, current scientific testing procedures and traceability in identity preservation (IP) implementation are lagging. Dramatic falls in beef consumption in Europe are the result of the loss of consumer confidence in beef products. As an example, all stakeholders in the European beef supply chain, farmers, butchers and consumers '*are increasingly furious about the inaction, vacillation and confusion of their political leaders over the spread of Bovine Spongiform Encephalopathy (BSE)…which can be spread to humans to cause Creutzfeldt-Jakob disease (CJD*) (Jackson 2000). This is in sharp contrast to recent slaughter of infected and at risk stock from the outbreak of 'Foot and Mouth' disease.

Current protocols and procedures for identity preservation (IP) in international food chains are at varying levels of development and implementation. As a generic statement, most nations have labelling legislation in place and are now developing protocols and procedures to support *'truth in labelling'*. This paper proposes that the importance of developing early product integrity policies in Australia will sustain global competitive advantage in agribusiness and takes advantage of Australia's clean food systems.

Rationale and literature sources:

The contemporary context of widespread social concern with food safety, is forcing a more transparent and collaborative approach between customers, retailers and producers, with information flowing both ways in the chain, in order to cope with consumer concerns. Whereas supply chains have been traditionally described in the logistics literature as *'one-way integrated manufacturing process wherein raw materials are converted into final products then delivered to customers'*, (Beamon 1999). The business network literature which focuses on actors, activities and resources in business relationships (Ford 1998, Hakansson and Snehota 1995, Hakansson and Johanson 1992), has been applied to supply chains and has demonstrated the benefits of collaborative approaches in this context (Hoyt and Huq 2000). The literature seems to quarantine market chain analysis into either hard or soft systems. This paper addresses the gap in the literature.

A systems approach is proposed with identity preservation (IP) implementation as a key driver. This is a potentially powerful point of leverage in enabling product integrity. Systems are defined as the interactions and lessons from managing the interactions between the relevant combination of parts (sub-systems) that makeup the complex whole (the system)

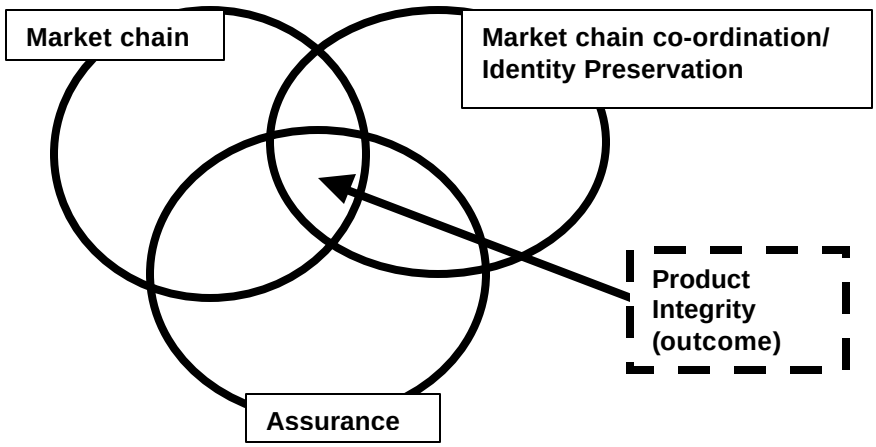
(Checkland, 1981). This approach involves using both *'hard'* and *'soft'* systems within a change dynamic to develop food systems that are sustainable.

The systems approach to supply chain management proposed, includes two major concepts which are considered essential components requiring definition. These are *'traceability' (the activity),* and *'identity preservation', (the system).* The concept of '*traceability*' in food supply chains is the ability to trace a unit of product, such as an individual beast born on one farm, transferred to a series of farms, and/or feedlots, sold in the open market, slaughtered, further processed and then sold to the consumer (Calder and Marr 1998, pps. 123-126). Similarly, in soy production in Canada, a leading soy beverage producer, 'SoyaWorld Inc' delivers a '*certified*' non-GMO product by controlling each step of the manufacture process, from seed selection to planting, harvesting, transportation and processing (Dairyworld, 1999). There are two aspects of traceability, firstly, the factual data from electronic tagging of cattle to be fed to a national data-base. Secondly, assurance to customers by documenting the history of individual animals. Such a system is designed to provide assurance(Calder and Marr 1998). The case study in this paper reviews the situation in a horticultural context.

