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CASE
STUDY

GALACTIC CO-OPERATIVE LTD: WORKING FOR A SCIENTIFIC SOLUTION SINCE 2017



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INTRODUCTION

Galactic Co-operative (WA) Ltd is currently the only worker co-operative in Western Australia (WA) and one of a few in the history of worker co-operatives in the state. Founded in 2017 by Andrea Biondo,



Galactic Co-operative provides 'technical expertise, servicing and sustainability consulting across multiple industries' at a national level (Galactic, 2024a). The Co-operative trades under the tradename Galactic Scientific, emphasising a local mindset while providing expertise, training, maintenance and repair services for scientific equipment in laboratories as well as the broadcast and telecommunication industries (Galactic, 2024b). As a part of its Galactic Sustainability branch, the Co-operative provides sustainability expertise, including on issues of avoiding landfill and reducing greenhouse gas emissions (Galactic, 2024c).

According to Galactic's 2024 Annual Report,

"[Galactic is] committed to fostering a collaborative environment where everyone can thrive. By leveraging our collective skills and knowledge, we aim to provide exceptional services and drive positive change in the industries we serve. At Galactic Co-operative, we believe in the power of community and the importance of sustainability. We're here to support our members, clients, and planet, working together to build a better future for all." (Galactic, 2024d, p. 3).

Figure 1: Galactic Co-operative Ltd Team in 2022



Source: Galactic (2022).

Co-operative Enterprise Research Unit (CERU)
Galactic Co-operative Ltd: Working for a Scientific Solution since 2017



Galactic Co-operative Ltd. (Galactic) is considered young in business terms, and this case study will explore the Co-operative's development since 2014, providing necessary context on worker co-operatives and their history within Australia. Because Galactic is a worker co-operative, this case study will include the history of both its members and employees to provide an accurate picture of Galactic's past and present. The Galactic journey and experiences are also benchmarked against published global research into worker co-operatives. The study will then examine the Co-operative within a conceptual research framework on co-operatives and mutual enterprises (CMEs), looking at the systems level and enterprise level factors, including its social and economic contributions to Western Australia (WA). Finally, key lessons from the history of the Galactic Co-operative will be discussed.

CHAPTER 1: BACKGROUND TO THE CO-OPERATIVE'S FOUNDATION

In order to provide a context for understanding the history of the Galactic Co-operative (Galactic), it is appropriate to overview the history of the worker co-operatives with specific reference to Australian examples.

THE HISTORY OF WORKER CO-OPERATIVES

The origins of worker co-operatives can be traced to France, with *L'Artisan*, a worker's newspaper first promoting the idea in 1830 (Negri Zamagni, 2017; Balnave & Patmore, 2017; 2018; Patmore et al., 2024a). Comte Henri de Saint-Simon, the president of a Paris commune during the French Revolution, championed for public ownership of industry in which people could work according to ability with rewards based on services rendered (Balnave & Patmore, 2018).

Inspired by Saint-Simon, in 1831 the doctor Philippe Buchez established an association of cabinetmakers, advocating for a set of principles for worker co-operatives (Balnave & Patmore, 2017; 2018; Patmore et al., 2024a). These included democratic governance, all workers gaining membership to the co-operative after a year, return of surplus in proportion to work done, and if a co-operative dissolved, assets were to be transferred to another co-operative. Inspired by Buchez's efforts, in Paris in 1834, four workers created a jewellers' worker co-operative (Balnave & Patmore, 2017; Patmore et al., 2024a). Additionally, associations of stonemasons and bakers were also formed (Negri Zamagni, 2017).

Balnave and Patmore (2018) suggest that industrialisation in France was characterised by an emphasis on skilled labour, local markets, and small-scale production, with the state intervening in industry to overcome issues of industrial development. However, they state,

"... dependence of these co-operatives on the state undermined the willingness of their members to seek work and the law required them to be registered as private partnerships with unlimited liability" (p. 60).

In 1839 the socialist Louis Blanc published *L'Organisation du Travail* which advocated for *ateliers sociaux* (Social Workshops)—worker co-operatives—which shared equal benefits among members and received governmental aid (Balnave & Patmore, 2018; Patmore et al., 2024a). In 1848, the first legislation was introduced which gave worker co-operatives preference in public works' contracts and created a fund for them (Negri Zamagni, 2017). The number of worker co-operatives existing in France by 1904 is debated, with Balnave and Patmore (2018) stating 200 and Negri Zamagni (2017) claiming 358. Many of these enterprises originated from the conversion of investor-owned firms (IOFs) (Negri Zamagni, 2017).

Inspired by the co-operatives of Buchez and Blanc, several Christian socialists in the south of England, concerned with the impact of industrialisation on the poor, fostered the establishment of worker co-operatives from 1848 (Balnave & Patmore, 2018). In 1850 they launched the Association of Working Tailors in London and the Society for Promoting Working Men's Associations. In addition, they established the London Needlewoman's Association and Working Associations for Bakers, Builders, Printers, and Tailors.

In their research on pre-industrialisation examples of co-operative types Balnave and Patmore (2017; 2018) note that as early as 1777 an English worker co-operative of Birmingham tailors was formed. Additionally, there were pre- and post-Revolutionary War enterprises in major cities of the United States (US). For example, in 1768 in New York, a reduction in wages led 20 tailors to strike and subsequently form a co-operative to obtain work. Similar actions occurred with carpenters in Philadelphia in 1791, plus shoemakers in Baltimore in 1794, and Philadelphia in 1806. However, Balnave and Patmore (2018) conclude such organisations were usually short-lived due to their intention of disbanding once striking was complete.

In the Basque region of Spain, the worker co-operative Mondragón emerged in 1956, originally as a manufacturer of paraffin heaters (Balnave & Patmore, 2017). Notably, in their study of Mondragón, Barandiaran and Lezaun (2017) assert that early co-operatives did not follow preordained plans or specific managerial philosophies. Rather, they expressed the practice of,

“... establishing and sustaining entrepreneurial activities that sought to do justice to a holistic view of the worker as a person” (p. 281).

Over time, however, philosophies and plans emerged within the co-operative movement.

THE ROCHDALE PRINCIPLES

The co-operative movement can trace its origins back to the sixteenth and seventeenth centuries in the form of Friendly Societies, however, the emergence of co-operatives began in the eighteenth century and developed rapidly during the nineteenth century (Holyoake, 1876; Williams, 2007; Balnave & Patmore, 2018). Arguably one of the first modern co-operatives is the Rochdale Society of Equitable Pioneers, which was founded in 1844 by a group of business owners in the weaving industry in northern England who established a store to provide affordable food and other goods for members of their local community (Balnave & Patmore, 2012; 2017; Gupta, 2014).

Although the Rochdale Society was established as a consumer co-operative, over time it widened its portfolio to include a worker co-operative, the Rochdale Co-operative Manufacturing Society, which was established in 1854, and was an industrial worker co-operative. It was focused on weaving, and rented a mill then installed ninety-six power looms. The workers were shareholders and profits from the company were distributed based on a formula that considered the wages earned by the worker-shareholders. However, in 1862, the co-operative demutualised and became a joint-stock company (Fairbairn, 1994).

Arguably the Rochdale Society’s contribution to the wider co-operative movement was its constitution and set of guiding principles that formed the basis of the seven co-operative principles which impact worker co-operatives today (Rochdale Society, 1877; Fairbairn, 1994; Balnave & Patmore, 2012). These principles included:

- Voluntary and open membership with no gender, political, racial, religious, or social bias.
- A democratic structure of one-member-one-vote.



- A member patronage relationship with the co-operative, ensuring members were positioned as owners.
- A fixed and limited interest on capital.
- The disposal of net assets without profit.
- The distribution of surplus as dividend on purchase.
- Cash trading with no extension of credit, and
- To promote the value of education amongst members (Birchall, 2014; Mazzarol et al., 2014).

DEFINING WORKER CO-OPERATIVES

According to Mazzarol (2024), a co-operative can be defined as an,

“... autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly owned and democratically controlled enterprise” (p. 2).

Similarly, Thompson (2012) asserts it is a *“social institution dedicated to production”* (p. 5, emphasis theirs).

Patmore, Balnave and Marjanovic (2024a) assert that there is no consensus on a definition of worker co-operatives. However, typical characteristics include that it should be an autonomous enterprise, that is governed by the co-operative principle of one-member-one-vote, and records membership through nominal holdings of share capital. Additionally, such co-operatives should possess formal provisions for direct and indirect participation of worker members in all management levels, and workers receive a share of the income after payment of material costs.

Through the co-operative model, workers are provided with a direct way to not only control their production but also shape the economy (Balnave & Patmore, 2018; Patmore et al., 2024a). Moreover, worker co-operatives are distinct from other democratic industries such as joint consultation and work councils where ownership is in the hands of the state, external shareholders, or entrepreneurs (Balnave & Patmore, 2018). Worker co-operatives are mostly found in the processing and service sectors (Altman, 2010).

The International Co-operative Alliance (ICA), which is a membership based peak body for international co-operatives founded in 1895, define a worker co-operative as one in which,

“Members share an interest in the work which is provided by or ensured through the co-operative. The members are individual workers (worker-members) whose jobs are directly assured through their co-operative” (ICA, 2024, p. 151).

Patmore et al. (2024a) also highlight variations in worker co-operatives, including the French and Mondragón models. The former allows non-current workers as members, whereas the latter hires considerable amounts of non-member staff to meet demand as it expands internationally,

with only 38 per cent of member workers in 2009. In their research on United Kingdom (UK) worker co-operatives found most co-operatives had both member and non-member workers (Preluca, Hakelius & Mark-Herbert, 2022).

Altman (2010) suggests that worker co-operatives are configured to meet worker interests first, rather than maximising profit or share values as investor-owned firms (IOFs) do. Any profit or surplus is therefore distributed among members, typically based on membership or hours worked, or can be re-invested to grow the enterprise and make it more competitive. In addition, although many worker co-operatives are run by managers and a board of directors, the worker-members have ultimate decision-making power (Altman, 2010; Novkovic et al., 2012; Tonnesen, 2012; Silva & Morello, 2021; Preluca et al., 2022). This view is supported by other research that sees the worker co-operatives' purpose as being focused on satisfying economic, social, and cultural common needs through joint ownership and democratic management while not necessarily being profit driven (Bastida et al., 2022; Cheney et al., 2023).

Dow (2018) defines worker co-operatives as "labour-managed firms" in which those who supply the labour have the ultimate rights to control the firm, including the right to hire and fire top management. Similarly, Dufays, O'Shea, Huybrechts, and Nelson (2020) have defined the worker co-operatives as owning the organisation through investment in both labour and capital.

Importantly, McCain (2007), Tonnesen (2012), and Pérotin (2017) define such enterprises as operating within the ICA principles, though they may be set up slightly differently depending on national context. The principle of open membership means that no matter their identity or affiliation a person can become a member of the co-operative typically through a one-time fee (Tonnesen, 2012; Pérotin, 2013). Furthermore, it involves a democratic structure where the right to control follows membership in the firm, not just employment, as the latter alone confers no decision-making rights (McCain, 2007).

However, members must have active status, which usually requires a minimum number of working hours and attendance of meetings. This ensures those impacted by decisions are the ones making them (Cheney et al., 2023). Once a member, the worker has the right to participate in governance and elect directors to the board (Tonnesen, 2012).

In their investigation of worker co-operatives, scholars Preluca, Hakelius, and Mark-Herbert (2022) found that incentives for membership included:

"Giving workers control and decision-making power over their own work and over the direction of the co-op; participating in decision-making; individual autonomy and self-responsibility; sharing of power and responsibility among the members; good wages [...] employment security, especially 'employment that was meaningful, interesting, ethical, and aligned with co-operative and democratic values'" (Preluca et al., 2022, p. 11).

LIMITATIONS AND STRENGTHS OF THE MODEL

An often-debated issue of worker co-operatives, and co-operatives generally, is the claim that they are inefficient and not competitive in comparison to IOFs (McCain 2007; Altman, 2010; Thompson, 2015; Pérotin, 2017; Dufays et al., 2020; Cheney et al., 2023; Patmore et al., 2024a).

According to this perspective, worker co-operatives are considered of marginal importance as some scholars argue their value is only during times of crisis with an otherwise typically transient presence (Altman, 2010). Indeed, Cheney et al. (2023), suggest that one of the main motivators for the establishment of worker co-operatives is wealth inequality. Moreover, Vieta and Lionais (2022) respond that co-operatives are often more resilient than IOFs in times of capitalist crisis as they can protect communities from such issues as market fluctuations and business closures.

There is an assumption that success is minimal as worker co-operatives are undercapitalised, and are not required to invest profits, focusing instead on employment and worker income. Further, they are also too egalitarian to generate efficiency incentives and attract high quality management (Altman, 2010; Gupta, 2014; Pérotin, 2017; Dufays et al., 2020; Bastida et al., 2022; Cheney et al., 2023). Due to their focus on meeting worker interests, maintaining and/or growing employment is often a “binding constraint” of worker co-operatives (Altman, 2010, p. 564).

Silva and Morello (2021) state that efficiency refers to the “maximization of output per unit of factor inputs” and argues it tends to be necessary for long-term survival of co-operatives, particularly due to competition with IOFs and market forces (p. 2). Inefficiency, then, refers to “a wedge between maximum and actual production levels” (Silva & Morello, 2021, p. 2).

According to Pérotin (2017) economists propose two potential remedies for underinvestment, despite these remedies already existing within the worker co-operative model. The first is individually owned tradable membership shares which allow members to get a share of all future returns on investment when they leave the co-operative. This is observable in many worker co-operatives created from an existing IOF as well as examples in the US and UK. The second proposed remedy is a rule for compulsory profit plough-backs which allows for the accumulation of capital. This is exemplified with the Basque region Mondragón co-operative and some worker co-operatives in Italy and France. However, these solutions have degenerative risks.

Degenerative risk refers to the loss of democratic features in an enterprise (Dufays et al., 2020). When members have large amounts of capital, there is a danger that they will demutualise to maximise their financial returns (Patmore et al., 2024a). This is a particular risk when members are close to retirement as they may be tempted to sell their shares to conventional investor-owners, resulting in the enterprise demutualising (Gupta, 2014; Pérotin, 2017). Moreover, degenerative risks exist that relate to formal consolidation of power and pressure on consensus-based decision-making. This is typically constrained by a lack of time and space dedicated to it, creating issues of economic efficiency as co-operatives try to stay economically competitive (Zaunseder, 2022).

Pérotin (2017) observes that the risk of this kind of demutualisation does not occur when an enterprise has compulsory plough-back into collective capital rules. However, it should be noted that this may indicate founding members leave some of the capital they accumulated from their efforts into the enterprise when leaving, while subsequent generations inherit the accumulated capital. Pérotin makes the case that Mondragón remedies this with a non-refundable fee on new members. Moreover, the plough-back rule not only ensures the enterprise survives for future generations it also avoids degeneration from productive non-members.

Another form of degenerative risk is from market pressures pushing the co-operative to match the dominant model in the environment (Dufays et al., 2020; Preluca et al., 2022). This could result in the co-operative shifting toward capitalist practices, including hiring non-member employees, concentrating power in management hands or an elite minority, and prioritising growth and profit-seeking over member needs.

Patmore et al. (2024a) suggest that having a mixture of member and non-member workers, as is the case with the Mondragón example, breaks down the link between ownership and employment typical of worker co-operatives. This could indicate degeneration as the co-operative strives to be competitive. However, Preluca et al (2022) indicate that the practice is more often temporary and thus aligned with the principle of voluntary membership.

Despite a critical emphasis on worker co-operatives prioritising employment and worker income, a further assumption is that these firms tend to cut jobs and output during times of crisis. However, several major studies on worker co-operatives across the globe in comparison to IOFs reveal the opposite (Puusa et al., 2016; Pérotin, 2017; Dow, 2018; Bastida et al., 2022; Preluca et al., 2022). Worker co-operatives from a variety of industries tend to adjust pay before employment. The beneficial outcomes of which are discussed further in this section.

Academic researchers have also postulated that worker co-operatives are rare, in decline and prone to failure due to systemic problems inherent in the co-operative model (Pérotin, 2017; Patmore et al., 2024a). In addition, worker co-operatives are perceived as non-replicable on a large scale due to global competition (Tonnesen, 2012). The co-operative would have to either remain small or compromise its values to compete.

Pérotin (2017) asserts these perceptions of worker co-operatives are based on the view that because worker-members do not get a share of a co-operative's present value of future profits when they leave, they are incentivised to only invest in projects of "inefficiently high and short-term returns," potentially consuming existing capital rather than investing, and thus remaining at an "inefficiently small scale" or shrinking to the point of extinction (p. 135).

Thompson (2015) terms this a kind of "cultural degeneration" which tends to affect value-based organisations like worker co-operatives (p. 9). However, Gupta's (2014) research highlights a "pay it forward" mentality within a California-based worker co-operative, in which interests of the individual were not placed before those of the group.

Both Dow (2018) and Silva and Morello (2021) posit the misconceptions about co-operatives are due to assumptions of heterogeneous preferences among workers, which can include income, conditions, effort, and job security, whereas IOFs unanimously agree on the goals of profit and present value. Thus, some scholars conclude that worker co-operatives have higher costs for managerial decision-making (Dow, 2018; Dufays et al., 2020; Silva & Morello, 2021). Nevertheless, adhering to the homogeneity of the co-operative principles provides a common set of decision-making criteria that minimises consensus building efforts and costs (Silva & Morello, 2021).

Pérotin (2017) asserts that the misconceptions of worker co-operatives are due to the partial empirical evidence available until recently. As more extensive data becomes available, including over the last decade, a different picture emerges. The more research that is conducted into worker co-operatives at the local, national, and international level, the more accurate and nuanced our understanding of such enterprises will be.

Indeed, it is clear worker co-operatives are present in most industries, existing at least as well as IOFs. For example, cases can be found in Italy, France and the UK that have survived for “well over a century”, and which have the capacity to exist on a large scale. This includes examples such as Mondragón and Sistem Unimed, which have a broad role in the market economy (Tonnesen, 2012; Pérotin, 2017, p. 134; Cheney et al., 2023; ICA, 2024). For example, research into US worker co-operatives found that on average they reported higher rates of profit (6.4%) than the US average (5.9%)¹ (Kaswan, 2017).

Moreover, Dow (2018) claims that the existence of successful worker co-operatives in Italy, Spain, and France call the misconceptions into question and suggests that problems can be managed through strong organisational design. Although democratic decision-making can be slow, some empirical studies have noted systems of supervision common in worker co-operatives meant less was spent than in IOFs while achieving higher productivity (McCain, 2007; Cheney et al., 2023). For example, Thompson (2015) notes that worker co-operatives tend to utilise a form of “mutual monitoring” rather than managerial supervision (p. 7). Furthermore, case studies on the worker co-operatives found in France, Italy, Uruguay, and the US plywood industry refute the claim that these enterprises are rare due to poor work incentives (Novkovic et al., 2012; Dow, 2018).

Analysis of the competitiveness of co-operatives have incorporated game theory models to explain the factors informing their operation. According to Mazzarol (2024), “game theory research suggests that cooperative behaviour is both rational and more beneficial” than competition (p. 70). Indeed, game theory concepts like the Prisoner’s Dilemma argue that collaboration, rather than individual actions, is a superior option for circumstances where the rules are “stacked against separate rather than collective behaviour” (Mazzarol, 2024, p. 70).

In addition, Thompson (2015) suggests that game theory also highlights the potential necessity for hierarchical management systems and complex divisions of labour to address issues of coordination even when cooperation is achieved at a deep level through the organisation’s culture. However, such systems might foster highly individualistic behaviour which undermines deep-level co-operation. According to Altman (2010), the advantage of the worker co-operative model is the,

“... capacity to increase the quantity and quality of effort inputs into the ‘production process,’ thereby producing higher levels of output and a superior quality of output” (p. 568).

¹ Notably, Kaswan (2017) cautions that US worker co-operatives have low levels of reporting, which tempers this statistic.

Altman (2010) calls this the “x-efficiency effect”. Therefore, although worker co-operatives can be more expensive to operate than IOFs, they have the capacity to be much more productive, countering the increased operating costs.

Dow (2018) concurs, stating that direct participation of workers creates productivity advantages in the production process, including valuable knowledge on the market, technology, and organisation which makes them competitive. Moreover, Altman (2010) suggests that improving working conditions and benefits while maintaining employment, workers are incentivised to develop and adopt technologies which make them competitive. Further, when workers are owners there is much less incentive to quit; low turnover rates can increase productivity and reduce training costs. Indeed, employment security is a main motivator for joining co-operatives (Pérotin, 2017; Preluca et al., 2022).

Many academic researchers support this perspective, emphasising how worker co-operatives respond effectively to the employment and wage impacts of economic crises (see, Tonnesen, 2012; Balnave & Patmore, 2018; Bastida et al., 2022; Preluca et al., 2022). Bastida et al. (2022) states that such enterprises “create quality employment with both direct and indirect effects” on the population (p. 1612). Indeed, their research indicates:

“Comparative and cross-cultural research on WCs has supported the fact these organisations provide higher quality employment, greater job stability, greater flexibility to adapt based on adjustments in working time rather than in the workforce, and better survival rates, all of which leads to better employment indicators.” (p. 1612).

The importance of worker ownership cannot be understated. Firstly, it means non-wage characteristics of jobs, considered important to workers, are not only known but taken into account by the organisation (Pérotin, 2017). Secondly, the increased autonomy and recognition of the worker co-operative model can foster intrinsic motivation, wellbeing, and creativity (Novkovic et al., 2012; Tonnesen, 2012; Pérotin, 2017; Preluca et al., 2022). Furthermore, worker ownership means individuals are less likely to be exploited through overtime and wage violations (Tonnesen, 2012).

Workplace culture is also essential, involving values of mutual aid, democracy, self-responsibility, solidarity, and equality in addition to ethics of honesty, social responsibility, transparency, and concern for the community (ICA, 1995; Novkovic et al., 2012; Pérotin, 2017; Bastida et al., 2022; Ghauri et al., 2021; Cheney et al., 2023). These values and ethics can foster feelings of pride, dedication, and belonging in members while reducing issues of alienation (Tonnesen, 2012; Preluca et al., 2022). When such values and ethics fit with the values, goals, social and financial needs, and expectations of individuals it can motivate them to choose the co-operative model (Bastida et al., 2022).

Ghauri et al. (2024) term this “values congruence”, and argue it strengthens commitment, loyalty, and the relationship between stakeholders, improves organisational performance, and fosters “favourable foundations” for the development of social capital (Ghauri et al., 2021, p. 9; 2024). Importantly, however, this congruence needs to be monitored consistently—at an individual and organisational level--to ensure the alignment of values is maintained (Ghauri et al., 2024).

In addition, Novkovic et al. (2012) and Dufays et al. (2020) suggest that worker co-operative values of equality, reciprocity, and transparency, foster trust and social capital. Similarly, Cheney et al. (2023) assert that trust is necessary for solidarity and deep cooperation internally within both the co-operative and between networks of co-operatives. Moreover, research on values within co-operatives demonstrates that both executives and members perceive trust as critical to success (Ghuri et al., 2021). Trust can be fostered by placing problem-solving over profit-making, emphasising a community spirit among workers and other stakeholders (Dufays et al., 2020).

The abovementioned values and ethics reflect the broader co-operative principles of voluntary and open membership, democratic member control, member economic participation, autonomy, independence, education and training, co-operation among co-operatives, and concern for the community (ICA, 1995; Preluca et al., 2022; Cheney et al., 2023). However, research into the practice of co-operative values indicate the principles of education, training and information in addition to co-operation between co-operatives did not resonate with members of co-operatives (Ghuri et al., 2021). Indeed, they state,

“... most viewed this as technical information that was relevant to their industry as well as business knowledge. There was limited formal training on the co-operative business model and how it operates, let alone co-operative principles and values” (p. 15).

In their research on Finnish co-operatives, Puusa, Hokkila, and Varis (2016) provide evidence to suggest that the problems of passive decision-making, high levels of individualistic goals such as economic and employment benefits over collective solidarity, and shirking responsibilities were due to poor knowledge of what a co-operative is. Indeed, when interviewees discussed how, when joining or establishing their co-operatives, they hardly knew anything about this form of enterprise (Puusa et al., 2016).

Puusa et al. (2016) also observed a change in the values of new cooperators, with more individualistic interpretations of a co-operative's purpose and thus a reinterpretation of the identity of the co-operative. They concluded that to avoid co-operatives becoming more like IOFs, education and efforts toward promoting cooperativism is essential. Furthermore, Ghauri et al.'s (2021) analysis of research on co-operative principles and values highlighted the strong relationship between co-operative education and efficiency. This study suggested that, like the co-operative values, this has the potential to strengthen social cohesion and accounts for examples where members take short-term economic sacrifices in the pursuit of long-term sustainability.

Similarly, Barandiaran and Lezaun (2017) propose that there is a gap between the ideals of the co-operative principles and values and the day-to-day reality of co-operatives, noting a generational dimension with younger worker-members struggling to relate it to their lived experiences. Thompson (2015) asserts that what matters for worker behaviours is not which organisational structure is used (i.e., hierarchical or non-hierarchical), but how it is interpreted by workers in relation to their goals and relations they share with the co-operative. Values, organisational culture, and active application of the co-operative principles play a significant part in the day to day running of co-operatives.

In addition to values, active membership is integral to the success of a worker co-operative (Novkovic et al., 2012; Silva & Morello, 2021; Cheney et al., 2023; Ghauri et al., 2024). Indeed, Silva and Morello (2021) state that there is a risk with horizontal and participatory organisational structures which depend on consensus building, as they are more susceptible to “free-riding” by workers and managers than hierarchal and monitoring-based structures. Moreover, they suggest that when the needs and interests of a co-operative do not match those of its members, it risks free riding in the pooling or shirking of worker efforts. Gupta (2014) explains that shirking among workers is due to the perception that an individual’s impact on production is likely small while compensation is based on what the group or co-operative as a whole produces.

Contract and competence-based theories associated with co-operatives suggests that contract-based theories posit free riding can be addressed through managerial hierarchies and monitoring in addition to punishment of workers who would otherwise shirk on their responsibilities. In addition, this implies workers cannot own nor control their enterprise, as non-worker ownership and control is intrinsic to “how managerial hierarchies are supposed to achieve cooperation” (Thompson, 2015, p. 7).

Mazzarol (2024) asserts that social norms play a part in free riding, with stable, immobile communities tending to “avoid excessive free riding” in comparison to more transient and mobile communities (p. 72). Similarly, Gupta (2014), based on research into a worker co-operative in California, found that peer pressure played an important role in maintaining equality and fairness within the co-operative. Thus, free riding is managed by group dynamics. Other research found that free riding can be mitigated through hiring practices, screening potential employees for co-operative values, as “good co-operators” can reduce monitoring costs and improve collective well-being (Silva & Morello, 2021).

The strengths of worker co-operatives in job preservation have considerable implications for the wider community. Both economic and social benefits can occur through job preservation, including improving conditions in local economies and communities, moving toward more equitable societies, positive effects on public health, and saving on unemployment benefits and social services resources to name a few (see, Tonnesen, 2012; Pérotin, 2017; Cheney et al., 2023).