The way forward for food-supply chains is to develop a systems approach using both '*hard*' and '*soft*' systems in chain co-ordination and '*identity preservation'* (*IP).* Examples of both '*hard*' and '*soft*' systems are provided in table 1. Hard systems include items like computer aided tracking systems but soft systems involve people and the need to acknowledge that people have different perceptions of the world. This has been found in practice, to be a critical variable. The authors suggest that identity preservation (IP) is a point of leverage in designing a system that continually improves Australia's export and domestic food supply chain performance.

A systems approach allows the mapping of supply chain functions on the one hand in order to develop stakeholder responsibility, and on the other, to ensure product integrity through using '*traceability*' of product to ensure product integrity. This paper does not intend to enter the GMO vs non-GMO debate, but concentrates on the issue of developing a system of identity preservation (IP) in food supply chains in order to build consumer confidence.. The '*top line'* concept underpinning this paper is described in Figure 1., where system accountability leads to product integrity. This conceptualisation is further expanded in Table 1.

Figure 1., Developing product integrity in market supply chains



Source: developed for this paper by the authors**.**

Figure I., models the way the three sub-systems intersect to synergise the intangible, 'product integrity'. These sub-systems are:

1. Market chain (total of all strategies, activities and outcomes in the whole chain system, see Table 1),
2. Assurance (all supporting activities both hard and soft that contributes to the intangible assurance, see Table 1),
3. Market chain co-ordination (higher level conceptual aspects that describe chain co-ordination, see Table 1).

The point of intersection is the outcome 'product integrity', which is a function of the synergy of the system. Underpinning this synergy is the process of continuous improvement and innovation (CI&I), which has been developed from:

1. Continuous improvement and innovation (CI&I) and,
2. Radical organisational transformation and restructuring.

(Stace & Dunphy, 1994)

When these are made to occur simultaneously, continuous improvement in operational and strategic changes and innovations result. The use of continuous improvement and innovation (CI&I) using the 'Better Practices Process' (Clark and Timms 2000), is a selection of processes, tools and techniques that facilitates focussed action on the elements or sub-systems that impact on performance of the market chain. Table 1. demonstrates the complexity of market chain co-ordination involving both hard and soft systems.

A close reading of Table 1, identifies a number of potential synergies occurring both vertically and horizontally. The potential of undertaking individual an 'systems mapping' (Clark and Timms, 2000), was explored in the case study. Systems mapping is aimed at identifying critical success factors and mapping for 'causal linkages'. Systems thinking is a discipline for seeing the 'structures' that underlie complex situations, and for discerning high from low leverage change (Senge, 1992).

Table 1. An approach to supply chain co-ordination involving both hard and soft systems