Tonnesen (2012) emphasises that a worker co-operative has the capacity to alleviate poverty by retaining surpluses and providing job security within the local community, while enhancing the welfare of local worker-members. Moreover, the financial surplus of a worker co-operative can be invested into other co-operatives, expanding community benefits. In addition, a contribution to the community can involve the funding of community projects using the co-operative’s surplus, which can lead to the increase in member engagement in the community (Preluca et al., 2022; Cheney et al., 2023).

GLOBAL WORKER CO-OPERATIVES TODAY

In 2013, the US organisation Democracy at Work Institute (DWI) conducted a national survey of worker co-operatives, with 109 enterprises taking part (DWI, 2013). The survey indicated that most worker co-operatives were small businesses, with a median workforce of 10 people. Moreover, they found that the majority of the co-operatives surveyed were established between



2000 and 2013. According to DWI (2013), worker co-operatives during this period slightly outperformed IOFs, stating,

“In 2013, the average private firm had a profit margin of 5.9%, while the margin for worker cooperatives was 6.4%. While this figure is based on a small sample size (67 firms), it does appear that the worker cooperatives examined here are competitive and viable as a whole, particularly in the manufacturing and retail industries.” (DWI, 2013, p. 3)

According to the ICA (2024), in the Top 300 co-operatives by turnover USD, worker co-operatives consisted of five, making up 1.7 per cent globally. However, looking at turnover/GDP per capita, worker co-operatives consisted of eight, making up 2.7 per cent globally.

In the top 10 co-operatives of 2021, the worker co-operative Sistem Unimed in Brazil came fourth place with a turnover/GDP per capita of US\$2.02 million and 135,854 employees by headcount (ICA, 2024). Unimed emerged in 1967 in São Paulo as a worker co-operative for medical professional members to receive fair wages for their work and to ensure a high standard of care for patients (Duarte, 2001). Moreover, the overarching group Sistem Unimed, consisting of worker co-operatives and health insurance operators, was founded in 1975 and now has over 339 branches across Brazil (Duarte, 2001; Sistem Unimed, 2024).

Under the categories of “Industry and Utilities”, Mondragón placed first in 2020 and 2021, with a turnover of US\$13.49 billion and 80,000 employees (ICA, 2024). In the Top 300 of 2021, Mondragón placed 33rd by turnover/GDP per capita and 45th by turnover in US dollars. Mondragón originated in 1956 and consists of 98 co-operatives predominantly in the Basque Autonomous Region of Spain, the largest business group in the region and the tenth largest in Spain (ICA, 2024).

AUSTRALIAN WORKER CO-OPERATIVES

It is worth noting that according to Patmore et al. (2024b), scholarship is lacking on the history of worker co-operatives, with a,

“... virtual absence of substantial long-term quantitative studies of worker co-operatives internationally” (Patmore et al., 2024b, para. 7).

Indeed, they suggest that labour history has tended to focus on particular periods.

As discussion earlier, by the nineteenth century co-operatives were well established in Britain and Europe. As a result, these businesses were brought to Australia during the colonial era as a means of addressing economic and social issues (Patmore & Balnave, 2018). Moreover, the development of co-operatives in any given nation is informed by social, political, cultural, and environmental contexts, as demonstrated by the various case studies developed for this publication series.²

² See the other research case studies at www.ceru.au/research/case-studies/

According to Patmore et al. (2024a) several factors impacted the development in Australia of the worker co-operative movement. These factors included the gold rushes in WA during the 1890s, and the depression and great strikes that occurred in the eastern colonies of Australia during the same period. The formation of the Australian Labor Party (ALP) in 1891 also had an impact on the development of co-operatives, with resulting surges of interest in cooperativism. However, worker co-operatives were limited in their impact due to a focus on trade unions.

There is a difficulty in tracing early worker co-operatives in Australia, distinguishing them from Friendly Societies and trade unions. However, Balnave and Patmore (2017) note an early example in Whyalla, South Australia in which women machinists formed a worker co-operative when faced with the closure of the James North Glove Factory where they worked. According to Balnave and Patmore (2017),

“The officials of their union, the Miscellaneous Workers Union, were influenced by developments in the UK where sit-ins had led to the formation of workers’ co-operatives. The co-operative operated at an increasing profit for nine months before it was taken over by private interests that guaranteed the workers’ jobs.” (Balnave & Patmore, 2017, p. 16).

Patmore et al. (2024a) also identify an early Coachmakers Co-operative Society established in Sydney in 1834, as well as a tailors worker co-operative founded in Melbourne in July 1846 that was created in response to an employer lockout. This co-operative quickly demutualised once the issue was resolved.

Interest in worker co-operatives by the Australian labour movement diminished from the 1860s, which has been attributed to the emergence of the trades unions that helped improve wages and conditions through industrial action and bargaining negotiations, rather than forming the worker co-operatives. Trade unions were also concerned about the financial viability and sustainability of worker co-operatives, plus their potential to have conflict of interest with union conditions. Indeed, trade unions were generally hostile and suspicious of worker co-operatives, as unions were concerned that co-operatives would legitimise capitalist power and worker-owners would see little need for trade unions. There are examples of worker co-operatives that demonstrated an anti-union stance (Patmore et al., 2024b).

The first co-operative in WA was founded in the southern port of Albany in response to issues of high costs of living, excessive store credit, and low wages for workers of the Peninsular & Oriental Steam Navigation Company (P&O), which operated a large-scale coaling station at the port and was the largest employer in the district (Baskerville et al., 2022). However, rather than forming a worker co-operative, the newly arrived P&O agent William Carmalt Clifton sought an alternative by addressing the issue of excessive prices and store credit from local retailers. Thus, the Albany Co-operative Society Ltd. was formed in 1867 as a consumer co-operative, registered under the Joint Stock Companies Ordinance 1858 as there was no co-operative colonial legislation at the time. Between 1890 and 1914 at least 35 worker co-operatives were formed in all states except Tasmania, with boot making being the most prominent industry (Patmore et al., 2024a). Notably, there were three worker co-operatives operating in WA during this time.

A major step forward for the co-operative sector in WA was the passing of the *Co-operative and Provident Societies Act 1903* (WA). This legislation provided a dedicated legislative framework for WA co-operatives (Baskerville, 2019). It was also one of the first statutes of this kind introduced within the British Empire, outside of the UK, and set out guidelines for the design, governance, operation, purpose, and regulation of co-operatives. For example, it established the State Registrar of Co-operative and Provident Societies to oversee the co-operatives, specified a minimum of seven active members, and required the inclusion of the words “Society Limited” to be placed at the end of the company’s name (Baskerville, 2019). However, during the First World War interest in co-operatives waned in WA (Patmore et al., 2024a). It later peaked in 1922 with nine active worker co-operatives in the state.

An early example of a WA worker co-operative was the South-West Timber Hewers’ Co-operative Society, formed in 1905. The State Government loaned the co-operative funds to procure land, approximately 17,000 to 18,000 acres (6,879.7 to 7,284.2 hectares) at Lucknow in Collie, and rail materials for the transportation of timber (Southern Times, 1907; The Bulletin, 1910; Patmore et al., 2024a). The Co-operative, initiated and managed by Herbert T. Jackman, was involved in the jarrah industry, “turning out large quantities of hewn timber (chiefly railway sleepers)” (Southern Times, 1907, p. 2; The Bulletin, 1910). One of their communities was named Holyoake, after the UK co-operator, located near Dwellingup (Patmore et al., 2024a). In 1907 there were approximately 450 members with a £10 share. By 1910, there were about 300 members, and their shares were considered to be “easily disposed of at £20 now” (Southern Times, 1907; The Bulletin, 1910, p. 8). It later was bought by the State Government in 1920, with its registration cancelled in 1922 (Patmore et al., 2024a).

Another early WA worker co-operative was the Co-operative Coal Mine, formed in 1904 also in Collie (Coolgardie Miner, 1904). In the late nineteenth century across Australia, unionism expanded from skilled trades to mining, transportation, and factory workers, among others (Patmore et al., 2024b). At the same time, due to a large amount of trade disputes over conditions and wages, worker co-operatives were forming. By the time of Australian Federation in 1901, strikes were occurring frequently in Collie between unions, the State government, the local shire, and management of coal companies (Patmore et al., 2024b).

The Co-operative Coal Mine was formed by twenty miners who came together after a strike and were seeking a loan to open a new mine which was considered of better quality and likely higher output than existing mines in the area (Coolgardie Miner, 1904). However, during its time, the Co-operative faced considerable issues of coal quality and output, with complaints from the locomotive industry and agricultural farmers (Kalgoorlie Miner, 1918; The West Australian, 1934).

A further early example in WA was in 1919, following a painters’ strike, when the WA Workers’ Co-operative Society was established (Westralian Worker, 1920; Patmore et al., 2024a). The strike was protracted, and the unemployed workers formed the Painters’ Co-operative Society Ltd, which provided work and contributions to the ongoing strike funds, which later expanded to involve more building and contracting trades (Westralian Worker, 1920).

By 1920 the Painters' Co-operative Society was able to not only pay dividends to members but also form a benefit fund and a reserve fund (Westralian Worker, 1920). However, despite the company's balance sheet of January 1921 being announced by the firm's treasurer as being "most encouraging," the Co-operative voluntarily liquidated in 1923 due to the post-war recession (The West Australian, 1921, p. 6; 1923; Patmore et al., 2024a).

According to Patmore et al. (2024a) there was a heightened interest in co-operatives in Australia from the 1970s with co-operative community settlements seeking to promote an alternative lifestyle, and more specifically worker co-operatives due to encouragement by NSW and Victorian Labor governments to preserve jobs. However, these efforts collapsed due to a lack of ongoing support (Balnave & Patmore, 2017). Worker co-operatives during this period peaked in the late 1980s (Patmore et al., 2024a).

Renewed interest in worker co-operatives emerged following the Global Financial Crisis (GFC) of 2008, and the United Nations (UN) International Year of Co-operatives (UN ICY) in 2012 (Patmore et al., 2024a). The number of worker co-operatives in Australia grew from eight to 22 over the period from 2009 to 2023. Which has been attributed to greater awareness of co-operatives and workers' control and ownership over them, which was promoted by the establishment in 2013 of the Business Council of Co-operatives and Mutuals (BCCM) (formerly Social Business Australia). The BCCM serves as the peak national body representing the co-operative and mutual enterprise (CME) sector, lobbying for federal funding, legislative reform, and enhanced education and awareness of the sector (Patmore et al., 2024a).

Over the period from 1827 to 2023 a total of 124 worker co-operatives have been identified as having been established in Australia, with the average lifespan of these companies being 8.58 years. The reasons for the comparatively short lifecycle of these worker co-operatives in Australia, compared to other types of co-operatives and international worker co-operatives has been attributed to several factors. First, most were undercapitalised. Second, many were found to be demutualised in order to unlock the share capital for the benefit of the members, specifically those seeking to retire or leave the co-operative. Third, there was a tendency for their formation to occur due to both existing financial problems in an IOF and during worker industrial action often relating to high unemployment and poor working conditions caused by the IOF having financial problems (Patmore et al., 2024a).

CHAPTER 2: EMERGENCE OF GALACTIC: 2014-2017

GALACTIC SCIENTIFIC

In 2014, Andrea Biondo created the sole trader organisation Galactic Scientific, which repaired and serviced scientific equipment



in laboratories throughout Perth, WA. Biondo had a background in telecommunications, information communications technology (ICT), engineering, and laboratory consulting. He was also engaged in lecturing at a university in physics and conducting training and assessment work. Andrea holds a Bachelor of Science with a double major in physics and chemistry.

Over time Galactic Scientific needed employees to meet demand. As the number of employees increased, Biondo looked at the various options for running a company other than an IOF. As Andrea explained,

“As a sole trader it quickly became apparent to me that although I was far more agile than the dinosaurs of the industry, a larger organisation was required to bring larger ideas to fruition. Hence the incubation of Galactic Co-operative (WA) Ltd ... Beginning as a sole trader ‘Galactic Scientific’ converted to a Co-operative. It was important to me to have a flat structure with everyone taking responsibility for the success of the business.” (McMullen, 2017).

The social critic and professor of linguistics and politics Noam Chomsky had a significant bearing on Biondo’s thought process. Indeed, major themes in his work include power, control, and democratic threats. One aspect which resonated with Biondo was Chomsky’s notion that unrestricted private power, particularly corporate dominance and neoliberal policies, undermines democratic processes and institutions while contributing to global instability.

Informed by this perspective, Stoic philosophy, and further research into American co-operatives, Biondo developed a model of economic output that focused on challenging the unrestricted use of private power and climate change. Indeed, he argued,

“Profits that drive climate change and weapons manufacture evaporate when the individuals benefiting from such investments are held accountable for their impacts” (Galactic, 2024d, p. 3).

Moreover, Biondo pursued the co-operative model, in his view, in order,

“... to break down barriers, eliminate inequality, and ensure the rewards and risks of shared capital are fairly distributed” (Galactic, 2024d, p. 3).

After considerable investigation, he discussed with his wife and future business partner, Kate Biondo, about bringing five people together to create a worker co-operative.

Figure 2: Andrea Biondo and Kate Biondo in 2022



Source: Galactic (2022)

Kate Biondo's previous career was in the landscape industry, including running her own business, Gecko Blue Landscape Design. She also had experience in ceramics and Montessori Schools. Her approach to business was influenced by works such as Peter Barnes' *Reflections of a Socialist Entrepreneur* (1983), in which he argues democratic, non-capitalist philosophical values could be embodied in a business which operates within the capitalist system. However, this is provided that ownership is tied to labour, as Barnes states that people feel more positive about their work when they own and control their workplace.

Moreover, Barnes stipulates a set of values that guide his concept of democratic socialism, including:

"Privilege is generally a bad thing; economic activity should be based on something more than the maximisation of return on capital; and the workplace, where most people spend a third of their waking hours, should blend democracy with efficiency" (Barnes, 1983, p. 1-2).