Top Line Conceptualisation

Change

Aspect of chain co-ordination ***Identity Preservation***	**Strategy** ***Market Chain Traceability***	**Activity** ***Assurance***	**Outcome** ***Product integrity***
Hard Systems • ***Market research*** • ***Computer-aided tracing systems (IP)*** • ***Vertical integration*** • ***Horizontal integration*** • ***Legislation*** • ***Logistics*** • ***GTS/ GPS*** • ***Information Management*** • ***Finance*** • ***Quality*** • ***ISO 4000***	• *Develop market intelligence systems (MIS)* • *Design compatible ID and data collection systems* • *Develop partnerships and alliances* • *Develop partnerships and alliances* • *Interpret and apply legislation* • *Streamline market chain systems* • *Develop quality data storage and retrieval systems* • *Implement QA and ISO 9000*	• *Ongoing market research* • *Collecting data from farm to retailer to achieve product assurance (labelling)* • *Maintaining open communication and information sharing both vertically and horizontally* • *Checking legislative performance indicators* • *Monitor systems logistics and report* • *Quality reports* • *Finance management reports* • *CI&I applied to all quality activities – testing* • *ISO standard application*	**Food Systems** **Sustainability**
Soft Systems • ***Networks*** • ***Relationships*** • ***Co-ordination*** • ***Self- regulation*** • ***Social systems*** • ***Change processes and pathways*** • ***Strategic planning*** • ***Eco systems***	• *Develop communications systems* • *ID strategic compatibility* • *ID strategic compatibility* • *ID and reward best practice* • *Implement and model values based management* • *ID vision, mission, goals and values and adopt CI&I processes* • *ID farming - eco system used in product development*	• *Communicate* • *Hold regular workshops* • *Disseminate information* • *Manage coordination* • *Monitor performance indicators and report regularly* • *Use 360 degree feedback systems* • *Run strategic planning workshop and implement action plans* • *Monitor and report* • *Adhere to protocols*	

Green Supply Chains

Bottom Line Action

Developed from the literature but with specific reference to: Gifford, Hall, and Ryan (1998)

A potential 'causal link' or 'leverage point' is drawn from Table 1, and explored in Table 2, as a lead in to labelling concepts and labelling pathways. Table 2, illustrates that collecting data from farm to retailer allows labelling of product that meets quality assurance standards, brand integrity and legislative requirements. Identity Preservation (IP) as an aspect of change co-ordination, with whole chain compatible data collection systems, is a point of leverage to focus action on chain performance.

Table 2 Point of leverage for Identity Preservation (IP).

Aspect of chain co-ordination Identity Preservation	**Strategy** Market Chain Traceability	**Activity** Assurance
Computer-aided tracing systems (IP)	*Design compatible ID and data collection systems*	*Collecting data from farm to retailer to achieve product assurance (labelling)*

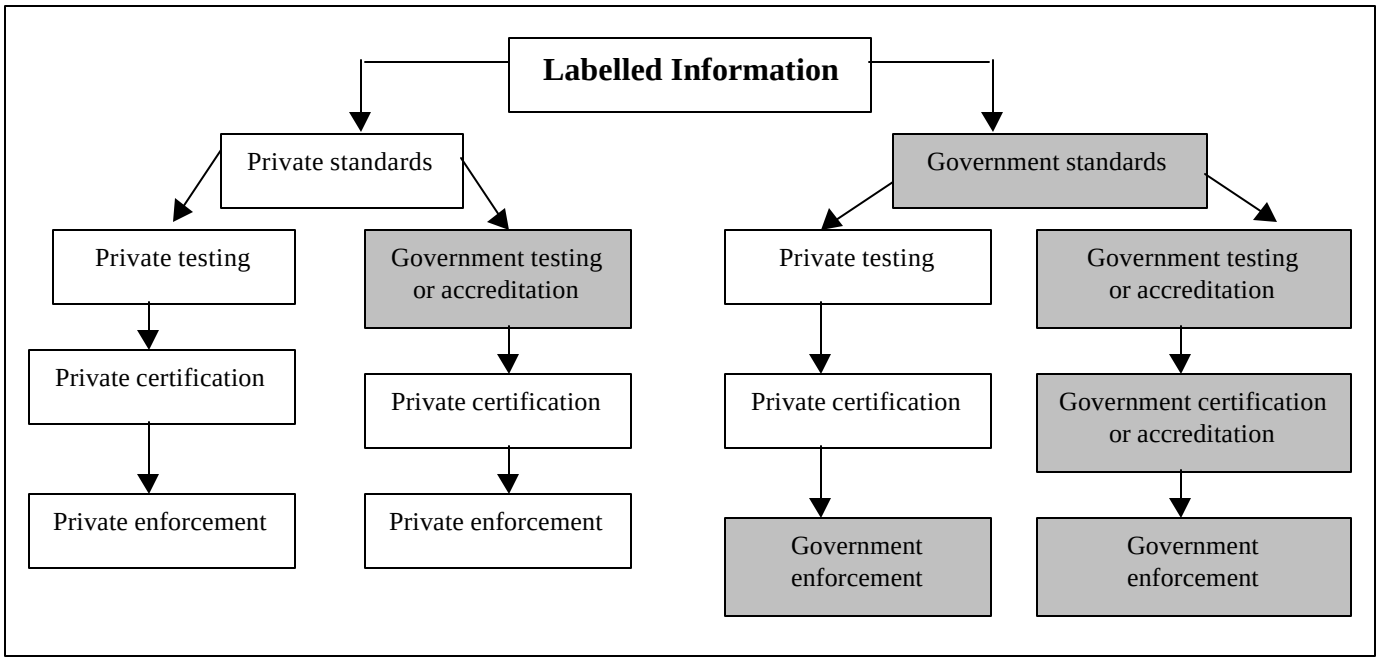
Labelling:

Labelling fits with quality assurance programs (QA) and identity preservation (IP) (see Figure 1., and Table 2.). Traditionally, firms provide information of all positive attributes that merit the cost, on labels. However, firms are sometimes unable to convince consumers of the validity of labelled information. In these cases the value of the label is diminished (USDA, 2000). Effective labelling hinges on the existence of standards, testing, certification and enforcement, and therefore the county of origin status as a *'clean green supplier'* is more important then ever to maintain Australia's competitive advantage.

Exporters face established country images, whether or not they have taken an active part in creating them. Such images can act as significant barriers to, or facilitators into foreign markets (Papadopoulos, 1993). It is therefore incumbent on both Australia government and agribusiness food suppliers to ensure that the product county image (PCI) of Australian products be guaranteed by 'truth in labelling'. Unless a bi-lateral approach is adopted, then individuals, despite their best efforts cannot afford the costs associated with mandatory labelling.

The costs and benefits of labelling can be enhanced through third party testing. Costs can be reduced by sheer volume of testing and verification that standards have been met. The US labelling experience can be translated to the Australian context through identifying pathways and cost saving as opposed to segregation of the three approaches: (1) self-labelling (2) third party services (3) government as in figure 2 (USDA 2000).

Figure 2. The labelling tree



Source; Adapted from Golan, Kuchler & Mitchell 2000, p.10.

In the Australian context, levels of labelling exist. As an example, the case study 'Sunfresh' labels their products individually with information to satisfy supermarket requirements: brand; variety; and price look up number (PLU). This is a lower order labelling and is not mandatory or statutory based, but retail requirements make this practice mandatory. However new Australian, labelling laws are making traceability within an identity preservation (IP) system a requirement, but without all the practical supports/pathways clearly defined as in Figure 2.

Case study - 'Sunfresh' Avocado Marketing Co-op Limited

The Avocado Marketing Co-op (Limited-AMCL) was formed in 1995 and are presently looking to form a marketing company to undertake the *'systematic hard*

marketing' for 'Sunfresh Avocados' (the brand name). The co-operative markets a *'basket'* of products (principally avocadoes, but also mangoes, limes, mandarins, lemons and custard apples) on behalf of grower members, thereby giving the brand a year round presence in the marketplace.

Unlike traditional producer co-operatives, the organisation through its directors has a clear market orientation instead of a production focus. This is reflected through its marketing activities. *'Freshcare'* is the on-farm quality assurance program. They plan an expansion of a market chain identity preservation (IP) system for the product chain as a whole. 'Sunfresh' is quality assured and presents domestic branded product that has strong market place presence with good consumer recognition. One strategy is to use a *'ripe sticker'* on fruit at selected retail outlets, with consumers paying a premium for ripe fruit. This has proved to be a winner with both consumers and retailers. 'Sunfresh' is developing leverage in its market chain using a range of strategies including the extension of identity preservation (IP) to ensure relationships and alliances between stakeholders are based on high-level trust.