By employing these values and tying ownership to the workplace, he argues that owners can experience direct responsibility and managers experience direct accountability.

Considering their respective ideological influences and values, it should come as no surprise that they place an emphasis on sustainability and cooperativism, which they bring to Galactic. Andrea reflected on that time saying,

“The reason why we went to a co-operative structure was because we had all of a sudden lot of people running around the place and all of those people weren’t me and therefore needed to be engaged in what they were doing. I needed a structure that would provide that engagement by default, without having to employ lots of managing consultants and various external parties to try and convince people to turn up to work and do good things. I wanted the business structure that had that baked into its structure. And I also wanted the business structure that was going to very rapidly make me redundant.” (A. Biondo, 2024).

Once Andrea and Kate Biondo settled on the co-operative model, the pair met with Peter Wells, Secretary of The Co-operative Federation of Western Australia Inc. (Co-ops WA), who provided beneficial information and guidance on the necessities for setting up a worker co-operative in WA, including the model rules. According to Andrea,

“Couldn’t have done it without Peter Wells. He really got us off the ground facing the right direction [...] he was essential in getting a lot of things right, right from the get-go, and everybody else that we’ve met since who is involved in the co-operative movement have all been very helpful.” (A. Biondo, 2024).

Co-ops WA is a membership-based peak sector body for co-operatives in WA. Founded in 1919, it has been a significant facilitator and catalyst in helping to build and sustain the co-operative sector of the State. It provides networking, education and training, advice, and formation services for the sector, as well as advocacy on co-operative issues for the State Government and the State Registrar of Co-operatives (Co-ops WA, 2025). The work Co-ops WA does includes assisting with understanding the structure and governance of co-operatives, providing guidance on lodging applications for registration, and preparing and facilitating formation meetings.

According to Thompson (2015) co-operative federations, which he calls “inter-cooperative associations”, can alleviate the burden of cooperation while aiding in resisting institutional biases and structural and cultural obstacles for co-operative enterprises. Moreover, they provide a “common cultural environment” which aids in the development of deep-level cooperation (p. 10). Altman (2010) explains how establishing a co-operative can be difficult and costly. However, this can be mitigated through regional and national co-operative federations such as Co-ops WA.

In addition, Galactic received support from Nerrida Mills, a facilitator for developing small business plans. Over weekends, she and the Co-operative would work together to discern what the values of Galactic were going to be as well as horizon strategic planning (K. Biondo, 2024).

In April 2015 Caleb Tang joined the Co-operative as a Field Engineer after having met Andrea Biondo through previous employment (Tang, n.d.). Tang has a background in laboratories and in mechanical engineering. He completed his bachelor’s in mechanical engineering in 2012 at the University of Western Australia (Tang, n.d.). While employed at Galactic Scientific, he conducted a master’s in electrical power engineering from 2015 to 2017 at Edith Cowan University (Tang, n.d.).

Figure 3: Bryn Pitman and Caleb Tang, previous Governing Fellows



Sources: Kate Biondo (2017); Svelto Bikes (2017).

Additionally, a long-term friend of Kate and Andrea Biondo, Bryn Pitman joined Galactic in January 2016. His role was to head up the Galactic ICT business (K. Biondo, 2024). Bryn had past experience working in the ICT industry and had become disillusioned with the structure of the majority of IOFs he had encountered. According to Kate Biondo,

“Bryn was very engaged when we first set up and he took it on” (K. Biondo, 2024).

A long-time friend of Kate Biondo, Dr Kate Ringvall also joined Galactic in 2017. Dr Ringvall has a master’s in public policy, and a PhD in planning. Her employment background includes recycling processing, circular economy development, sustainability in business and branding, and sustainable urban planning, including cities, transport, and energy efficiency (Ringvall, n.d.). In addition to co-founding the Galactic Co-operative, Dr Ringvall has worked in government, large corporations, and at time of writing was also working at Curtin University in their Sustainability Policy Unit as a Research Fellow in the Circular Economy (Ringvall, n.d.).

Experiences with the corporate business model had left her feeling disgruntled and disappointed (Dr K. Ringvall, 2024). These feelings were not unique, as Andrea Biondo explained,

“We were working in different places, corporate environment, university environment, public service, etc. We always ended up pretty disappointed in the quality of leadership and the quality of working environments” (A. Biondo, 2024).



Figure 4: Dr Kate Ringvall, Governing Fellow



Source: Galactic (2022).

However, the early years of Ringvall’s involvement in Galactic were difficult, as she had to move interstate for additional work. According to Kate Biondo and Dr Ringvall,

Biondo: “It was just circumstances. Kate had to go for work over to Canberra—or she went to Sydney first and then to Canberra—and having her at such a distance. Even though I think we did a really good job of keeping connected via Google Meet and Zoom or whatever. It was hard.”

Dr Ringvall: “Yeah it was. Completely agree. It was hard being isolated. [...] There was no work here. There was nothing in in the Co-operative that could have sustained me to work. My sustainability stuff, it would never have got up and running eight years ago. Not a chance in hell.” (K. Biondo & Dr K. Ringvall, 2024).

Notably, the shift from sole trader to co-operative was smooth in regard to employees. From the beginning as Galactic Scientific, the enterprise regularly employed new people, and those under the sole trader business easily transitioned to the Co-operative in 2017. At the time Andrea Biondo summarised the process thus,



"We researched co-operatives extensively while being a sole trader and operated essentially as a co-operative to many degrees before officially becoming a co-op. This made the transition smooth, and everyone has slid into their roles very well." (McMullen, 2017).

Furthermore, the shift to a co-operative model did not result in a loss of customers. According to Andrea and Kate Biondo, this is due to a local network mindset.

Andrea: "There's a real desire to smooth any waters amongst our customers. So, if there are any internal difficulties with the fact that we're a co-operative, our customers—the people that we deal with, who are usually the lab managers—fight tooth and nail to get us on the books. Because the alternatives are the multinational service providers who are hideously expensive and notoriously disinterested in service, shall we say. I mean, they're very interested in sales, but they're really disinterested in service."

Kate: "People would ask. I seem to recall that they would notice on the invoice that it's changed. And they will say, what's a co-op?"

Andrea: "Yeah, that sort of strengthened their connection to a lot of the guys in the labs. They really saw that what we were doing made good business sense but also was a good social impact business model."

Kate: "We've had a few people who we've got along really well with within the laboratories and then they might move jobs. And so, they'll move to a different laboratory and then they will get us working in that laboratory because they've moved." (A. & K. Biondo, 2024).

CO-OPERATIVE FORMATION, 2017

In 2017 the Co-operative was formed as a distributing worker co-operative under the name Galactic Co-operative (WA) Ltd. The foundations and model rules were signed in January at the Co-operatives WA offices in South Perth. The five signatories listed as Directors, known within the Co-operative as Governing Fellows, were Andrea Biondo, Kate Biondo, Bryn Pittman, Dr Kate Ringvall, and Caleb Tang.

Andrea Biondo was the Co-operative's Chair and Lead Physicist, Kate Biondo the CEO, Secretary, and Business Co-ordinator, Bryn Pittman was the Treasurer and Head of Galactic ICT, Caleb Tang was the Engineer, and Dr Kate Ringvall was the Sustainability Solutionary (2025a). The co-founders stated they aimed to do,

"... business with integrity, purpose, compassion, and most importantly with the planet in mind. They also wanted to be able to make the decisions and make them together as equals" (Galactic, 2024e).

With Galactic's formation, the Co-operative was registered under the *Co-operatives Act 2009* (WA), a legislative framework for the formation, registration and management of co-operatives. Its aims also include the promotion of the co-operative philosophy, principles, practices and objectives; to protect the interests of co-operatives and their members; to ensure the Directors of co-operatives are accountable for their actions and decisions; and to encourage the development and strengthening of co-operatives at local, regional, national, and international levels by supporting and fostering state and national peak organisations.



For both distributing and non-distributing co-operatives, to be registered, the Act requires five or more active members. Andrea Biondo disagrees with this requirement, stating,

“I believe the legislation is flawed because it insists that there must be five members at the formation of a co-operative. Which in our case it kind of forced us to start the co-operative with members that maybe weren’t ideal. Most of the members that were there at the formation are still with us. But there would have been some there that would have been better if they weren’t. You know, it took a while to work that kink out of the system, as it were. We would have been better off starting with three or four members and the government’s insistence that there must be five members, I cannot for the life of me see any good reason for it other than it’s just an obstacle that is making it harder for this good business model to get off the ground more rapidly for more people.” (A. Biondo, 2024).

Influenced by the UK legislation, early WA legislation required seven active members. Having five directors of the board arguably allows for a quorum on decision making, particularly when there isn’t full attendance to a meeting. For example, if there are three directors and only two attend a meeting, that meeting arguably no longer has the capacity to conduct adequate decision-making. In addition, fewer than five could result in lower levels of collegiality, issues of personalities, and little drive for growth. Moreover, it calls into question whether the enterprise fully reflects the co-operative principles, that is, a collective approach you cannot achieve on your own. However, the experiences of Galactic in their pursuit of meeting the requirement of five directors—rather than achieving the most suitable people for the position—is an important element to the history of co-operative governance and reflects similar issues by other co-operatives.

At this time, the five Directors agreed to go without pay at times to ensure the continuation of the Co-operative (K. Biondo, 2024). Although in 2017 Galactic aimed to have a \$70,000 per annum income per person plus any surplus or pro rata, in reality the Co-operative struggled for some time to have sufficient funds to run it and pay wages to its workers (Galactic, 2017). This reflects the general history of worker co-operatives in which pay is often reduced or briefly suspended to retain jobs and ensure the survival of the co-operative (Balnave & Patmore, 2017).

Galactic’s first Annual Report in June 2017, after seven months of operating as a co-operative, listed four employees and two interns, in addition to its five Directors. It aimed to maintain its five members with the goal of fostering more, with Andrea Biondo indicating the Co-operative hoped to have ten members by 2019 (Galactic, 2017; McMullen 2017).

The Annual Report also listed companies that they planned to work more with, in addition to noting a development in the Helium Leak detection market. The latter is an area of expertise which Galactic Scientific, as a subsidiary of the Co-operative, continues to provide services for to this day (Galactic, 2024b).

At this time, Galactic’s purpose was stated as,

“Providing and supporting a long term, sustainable livelihood for all members. Making possible the creation of a fair and equitable working space. In the pursuit of the betterment of humanity” (Galactic, 2017, p. 3).



The Co-operative's first Annual General Meeting (AGM) was held on 8 November 2017. Galactic's office was originally located on Niagara Cove in Bentley, including their subsidiaries Galactic Scientific, Galactic ICT, and Svelto Bikes, which allowed the Co-operative to foster a good relationship with the Victoria Park community (Galactic, 2017b).

However, the Co-operative's beginning was not necessarily smooth. Logistical issues quickly became apparent as they began setting up bank accounts, ABNs, car registrations, and more. Galactic had to spend a considerable amount of time explaining to various institutions exactly what a co-operative was. There was no box to tick for co-operatives. According to Dr Ringvall,

"Nobody really understood what co-operatives were. And then nobody knew what a worker owned co-operative was" (Dr Ringvall, 2024).

Banks in particular were and continue to be difficult, including mutual banks, as the people working there "don't understand the co-operative model" (A. Biondo, 2024). This makes lending complicated, despite the credit risk being "negligible to nil" (A. Biondo, 2024). These experiences reflect the broader co-operative literature, as worker co-operatives often have a difficult time getting funding due to financial institutions tending to lend more generously to non-co-operative enterprise because they have a better understanding of them (Gupta, 2014; Bastida et al., 2022).

In December 2017, Caleb Tang resigned from the Co-operative (Tang, n.d.). According to the Membership Registry and Annual Reports for 2017 and 2018, he is listed as resigning on 6 and 11 June 2018 respectively (Galactic, 2017a; 2018; 2025a). However, he was not present at the December 2017 meeting nor listed as an "apology" (Galactic, 2017c). Since 2018, he has worked in the mining sector as a mechanical engineer for BG&E Resources (Tang, n.d.).

The Board minutes for December 2017 note the need for research and implementation of a mental health and stress program. At the same time, they note interest by Stephanie Black to join the Galactic in an administrative capacity to systemise it (Galactic, 2017c).

SUBSIDIARIES

GALACTIC ICT

Galactic ICT was registered by Andrea Biondo as a sole trader business in March 2014 for the purpose of small business communications and computer needs (Galactic ICT, n.d.; Biondo, 2017). This subsidiary was headed by Bryn Pitman due to his background in telecommunications and ICT services. According to the 2018 Annual Report, the Co-operative divested Galactic ICT that year. This is likely due to Bryn Pitman resigning from the Co-operative on 11 April that year (Galactic, 2025a). It ultimately wound up its registrations in 2019 (Galactic ICT, n.d.).

GALACTIC SCIENTIFIC

No longer a sole-trader business, within the Co-operative, Galactic Scientific primarily conducts maintenance services for technical machinery. This includes laboratories, such as Geochem, pathology, university, and agricultural labs, mine sites, radio stations, hospitals, and more (Galactic, 2024e). According to Kate Biondo, maintenance services is a cycle, as some labs boom while others falter, thus there is never a lack of work.



As a part of the service and maintenance of machines to ensure longevity, Galactic 3D prints parts that are difficult or expensive to attain. Prior to this, Andrea Biondo found machines that were otherwise in good condition were being thrown away due to a single part no longer working. As 3D printing became more accessible and affordable, Galactic developed their first sustainable business solution (Galactic, 2024e).

In addition to providing services to laboratories, Galactic Scientific deploys off-grid bird waterers, which began in 2022, demonstrating their “commitment to sustainability and harmony with nature.” (Galactic, 2023a). This has expanded in 2023 and 2024, with more bird waterers and cameras deployed by member Fiona Darcey (Galactic, 2024d).

SVELTO BIKES

According to the Annual Report and Svelto Bikes Strategic Marketing Considerations Report, the Co-operative was managing a venture as a part of the purview of an intern then employee, Benjamin Starling in 2014 (Galactic, 2017; Svelto Bikes, 2018a).



According to Andrea Biondo, the development of the idea behind Svelto began with how they approach all their new interns and employees,

“We ask people, what do you like doing? What's your passion?” (A. Biondo, 2024).

In response, Starling emphasised the issue of commuting. As Andrea describes,

“Commuting is a big problem. Nobody likes doing it and it burns fuel and all the rest of it. And so, we sat down and had a think about it, and I said, okay, well, how about you design the ideal way of getting commuters about?” (A. Biondo, 2024).

As a result, Starling designed an electric bicycle. According to Andrea and Kate Biondo, this was at a time when electric bikes were rare, “a fringe activity,” and unaffordable (A. & K. Biondo, 2024). Later, the project was continued by Claye Jensen, who began working for the Co-operative (then sole trader) in 2015, employed within Svelto Bikes as the Lead Engineer until 2018 (Jensen, n.d.).

The Galactic team built a commuter bike prototype which was comfortable to ride and could go enough distance to get someone to and from work. The first Svelto design developed in 2015, the “Batman”, was black and was quickly followed by “Tiffany” a blue design. The first bike was sold in June 2015 (Svelto Bikes, 2018a). The colours continued to evolve, with custom options for clients. By 2018, twelve had been sold to four individual buyers and an additional eight bikes to the Town of Victoria Park as a corporate fleet (Svelto Bikes, 2018a). All staff contributed to the project in various ways, including administrative, engineering, and attending events.

Figure 5: Several team-members of Svelto Bikes in 2017



Left to right: Claye Jensen, Andrea Biondo, Kate Biondo, Caleb Tang, and Dr Kate Ringvall.
Source: Svelto Bikes (2017).

The December 2017 Board minutes indicate that Kat Sherwin was interested in joining the Co-operative as a part of Svelto Bikes (Galactic, 2017c). By February 2018, she became an employee of Galactic, listed as a “Pretengineer” of Galactic Scientific and “Systems Facilitator” and Svelto Bikes “Champion” (Galactic, 2018a). According to the Membership Registry, Sherwin became a member of Galactic Co-operative on 26 September 2018 (Galactic, 2025a).

Kate Biondo and Dr Ringvall recalled of her time at the Co-operative,

Kate Biondo: “Kat was very interested in in the governance side of things and certainly for me it was great. I worked really well with Kat.”

Dr Ringvall: “And she understood the concept of co-operatives and why you would have them, whereas the others, I don’t think they really got it, in the same way.” (K. Biondo & Dr K. Ringvall, 2024).

Sherwin is considered an avid cyclist and passionate about bikes, engaging with issue of cycling in the local community. In 2018 she was nominated for the Your Move Award representing Svelto Bikes for her efforts, earning the Co-operative a Silver accreditation (Galactic, n.d.; Svelto Bikes, 2018b).

Figure 6: Team Svelto in the Galactic offices



Left to right: Aileen Swarbrick, Kat Sherwin, and Kate Biondo.
Source: Svelto Bikes (2018)

A part of the Government of Western Australia's Department of Transport, Your Move is a program, working with schools, organisations, and individuals, to provide information and support for healthier, more active ways to get around (Your Move, n.d.). The program provides the opportunity for people to earn points based on activities which improve organisational and community-based travel. These points translate to the annual award.

According to the Award blurb, after joining the Co-operative, Sherwin improved end of trip facilities in the workplace, established rewards for staff using sustainable travel via bikes or public transport, expanded the workplace bike fleet, updated the Healthy Workplace policy at the Co-operative to include Your Move initiatives, encouraged workplace team rides, including around local community parks like Tomato Lake in Kewdale, and communicated active travel messages through a fortnightly newsletter (Sherwin, 2018; Svelto Bikes, 2018b).

In 2018 the look of the bikes changed with a new custom wood finish. According to Svelto,

"Each panel on our bikes is cut from local or recycled timber and then hand-finished to ensure a snug, pleasing fit to the bicycle frame. The hand-finishing takes up to two hours per panel" (Svelto Bikes, 2018b).

Figure 7: Kat Sherwin, previous Governing Fellow, and a Svelto Bike



Source: Svelto Bikes (2018; 2019a)

In addition to custom built bikes for clients, Svelto built a small fleet for the Victoria Park local government. Unfortunately, however, the bikes were regularly stolen from the local government.

Svelto Bikes wound down in 2019 (Svelto Bikes, 2019b). According to the Governing Fellows, Svelto Bikes struggled to capture the market, ultimately not selling many, and the Co-operative could not continue to fund it while not generating a surplus. Kate Biondo believed it was a good learning experience. However, they were too ahead of the market for electric bikes, despite eBike popularity post-2020. Indeed, according to Andrea,

"We were too early to market because electric bikes were still seen as something that you rode when you couldn't ride a proper bike anymore because you're too old. And that was very much the market research that we were getting [...] And then Bosch and Atala came into the market and completely flooded it. [...] It was an interesting learning experience from a technical perspective, from a marketing perspective, and just from learning to understand the risks that are out there when you take on something that's completely new. In an environment that is evolving rapidly. Unexpected things can happen, and they did. It was unexpected that so many big players suddenly entered the market." (A. Biondo, 2024).

Adam Binks agreed, stating,

"We couldn't hit that market that we're trying to hit, basically, we didn't have the economies of scale. That market now is probably being serviced by the electronic scooters" (A. Binks, 2024).

Galactic continued to sell parts from Svelto Bikes up until 2021 (Galactic, 2021a). Despite their struggles, the Co-operative believe it ultimately had a worthwhile impact,



"We got some people out of their cars. Local government authorities reduced the size of their car fleet because they had electric bikes. We definitely made a positive impact in the process"
(A. Biondo, 2024).



CHAPTER 3: BUILDING INNOVATIONS: 2018-2020

According to the Co-operatives' 2018 Annual Report, Galactic's purpose statement changed to the following,

"As the Galactic Co-operative, it is our purpose to be innovative, inspiring, and tenacious, demonstrating that we can do better. Galactic Co-operative – An inspired future" (Galactic, 2018b).

During this period, the issue of sustainability became a goal for the Co-operative. According to Preluca et al. (2022), sustainability refers to the achievement of long-term social, environmental, and economic goals. Although they didn't have the capacity to pursue the developing ideas of Dr Ringvall, Galactic listed sustainability aims. For example, they displayed their total Carbon Footprint in the office and on their public Facebook page (now unpublished) (Galactic, 2018b). In addition, they ran biannual paid volunteer days to support the local community.

In January 2018 Aileen Swarbrick joined the Co-operative as an administrator. According to the February 2018 Board minutes, her primary responsibilities also included social media and Svelto Bikes, and she quickly began providing support for risk management (Galactic, 2018a).

Figure 8: Aileen Swarbrick



Source: Galactic (2022)

The June Board minutes noted that Swarbrick would be eligible for membership by the end of the next month as she had worked for Galactic for six months (Galactic, 2018d). However, she did not become a member. Swarbrick left the Co-operative later in 2018. She was not recorded in the company's October 2018 board minutes as attending the board meeting, nor as an apology (Galactic 2018f). However, Swarbrick rejoined Galactic in 2022.

Figure 9: Stephanie Black with Andrea and Kate Biondo



Source: Galactic (2020).

According to the Co-operative's Membership Registry, in April 2018 Stephanie Black became an employee (Galactic, 2025b). However, she was listed as an employee as early as the February 2018 Board minutes (Galactic, 2018a). On 29 October 2019 she was formally registered as a member (Galactic, 2025b). Her responsibilities included governance, policies and procedures, environmental accounting, and occupational health and safety.

Black grew up in East Germany. Prior to joining the Co-operative, she had an extensive corporate career in the technology and resources sectors, including a position in geophysical data processing (Black, n.d.). Her education background includes several science degrees, including a PhD in Psychology in which she researched human performance in complex environments (Black, n.d.).

Stephanie first met Andrea and Kate Biondo at a Perth film screening about co-operatives. That night Andrea went on stage, expressing interest in people joining Galactic. After many years in corporate environments, Black was interested in alternative approaches. Indeed, in addition to supporting herself during her completion of a PhD, she joined Galactic because she believed it would be a meaningful endeavour. Moreover, the position at Galactic involved a health and safety component, which aligned with her interests.

While at Galactic, Black built quality management and health and safety management systems from scratch (Galactic, 2018d). According to the Co-operative's June 2018 Board minutes, the quality management system was described as follows,

Co-operative Enterprise Research Unit (CERU)

Galactic Co-operative Ltd: Working for a Scientific Solution since 2017



“documents processes, procedures, and responsibilities for achieving quality policies and objectives. Focused on consistently meeting customer requirements and enhancing their satisfaction” (Galactic, 2018d).

Additionally, when the Co-operative aimed to achieve International Organisation for Standardisation (ISO) certification, Black contributed to the achievement of the 9001 standard (Galactic, 2018d). This is one of the most widely implemented standards, defining seven principles for quality management and emphasising strong customer focus (ISO, 2015).

Furthermore, contributing to Galactic’s environmental focus, Black established carbon accounting within the Co-operative. For example, she analysed the impact of power consumption at the offices and business car travel waste (Galactic, 2018a). Through her work, Galactic began the process for environmental ISO certification, focusing on carbon footprint and waste. Black also developed a workplace mental health and well-being initiative. This Workplace and Wellbeing programme is discussed further in this case study.

The Co-operative was looking to expand. According to the Board minutes of June 2018, Galactic was in negotiations with Ross Scarfone Real Estate for a premises located at Unit 1, 113 President Street in Welshpool (Galactic, 2018d). By August that year, the company moved to Welshpool where they were located at time of writing (Galactic, 2018e). According to the chairperson’s report in the Co-operative’s 2019 Annual Report,

“It placed an interesting strain on our relationships and our business and allowed us to demonstrate amazing fortitude. I am thankful for the help we had from each other and several of our friends” (Galactic, 2019a, p. 6).

The August 2018 Board minutes note the issue of pay equity. A discussion occurred about pay increases, with the hope of it occurring in December. Moreover, the Co-operative began developing the concept of “sweat equity” as an integral part of their membership, and likely employee, affordability (Galactic, 2018e). According to Rutherford (2013), sweat equity broadly refers to assets in an enterprise created by the labour of owners. Galactic’s definition of sweat equity was refined in their 2024 Membership Policy, discussed further in the study. These board minutes also show that it was decided that the membership joining share would be at \$4,000 divided between salary sacrifice and sweat equity at an hourly rate over a 12-month period (Galactic, 2018e).

In October 2018, Galactic outlined their purchase of Galactic Scientific, which was approved at the September 2018 AGM, in which a loan of \$70,000 was made to fund it (Galactic 2018b; 2018f). The Governing Fellows agreed to pay \$250 per week to Andrea Biondo, without incurring interest, until it was paid in full (Galactic, 2018f).

With the resignation of Bryn Pitman, there was now need for a new Treasurer at the Co-operative. The April 2018 Board minutes note that Adam Binks, accountant and long-time friend of Andrea Biondo, had nominated himself to join the Co-operative (Galactic, 2018c). This was due to his long-standing involvement and considerable support to Galactic since its establishment. He attended the formation meeting on January 11 and continued to attend many meetings as a guest and formal advisor.

Figure 10: Adam Binks, Governing Fellow and CFO



Source: Galactic (2022)

According to Binks, he provided accounting services to the Co-operative from its inception. In December 2018 Binks officially joined Galactic Co-operative as the Treasurer (Galactic, 2018g). At the August 2019 AGM he was elected as a Governing Fellow (Galactic, 2019a).

Binks has known Andrea Biondo since 1987, when they were technician apprentices at a telecommunications company (Galactic, 2025b). His background includes a Bachelor of Business and Chartered Accountant certificate, as well as in industries of telecommunications, which he worked for over ten years, and accounting, including running his own accounting business for the past fifteen years as a Tax Agent (Binks, n.d.; Galactic, 2025b). Prior to Galactic, Binks had no experience with co-operatives but found it worthwhile understanding the co-operative business structure and approach. Adam Binks and Kat Sherwin became Governing Fellows on 5 September 2019 (Galactic, 2025a).

Brad Hayden joined Galactic as a member in 2019 after joining as an employee in June 2018 (Galactic, 2018d; 2025a). In 2019, the Co-operative began a new sustainability program, Galactic Sealed PC. The development of the product is explained later in this case study. From the beginning of 2019 to June that year, Galactic surveyed their customers, placing the results on SurveyMonkey, and receiving positive feedback (Galactic, 2019b; 2019c). Hayden in particular played a crucial part in contacting clients for feedback (Galactic, 2019c). They discussed this again in October 2019, with the aim of surveying customers every six months, with high volume and low volume customers targeted differently (Galactic, 2019e). This project was headed by Black.

Table 1: Galactic Co-operative Financial Performance 2020-2024

Year	Annual Turnover	EBIT ³	NPAT ⁴	Total Assets	Total Liabilities	Total Equity
	\$	\$	\$	\$	\$	\$
2017	57,277	26,024	26,024	44,531	18,507	26,024
2018	419,470	276,783	3,467	124,790	142,412	17,623
2019	323,738	281,954	16,737	68,144	103,499	35,355

Sources: Galactic Annual Reports, 2017 to 2019.

In 2019, the Co-operative discussed moving away from Windows software due to security risks, preferring to use Linux instead. This shift occurred over several months from June to November 2019 (Galactic 2019c; 2019e).