Strategic planning for its total value-demand chain is being explored using a range of techniques. The authors facilitated *'systems mapping'* (Senge, 1992) of the 'Sunfresh' chain. This mapping clearly identified causal links between sub-systems that reinforced the critical relationships between: effectiveness and efficiency of communications; quality of 'Sunfresh' value/demand chain management; effectiveness of business development for product suppliers; success and innovativeness of product research and development; and amount of consumer awareness of product. *'Systems mapping'* clearly identified a series of *'points of greatest leverage*' that the new marketing company and the co-operative can focus on to *'continually improve profit, lifestyle and environment of Sunfresh value/demand chain participants'*.

The points of greatest leverage identified were:

- Maximise e-commerce and web site for information sharing and business to customer (business) contact

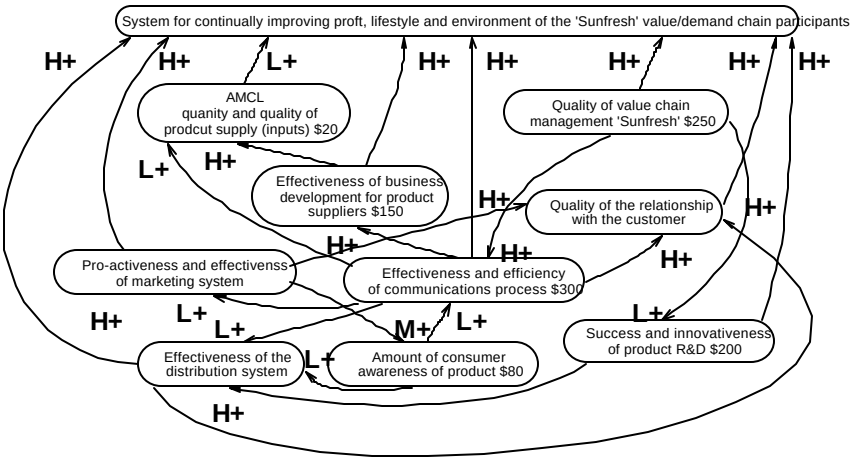
- Develop strategies to improve and maximise quality of the value chain management
- Maintenance of high quality business operations in product supply
- Maintenance of high quality communications systems both internally and externally

The value of '*systems mapping'* in the general and '*case study context'* includes:

- Identification of critical elements in a system
- Identification of sub-systems in a larger system
- Identification of leverage that elements or sub-systems have within the whole
- Allows choices about points of leverage and where effort or budget should expended
- Identifies opportunities for re-focus or changed focus at either strategic or operational level
- Provides an opportunity for different views to be presented
- Provides 'big picture' analysis
- Re-confirms critical elements in a system

The 'Sunfresh' systems map (Figure 2), identified positive causal links and whether these links are high, medium or low impact. The process of undertaking systems mapping, the discussions and thinking involved in the process and the allocation of 'dollars' or 'voting on action' provides a powerful tool for focussed action.

Figure 2. 'Sunfresh' Systems Map



This case study based on horticulture differs from the soya and beef examples discussed in the body because of the varying degrees of product perishability and long-lines (product availability over extended time periods). In this context QA as a strategy using IP as a system is critical in obtaining price premiums.

Conclusions and recommendations for further research

In conclusion, identity preservation (IP) and 'truth in labelling' are important points of leverage in a systems approach in maintaining Australia's competitive advantage in clean green food systems. Market chain management is a complex balance between hard and soft systems and needs careful management as highlighted in Table 1.

This paper has addressed a gap in the literature by suggesting that identity preservation (IP) should be a point of leverage in designing a system that continually improves Australia's export and domestic food supply chain performance. The case study based on horticulture while differing from the soya and beef examples, because of product perishability emphasises the need to use QA as a strategy and IP as a system. If used correctly price premiums will result.

The Australian labelling landscape needs to take account of the new labelling laws and institute suitable pathways and systems to allow traceability and the development of identity preservation (IP) systems.

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