Concerns over cash flow impacted the Co-operative considerably. By the time Binks joined in December 2018, these concerns were noted in the company Board minutes (Galactic, 2018g). In August 2019 they were once again discussed, specifically about owing the Australian Taxation Office (ATO) approximately \$22,000 (Galactic, 2019d). A repayment scheme was developed of monthly payments of \$1,000 to \$1,500 to the ATO. In October that year, the Board minutes noted a “slight slide down and worrying figures” (Galactic, 2019e). Moreover, the combined amount owing to the ATO increased to \$32,000 with the aim to conduct \$1,500 monthly repayments. The financial stress continued into 2020; indeed, the 2019 Chairperson’s report noted Andrea Biondo experienced “Fanxiety”, that is, “anxiety over financial matters” (Galactic, 2019a, p. 7).

COVID-19 IMPACT, 2020

In December 2019 the COVID-19 pandemic broke out in Wuhan, China, spreading globally by early 2020. The first case of COVID-19 came to WA on 21 February 2020; by March the World Health Organisation (WHO) had declared it was a global pandemic (McNeill, 2020). On 15 March 2020, the WA State Premier Mark McGowan declared a state of emergency which was soon followed by travel restrictions, with the banning of gatherings larger than 500 people, the banning of indoor gatherings of over 100 people, and a mandatory 14-day isolation requirement for people arriving from overseas. By 1 April 2020, regional border restrictions were put in place restricting travel to essential services only (McNeill, 2020).

The pandemic and its associated lockdowns and travel restrictions had considerable impact on many businesses. According to Roloff (2023) small and medium enterprises (SMEs) in particular needed to adjust, finding new ways to interact with suppliers, customers, and employees. Further, Miocevic and Srhoj (2023) suggest that compared to other, primarily economic, crises, health crises like the COVID-19 pandemic involve a higher degree of uncertainty, which effects the economic ecosystem and paralyses business activities. In the case of COVID-19, uncertainty

³ EBIT: Earnings before interest and tax.

⁴ NPAT: Net profit after tax.

resulted in the slowdown and disruption of global supply chains, such as the reduction in inflow of products and raw materials (Miocevic & Srhoj, 2023).

In February 2020, both Brad Hayden and Kat Sherwin resigned from the Co-operative (Galactic, 2020a). The March 2020 Board minutes note they were paid their membership funds, \$3,696 and \$4,000 respectively. However, a part payment of \$500 was paid to each in mid-June and the rest was paid in a scheduled manner (Galactic, 2020c). Galactic could not repay the amount in a single payment, as they were concerned it would adversely affect the Co-operative's financial position. The membership fees were ultimately paid off by mid-February 2021.

According to the 2020 Annual Report, due to their resignations, Christian Czarniak also decided to leave (Galactic, 2020a). The Chairman's report described it as a test of values and shared adversity (Galactic, 2020a). By the time of the 2020 Annual Report, Galactic had only four Governing Fellows, in addition to one member, Stephanie Black, and four non-member employees.

The Chair's report for 2020 described the emergence of COVID-19 as a difficulty and a "time of change for the Co-operative" (Galactic, 2020a, p. 9). However, Galactic made efficient efforts to adapt. Kate and Andrea Biondo recall of that time,

"Anybody who could work from home worked from home. Anybody who needed to come into the workshop came into the workshop. They just wore a mask. It was quite easy to keep separate" (K. Biondo, 2024).

"We were considered an essential service. A lot of our customers are pathology labs and hospital labs. The labs have to keep running, particularly during the middle of a pandemic" (A. Biondo, 2024).

The global supply chain faced immense challenges, and likely still has not recovered. However, the Co-operative was able to maintain a level of flexibility and resilience.

"We're really good improvisers. We are very good at finding the parts we need to keep instruments going. Bricolage is the term that somebody coined. [...] Being self-sufficient. Being a good improviser. Being in Perth, Perth's been isolated forever and was isolated before COVID came around. So, when COVID happened we already had the skills to cope with supply chain disruptions because we get supply problems all the time" (A. Biondo, 2024).

The resulting financial strain from COVID-19 in Australia meant that governments needed to devise measures to help SMEs in particular be resilient (Miocevic & Srhoj, 2023). Indeed, according to Miocevic and Srhoj (2023), wage subsidies were the most common policy to aid businesses during the pandemic and were found empirically to be critical in avoiding bankruptcy and loss of staff. Galactic's Treasurer's Report noted that in March 2020 the Co-operative's cash flow was "genuinely affected," however, this enabled them to qualify for the government's JobKeeper relief package (Galactic, 2020a, p. 9). Moreover, there was an adjustment to pay per hour for Adam Binks, Andrea Biondo, Kate Biondo, and Stephanie Black.

Figure 11: The Galactic Scientific workstation



Source: Galactic (2022).

The JobKeeper Payment was a COVID-19 support measure initiated by the ATO to support businesses significantly impacted by the pandemic (ATO, 2022). Introduced by the Federal Government of Prime Minister Scott Morrison in March 2020, the program was able to support 800,000 people retain employment at a cost of \$88.2 billion (Borland & Hunt, 2023; Clun, 2023). Moreover, it helped keep businesses afloat which were forced to close due to pandemic lockdowns (Ziffer, 2021).

According to an independent review of the scheme, “It played a critical role in addressing the extraordinary and unquantifiable uncertainty at the time” (Clun, 2023). In addition, it was considered “the most expensive of the suite of policies implemented by the Australian Government to deal with the pandemic” (Borland & Hunt, 2023, p. 109).

However, the independent review argued it had negative consequences due to its narrow recipient eligibility, including the exclusion of casual employees who had positions for less than a year as well as temporary migrants, among others (Clun, 2023). A further review stated,

“... because liberal eligibility criteria were associated with large outlays, the cost per job saved was relatively high; and the impact on the distribution of income was most likely regressive” (Borland & Hunt, 2023, p. 109).

The payment package wound up on 28 March 2021 (ATO, 2022; Borland & Hunt, 2023).

Figure 12: Nicole Binks and Ian Wilkins



Source: Galactic (2022).

Galactic's 2020 Financial Report stated that it had experienced a difficult year due to the write-off of a Helium Leak Detector in 2019. However, income had improved with the aid of the JobKeeper subsidies. The Co-operative made a surplus of \$29,000, with subsidies contributing \$24,000 of this (Galactic 2020a). In addition, throughout 2020, Galactic kept strictly to their ATO repayments, reducing the amount owed to \$21,000 in May and to \$11,230 in July (Galactic 2020a; Galactic, 2020d; Galactic 2020e). Indeed, with such a rapid repayment they were able to reduce the monthly amount from \$1,500 to \$1,200. The May and July 2020 Board minutes noted that the COVID-19 Pay as You Go (PAYG) instalments with the ATO provided the Co-operative with a much-needed cash flow boost (Galactic, 2020d; Galactic 2020e).

Due to the pandemic, Galactic gained Eastern States clients, including the Commonwealth Scientific and Industrial Research Organisation (CSIRO) Photon machines laser systems, Elementar, for servicing (Galactic, 2020a). The advent of these contracts, in addition to JobKeeper, helped Galactic survive this strenuous period.

During this time the Co-operative began discussing hiring Nicole Binks as a part-time bookkeeper. By July 2020 both Nicole Binks and Ian Wilkins joined the Co-operative, employed, in Nicole's case as a bookkeeper and in Ian's case, within Galactic Scientific, as a field service engineer (Wilkins, n.d.; Galactic, 2020). Nicole Binks has a Bachelor of Science in biomedical science and a master's in nursing science, with a background in neonatal nursing. She later shifted her career to bookkeeping and joined the Co-operative, stating that she enjoys its collaborative nature where,

"... everyone has their say in achieving our goals, bringing the best ideas together no matter whose idea it is, eliminating the hierarchy" (N. Binks, 2025).

TRADEMARKING AND VIRGIN GALACTIC

Virgin Galactic Holdings Inc., is a British American spaceflight company founded in 2004 by British entrepreneur Richard Branson. Its use of the tradename “Galactic” posed a potential threat to the Co-operative’s use of the name. In the Co-operative’s 2020 Annual Report, Andrea Biondo, in his Chair’s report, noted the emergence of Virgin Galactic, expressing his gratitude that the board of the Co-operative had the foresight to trademark the name “Galactic” beforehand (Galactic, 2020a).

The following year, the Annual Report described the trademark issue as “continuing” (Galactic, 2021a). In the Co-operative’s board minutes of February 2021, the company’s lawyer, Lara Gun from FP Rice, advised that the parties (Galactic and Virgin Galactic), could agree to suspend proceedings for six months to allow time for negotiations. She also recommended that Galactic should write a letter asserting its,

“... ability to defend the removal action as outlined and, if [Virgin] refuse, to file evidence and claim costs” (Galactic, 2021b, p. 2).

This was conditional on whether Galactic was successful when the ASIC Registrar of business names decided on the matter (Galactic, 2021b). In addition, Ms Gun advised the Co-operative to push back on Virgin’s refusal to pay costs of \$5,000, and to request a slightly lower sum of \$3,000 in consideration for providing a letter of consent (Galactic, 2021b). It is worth noting that SMEs, including small co-operatives, are often challenged with cash flow and risk issues. Thus, legal costs can be considerably prohibitive to the function of a co-operative.

In February 2022, the Co-operative was still awaiting a response from Virgin Galactic in addition to a the \$3,000 plus GST deposit (Galactic, 2022a). According to the company’s Annual Report, the Virgin Galactic issue ultimately went away with a,

“... mutually dissatisfactory outcome being agreed on by everyone” (Galactic, 2022b, p. 9).

DEVELOPMENT OF PRODUCTS AND SERVICES

A feature of Galactic’s operations has been their ability to develop a portfolio of products and services, via subsidiaries, which enable them to compete in targeted markets, and offer a point of differentiation.

GALACTIC WORKPLACE & WELLBEING

One of Stephanie Black’s major contributions to the Co-operative was the Workplace and Wellbeing program. This involved applying People at Work measures to the enterprise with a focus on cognitive demand. People at Work is an Australian psychological risk assessment survey that analyses some of the most common psychosocial hazards and factors (People at Work, n.d.). Established in 2007, the program helps organisations identify, assess, and control risks in the workplace. The original report, published in May 2016, included the issue of cognitive demand (People at Work, 2016). This is defined as,

“... the degree to which an individual must engage in cognitive monitoring and attentiveness in order to meet the demands of the role” (People at Work, 2016, p. 28).

The report found that this was the most prevalent demand, with 80 per cent of the overall sample reporting high levels. Galactic also found that cognitive demand was one of their highest issues. Thus, Black designed the program to improve conditions and streamline quality systems, including the creation of a nap room for people with sleep issues. After six months, Galactic reevaluated their health and well-being and found that conditions had improved. Furthermore, they were better than the benchmark on the majority of measures. In 2019, Stephanie Black won the WA Health and Safety Excellence Award in the category for Best Workplace Health and Wellbeing Initiative. The following year, she also won the Gold Healthy Workplace award (Galactic 2020a).

GALACTIC BROADCASTING

This subsidiary of the Co-operative originated with Galactic Scientific and has been a part of the enterprise since 2017. Galactic Broadcasting involves “testing and record keeping, part sourcing and upgrades, even uninstalling, refurbishing and reinstalling” (Galactic, 2025c). Their services include emergency and after hours call outs. According to Kate Biondo, Galactic Broadcasting is ad hoc in style, with clients often attracted through word of mouth in WA. Moreover, she describes it as “niche radio broadcasting” (K. Biondo, 2024).

In 2022 Galactic Broadcasting had considerable growth with the creation of a Kalgoorlie community radio station and the acquisition of a new customer in Wagin (Galactic, 2022b; Galactic, 2023a). This occurred again in 2023-2024 with the acquisition of the Metricup region’s community radio station as a client (Galactic, 2024d).

GALACTIC SUSTAINABILITY

Concerned with “being, keeping and encouraging sustainable practices”, Galactic Sustainability provides a variety of products and services to the WA community (Galactic, 2024c). Within the purview of sustainability, the Co-operative sells the Sealed PC to increase longevity of equipment in laboratory environments and provides training, advice, and consultation services on sustainability to SMEs.

Sealed PC

Sealed PC began through the collaboration with Andrea Biondo and intern Claye Jensen, with the latter interested in 3D Printing. At that time this technology was still relatively new. A discussion began among the Co-operative staff about issues of corrosive atmospheres in laboratories. According to Kate Biondo, computers used for most of the necessary machinery in highly acidic environments, like those found in Geochem laboratories, would last as little as three to nine months due to degradation of the metal parts inside the machines (Galactic, 2024e). According to Andrea Biondo,

“All of our customers—the larger labs—they would have contracts with HP and Dell to basically deliver a truckload of computers once every six months and take away a pallet load of rusty old computers to go to landfill. And that was just business as usual. That was seen as acceptable and sustainable somehow. The labs were crying in pain at this because every time a computer went down, it was downtime. And these labs need to be up all the time. Some of them run 24/7. We like to listen to our customers screaming in pain and come up with solutions to silence that screaming” (A. Biondo, 2024).

Figure 13: Galactic Co-operative's Sealed PC



Source: Galactic (2022).

Market research began on the project in February 2019 and by June Andrea Biondo and Claye Jensen had developed a working model ready for sale (Galactic, 2019a; Galactic, 2019c). They designed an enclosure with no metal components on the outside that would also keep out the corrosive environment while ensuring the needed transfer of heat from the enclosure. Once complete, the Co-operative installed them in laboratories and after six years the very first Sealed PCs are still working in the acid lab environments. According to Andrea Biondo,

"If that lab was still using conventional PCs, they would have used 12 to 20 computers by now. They'd be on the scrapheap, in the bin, or in in landfill. They're still using the very first Sealed PCs that we provided. We built quite a few of those, and we still have basically a zero-failure rate on them in these really harsh environments. And they're very, very unique product. Nobody else makes them. [...] From a sustainability product point of view, they're a fantastic product. From an up time, preservation point of view, they're a fantastic product too, they keep your lab running" (A. Biondo, 2024).

In 2020 Galactic received the Victoria Park Digital Innovation Solutions Award for the Sealed PC (Galactic, 2020a). According to Victoria Park Mayor Karen Vernon,

"The judges were impressed with [Galactic's] ability to make innovative devices which significantly reduced landfill" (Town of Victoria Park, 2020).

Figure 14: Mayor Karen Vernon with Galactic Co-operative and the Sealed PC



Source: Galactic (2020).

After Claye Jensen left the Co-operative, the baton was passed on to other staff to head the project. Since then, improvements have continued to be made on the design (Governing Fellows, 2024).

Sustainability as a Service

For several years the Co-operative struggled to support Dr Ringvall's expertise in sustainability solutions. However, in 2019 she began to develop a four-part public workshop, "Living Lighter, Living Better", focused on educating the community about lowering waste, (Galactic, 2019c). This series was to be presented to the City of Canning. However, in January 2020, Dr Ringvall decided to halt development of her sustainability programs until market research could be conducted, including a survey of potential clients in three business size categories (Galactic, 2020b). Although there is no mention of Dr Ringvall's work in either the Board minutes or Annual Reports prior to February 2023, the discussion in this Board minutes implies work was ongoing during that period (Galactic, 2023b).

Developed and headed by Dr Ringvall, Galactic provides a variety of training, advice, and consultation services to community organisations and SMEs. For context, an SME is an organisation with fewer than 250 employees and an annual turnover of less than €50 million (approx. AU\$82.1 million) (Ghauri et al., 2024). This includes the Sustainability Toolbox, a series of purchasable templates and checklists to help businesses decrease their carbon footprint and effectively manage their waste and energy efficiency (Galactic, 2024c; 2024e). In addition, it educates SMEs on zero waste, circular economy materials, and sustainable livelihood.

The Climate Risk Audit tool also helps SMEs mitigate the impacts of climate change, while also meeting the fiduciary and business expectations of clients, customers, and the Australian

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Securities and Investments Commission (ASIC) (Galactic, 2024f; Ringvall, 2024). It involves risk management and policy compliance advice and processes. Indeed, smaller organisations may not have the resources to employ sustainability professionals, thus Galactic simplifies this service for them under three tiered packages, small, medium, and large, catering to the level of need and depth of enterprise while also providing consultation time with their sustainability expert, Dr Ringvall (Businesswomen Australia, 2023; Galactic 2024f; Ringvall, 2024).

The development of Sustainability as a Service was bolstered due to Dr Ringvall's conviction that ASIC would pursue mandatory auditing on climate related financial disclosures (Businesswomen Australia, 2023). In 2017 the Taskforce on Climate-related Financial Disclosures released a series of recommendations, and in 2022 the Federal Government released a consultation paper on the issue (The Treasury, 2022). This paper asserts that climate change is:

"... a risk which needs to be managed by capital markets, regulators and corporations. This includes both the physical risks of climate change, and the transition risks associated with policy, regulatory and technological change brought on by efforts to mitigate climate change" (The Treasury, 2022, p. 5).

This paper declares that disclosure is an important tool to manage individual and systemic climate-related financial risks. It states:

"The Government has committed to ensuring large businesses provide Australians and investors with greater transparency and accountability when it comes to their climate-related plans, financial risks, and opportunities. As part of this commitment, the Government will introduce standardised, internationally-aligned reporting requirements for businesses to make disclosures regarding governance, strategy, risk management, targets and metrics – including greenhouse gasses" (The Treasury, 2022, p. 5).

The paper also noted changing legislation on climate-related disclosures was occurring in New Zealand and the UK, with developing requirements in the US, Switzerland, and Singapore.

From this consultation, Australian legislation was passed in September 2024, with the requirement that measures were to be implemented from 1 January 2025 (ASIC, 2024). According to ASIC (2024), the *Treasury Laws Amendment (Financial Market Infrastructure and Other Measures) Act 2024* (Cth) requires large businesses to prepare annual sustainability reports, submitted to ASIC, containing mandatory climate-related financial disclosures.

ASIC planned to phase in the reporting requirements over a three-year period, with the first reports required for the financial year commencing or on 1 January 2025. According to ASIC Commissioner Kate O'Rourke,

"As more people consider environmental sustainability when making financial decisions, climate disclosure will continue to grow in importance. Enhanced climate disclosure will also benefit reporting entities themselves, enabling them to better understand their climate-related risks and opportunities over the short, medium and long term" (ASIC, 2024).

The legislation only requires compliance and reporting by large enterprises, National Greenhouse and Energy Reporting reporters, registered schemes, superannuation entities, and retail

Corporate Collective Investment Vehicles. However, Dr Ringvall is certain that it is only a matter of time before SMEs will be required to comply and report. She recognises a need within the community, particularly for the SME sector, asserting that sustainability is integral to business. Melissa Scanlan, a legal specialist academic, recommends that co-operatives, to ensure their survival have,

“... a clear commitment to environmental sustainability, circular economy, biodiversity, organic and regenerative agriculture, and renewable energy” (Scanlan, 2021, p. 287).

Dr Ringvall argues that without sustainability, businesses will not have access to the resources used in the present because they will be used up or cannot be grown (Businesswomen Australia, 2023). For Dr Ringvall, sustainability requires that what is done now meets the needs of the present and future generations, without robbing, the latter of opportunities (Businesswomen Australia, 2023). According to Cheney et al. (2023), most large institutions are,

“... plainly ill-equipped for long-term survival, especially given the addiction to growth and modern notions of progress, in both material and discursive practices” (Cheney et al., 2023, p. 143).

Within the concept of sustainability, there exists two industry terms, Environment and Social Governance (ESG) and Corporate Social Responsibility (CSR). The former is about how a business demonstrates their environmental and social governance in a beneficial way. Whereas the latter refers to how a business presents a social benefit, including providing for the community (Cheney et al., 2023). CSR has been a widely used concept since the 1970s, broadly referring to the notion that traditional IOFs,

“... should not confine their chief obligations to owners or shareholders” (Cheney et al., 2023, p. 158).

Tcaciuc et al. (2012) state that CSR requires companies to commit to behaving ethically while contributing to economic and social benefits, such as quality of life for employees and family in addition to the local community, which the authors assert also includes environmental protections. In their research Tcaciuc et al. (2012) found that the commitment to CSR improved company reputation and brand. They state that,

“A big number of companies ascertained that all the activities related with the social responsibility helped to create good relationships with different stakeholders and proved to be useful in finding good employees in a very competitive market areas” (Tcaciuc et al., 2012, p. 223).

However, enterprises are often cautioned to use CSR “safely” provided it contributes to maximising profits and the success of management (Cheney et al., 2023). Both ESG and CSR are provided for within Sustainability as a Service. In the future, Galactic Sustainability aims to develop a Sustainability Portal and app to provide SMEs and community organisations advice and training on issues relating to carbon footprint, waste management—including zero waste—and energy efficiency.

CHAPTER 4: ENHANCING SOLUTIONS: 2021-2023

On 8 September 2021, Stephanie Black resigned from the Co-operative for personal reasons (2025a). Throughout the year, Galactic struggled to find a much-needed full-time service engineer due to time and financial constraints (Galactic, 2021b; 2021c; 2021d). However, in September Joel Maher joined the Co-operative, employed as a Service Engineer (Maher, n.d.).

Figure 15: Joel Maher, Galactic member



Source: Galactic (2022).

Maher has an educational background in physics and is currently studying a Bachelor of Science (Multidisciplinary Science). Previously he held an apprenticeship in fitting and machining—operating floor borers and conducting gearbox fitting—as well as a position in a large corporate manufacturing workshop. He notes that he was largely unaffected by the corporate structure due to his trade related work.

2021 was the beginning of a refurbishment for the Co-operative. They began building a website, working with designer Kat Wray (Galactic 2021a; 2021b; 2021c; 2021d; 2021e). However, there were some difficulties, with the need to hire new copywriters in the middle of the year (Galactic, 2021d). In addition, the Annual Report for 2021 had a distinct design and established the inclusion of photographs. It began with a new introduction about the Co-operative and information on its founder (Galactic, 2021a).

In 2021 Kate Biondo joined the board of directors of Co-ops WA (Galactic, 2021a). Kate and fellow Directors Andrea and Adam attended the Co-ops WA conference held in September 2021 that included a tour of CBH's Kwinana Grain Terminal (Galactic, 2021a).

The Co-operative continued to benefit from the COVID-19 Government relief measures of JobKeeper and Cash Flow Boost payment schemes. The net result for the financial year was almost \$88,000, with the Co-operative experiencing an overall surplus of \$95,000 (Galactic, 2021a). In addition, Galactic reduced its loan obligation to Andrea Biondo for the purchase of Galactic Scientific's client base from \$54,000 to \$42,000. However, the pandemic continued to affect the Co-operative through staff absences, including its Lead Physicist (Galactic, 2021a).

In December 2021, Galactic began considering BCCM membership. The Board minutes reflect the discussion among Governing Fellows, members, and employees. Notably, one employee, Isabel Boots, a transgender woman who managed cybersecurity for Galactic at the time and was also the child of Andrea and Kate Biondo, opposed the opportunity. Boots argued BCCM needed to address some internal issues before Galactic should become a part of it, namely, the gender ratio of the Board, indigenous co-operative membership, and LGBT+ diversity (Galactic, 2021e). This issue was later reconsidered in February 2022 with general support from Galactic staff as they saw the benefit of marketing (Galactic, 2022a).

Importantly, Galactic has consistently made efforts to encourage gender diversity in the enterprise, as reflected in the Co-operative's Board minutes. However, similar to the broader issues in STEM fields as well as co-operatives in typically male-dominated industries like agriculture, ensuring gender diversity is difficult. This is particularly the case for SMEs with fewer resources. This difficulty reflects a broader need to encourage women and girls to pursue STEM related careers in addition to providing employment opportunities.

Figure 16: Ben Rolender



Source: Galactic (2022).

Figure 17: Galactic Co-operative staff based in Perth, 2022



Left to right: Joel Maher, Ian Wilkins, Kate Biondo, Andrea Biondo, Aileen Swarbrick, and Ben Rolender.
Source: Galactic (2022)

In January 2022, Ben Rolender was employed at the Co-operative as a field engineer. In July that year, Aileen Swarbrick rejoined the Co-operative as a logistics officer and all-rounder (Swarbrick, n.d.; Galactic, 2022b; 2022c). Within the first year back she devised a Stock Keeping Unit system to organise Galactic’s inventory, “bringing order to the chaos” (Galactic, 2022b, p. 8).

Ben Rolender has a Bachelor of Science, majoring in physics, from Curtin University. While studying, he was employed at a Liquor Barons store which was a part of a co-operative. He recalled that at the time he did not know what being in a co-operative meant.

In 2022, in conjunction with the website launch, Galactic took group and single photographs of Governing Fellows, members, and employees. With the completion of the website, Galactic moved the posting of their sustainability initiatives from their Facebook page to the website. In addition, the Facebook page was removed. Furthermore, Dr Ringvall finalised the Climate Risk Audit tool for SMEs and was able, with the aid of Aileen Swarbrick, to transform her existing work from EXCEL format to the website with an online store selling digital products and lab equipment (Galactic 2022b). In August 2023 Dr Ringvall launched Sustainability as a Service on the website and the online store (Galactic, 2023d).

According to Galactic’s Annual Reports, in 2022 the Co-operative reviewed their previous five-year plan, developed with Nerida Mills, and acknowledged that they successfully met most of their targets (Galactic, 2022b; 2023a).

At the 2022 AGM, Kate Biondo suggested they refine the Co-operative’s purpose and member value proposition (MVP). This continued into 2023 as Galactic attended a Co-operatives and Mutuals Strategic Development Program run by the UWA Business School in conjunction with the Australian Institute of Management of WA (AIMWA) and Co-ops WA, and worked on their vision (Galactic, 2023a).

That same year the Co-operative collaborated with ADAPT by Design to strategically develop their MVP (Galactic, 2023a; 2024d). Founded by Bill Withers, ADAPT by Design is a business planning initiative which encourages “robust strategy, healthy culture, an effective leadership team, and the systems to support and build this team” (ADAPT by Design, 2024a; 2024b). Moreover, it is guided by the principles of building a healthy culture with high levels of trust and intrinsic motivation, deliver value to customers, develop leadership capacity and capability, develop visual maps to guide and align stakeholders, promote transparency, embracing succession of the total system—rather than simply roles or ownership—and to challenge negative power hierarchies which impact trust and intrinsic motivation (ADAPT by Design, 2024b).

Between 2022 and 2023, the Treasurer’s Report noted a significantly high volume of unpaid debtors in the company’s Accounts Receivable (Galactic, 2023a). The report claims there was low non-collection risk due to ongoing work and open communication. However, in the June 2023 Board minutes, the Co-operative had to chase up customers for overdue accounts.

The 2024 Treasurer’s report noted that 77 per cent of the company’s overall Accounts Receivable was made up of three customers, which posed a risk for the Co-operative by “having so many eggs in one basket.” (Galactic, 2024d, p. 14). Needing to chase-up overdue accounts left Galactic with a short-term cash flow challenge and brought into focus the Co-operatives exposure to “economic dependency” on major clients. However, according to the Report, the Co-operative has developed strategies to improve the situation (Galactic, 2024d).

In 2023, Galactic welcomed new employees, with Shalom Bajeh for People and Culture in June and Dustin Holmes in July (Galactic, 2023a). In addition, earlier that year, Joel Maher began the process of membership. Bajeh has a background in agricultural economics and human resources, including in not-for-profits, beginning in Nigeria before coming to Australia. Notably, her experiences as a migrant have been considerably impactful, with challenges of settling into a new culture and workplace, adapting and communicating confidently in the context of language and cultural differences.

Bajeh completed a master’s in human resources management in 2024. She is passionate about people-focused work and creating spaces in which people feel seen and supported. Working for Galactic has been her first experience in a co-operative structure. As a more values-driven and collaborative environment, Bajeh has found it very different to investor-owned firms (IFOs). This reflects her values on placing people before profit, workplace well-being, and utilising human resources to shape kinder more inclusive work environments.

Figure 18: Shalom Bajeh and Dustin Holmes



Source: Galactic (2023).

Of her experience at Galactic, Shalom Bajeh said,

“Working at a co-op like Galactic has been refreshing. It’s empowering to work in a space where everyone’s voice matters and there’s a shared sense of ownership and care. I’ve learned a lot from the collaborative way decisions are made. The challenges mostly come from communication—it’s not always easy feeling heard, especially as someone from a different background. Sometimes, I still feel like I need to work extra hard to be understood. But overall, it’s helped me grow and pushed me to keep learning and showing up”

By comparison, Dustin Holmes, an American, is focused on computing, and was described on the Galactic website as,

“Our low-profile, coding wizard, from the good old USA brings that American can-do spirit to Galactic. Dustin is the secret ingredient that makes it all happen, quietly and with a smile!” (Galactic, 2025).

Figure 19: Fiona Darcey, member



Source: Galactic (2023).

In May 2023, Ian Wilkins left the Co-operative as his role was made redundant (Wilkins, n.d.). This was a hard decision for the Co-operative (Galactic, 2023d). In October that year, Aileen Swarbrick also left the Co-operative (Swarbrick, n.d.; Galactic, 2024d). However, Dr Ringvall returned to Perth and in May that year Fiona Darcey joined Galactic as an Engineer (Galactic, 2023a; Galactic 2024d).

In 2023, Galactic ran a Repair Lab with the City of Cambridge (Galactic, 2024d). These are community-focused initiatives in which the Co-operative provides no-cost repairs to those in need. In December 2023, the Co-operative considered paying wages for people studying related subjects in addition to the expansion of their business offerings. However, Employsure, a business consulting service for issues of human resources, workplace health and safety, and workplace relations, advised against this and provided further advice on the creation of policies for the company (Galactic, 2023a).

In Galactic's 2023 Annual Report, goals for the next twelve months were discussed, including development of an MVP, the potential purchase of a permanent site for the Co-operative, and commission payments (Galactic, 2023a). In 2023, Galactic concluded paying off the loan obligation to Andrea Biondo (Galactic, 2023a). In total it took the Co-operative approximately five years to pay off the loan, sooner than they anticipated (Galactic, 2018f; 2023a).

**Table 2: Galactic Co-operative Financial Performance 2020-2024**

Year	Annual Turnover	EBIT ⁵	NPAT ⁶	Total Assets	Total Liabilities	Total Equity
	\$	\$	\$	\$	\$	\$
2020	352,722	305,102	29,274	97,619	94,371	3,248
2021	412,166	345,751	95,045	196,630	77,035	119,595
2022	608,254	474,474	37,604	225,886	70,919	154,967
2023	795,105	602,634	67,179	485,372	268,690	216,682
2024	1,046,112	865,709	64,869	794,927	509,690	285,238

Sources: Galactic Annual Reports, 2020 to 2024.

At the beginning of the 2023-2024 financial year, the Co-operative set a target to exceed \$1 million worth of Trading Income (Galactic, 2024d). This was achieved for the first time in its history, reaching \$1.04 million, driven by an increased focus on the equipment and parts sales side of the business. Indeed, the Treasurer’s Report argues that Galactic’s steadily increasing net profit before tax has been,

“... driven largely by our increased focus on product and parts sales as opposed to services”
(Galactic, 2024d, p. 14).

WAGE AND COMMISSION REVIEW, 2023

The Galactic staff expressed concerns regarding wages to the Governing Fellows, with reference to award and market rates. As a result, in late 2023 the Co-operative underwent a Wage and Commission Review. Governing Fellows, members, and employees discussed as a team the rates of each person, with a focus on the growth of the company, rather than profit. According to the main themes document which they created,

“The main idea is we are all in this together and it takes all of us to produce the results!”
(Galactic, 2023c).

Worker co-operatives are often criticised for having low wages, in a kind of “self-exploitation”, as opposed to the exploitation of employee to worker in traditional IOFs (Carter, 1989). However, the economist Alan Carter, maintains that it is more common for a worker co-operative to have low wages due to market exploitation, which he describes as,

“the transfer of surplus-product from a producer to another individual because of the subordinate position of the producer in the market” (Carter, 1989, p. 196).

⁵ EBIT: Earnings before interest and tax.

⁶ NPAT: Net profit after tax.

Self-exploitation is an economic concept initially developed within an agricultural context to explain how “simple commodity producers” could outcompete capitalist firms (Galt, 2013, p. 346). Originated by Karl Kautsky, to explain the conditions of the German peasantry in the late 1800s, he examined family farm units who persisted despite capitalist agricultural competition. This was often due to “underconsumption”, that is, the act of,

“... excruciating labor by underfed peasant families damaging their physical and mental selves for a return which is below that of the ordinary wages of labor power” (Shanin 1986, p. 6, paraphrasing Chayanov 1966; Galt, 2013).

In response to Carter’s thesis, economist John O’Neill asserts that for exploitation to occur there must be two distinct parties, the exploiter and the exploited, and although worker co-operatives don’t involve self-exploitation, they can experience “something which is very much like it” (O’Neill, 1991, p. 232). O’Neill (1991) also criticises the notion of “market exploitation”, asserting that for it to occur there needs to be,

“... a measure of a good’s worth that is independent of the current price in the marketplace” (O’Neill, 1991, p. 232).

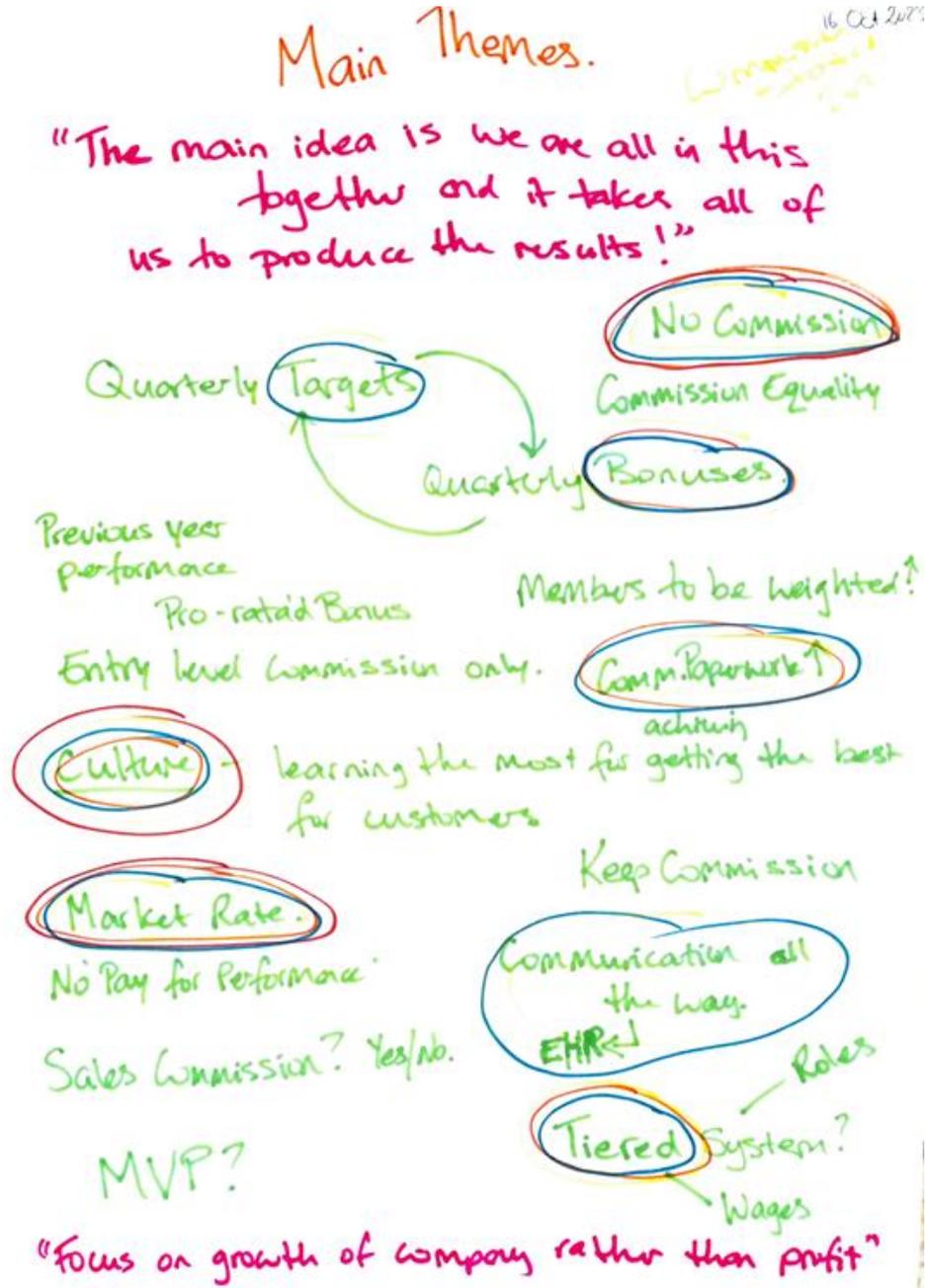
However, O’Neill (1991) suggests that when workers are forced by market demands to pay low wages to themselves, there is a conflict of interest between their different roles, that of the enterprise in increasing profitability to maintain its survival, and that of the worker to receive fair pay and conditions (O’Neill, 1991).

Galactic considered making their own market rates as not all staff fit within the distinct markets, which made comparison difficult (K. Biondo, 2024). They looked at different kinds of Australian industrial awards (both State and Federal), including the Professional Award, the Clerk, and Manufacturing, trying to best fit each employee with an appropriate award. In addition, the company considered adopting the market rate for Service Engineers, which they found possible at the low rate but difficult for the average rate (Galactic, 2023f). Prior to the review Service Engineers had a 20 per cent commission. However, for some the commission process was no longer viable.

After the group discussion process, employees were asked to write in about the proposed changes, in 1,000 words or less (K. Biondo, 2024). Additionally, the service engineers provided data on their hours and wages (Galactic, 2023g). The information was then collated, and the findings were shared with everyone for further feedback. One employee said that the use of commissions appeared inequitable and complicated the processes of bookkeeping and accounting (Galactic, 2023g). Another employee agreed, citing their experience in the not-for-profit sector to illustrate the unsustainability of monthly and quarterly commissions and the potential perception they create that some employees are working harder than others. They suggested adopting a market rate compensation model. Another employee proposed a three-tiered payment system, probation, post-probation, and member, rather than commissions, with gradual implementation to mitigate risk.



Figure 20: Major Themes from the Review



Source: Galactic (2023c). Circled items were decisions made.

Conversely, another employee believed the current commission system was working, providing incentive to focus on billable hours. However, they hoped it would phase out as Galactic continued to grow in non-engineer roles. They perceived a risk of developing a harmful hierarchy within the Co-operative if they continued with a tiered system of those with commissions and those without.



Fiona Darcey discussed the Co-operative's ineffective use of commissions, arguing:

“The most effective way to earn commission as a service engineer is to spend most of our time responding to emergency callouts and finding new customers when we run out of emergencies, instead of putting in research and spending time discussing service agreements so that we can prevent breakdowns, which is in direct conflict with the values of the staff – all of us want to do work we can be proud of and reduce waste. Projects that venture into R&D territory do not attract commission until they are well underway, yet more varied projects help the cooperative be more flexible and better prepared for unforeseen changes in the spaces we work in. Being a cooperative gives Galactic an inherent advantage in flexibility anyway, however commissions create more work for accounting” (Galactic, 2023g, p. 4).

Darcey also asserted that all roles in the Co-operative are important, and Galactic should continue to foster flexibility and communication.

It was unanimously decided that there would be an individual hourly rate for all staff (Galactic, 2023f). For the Service Engineers the Co-operative's rate was based on approximately 10 per cent more than their current pay rate, which meant approximately an addition \$2,000 per fortnight (Galactic, 2023f). In addition, the Co-operative decided to remove commissions for Service Engineers (K. Biondo, 2024). Moreover, staff asked the Governing Fellows to consider a pay regime with tiers and bonuses for members that would be developed by 2026. The decisions from this review would take place from the 1st of January 2024 (Galactic 2023f).

During the discussion, the Co-operative elaborated on their savings goals for 2024 and 2025, including the purchase of a building, a new company vehicle, a buffer fund for worst-case scenarios, and the employment of an administrator and an engineer-physicist (Galactic 2023e; 2023f).

The review experience was a positive one, allowing staff to talk openly with one another (K. Biondo, 2024). However, it also highlighted the need for the Co-operative to further develop their MVP (Galactic, 2023g). Indeed, having multiple values—other than maximising return on investment—operating simultaneously is key to ensuring a lack of exploitation (Galt, 2013).



CHAPTER 5: AN INSPIRED FUTURE: 2024 AND BEYOND

On 24 January 2024, Fiona Darcey began the process to become a member (Galactic, 2024d). That same month the Co-operative finalised their Membership Policy. Moreover, the Co-operative employed two new staff, Ben Grassi in April and Luisa Naranjo in May as a Product, Logistics, Procurement and Fulfilment Coordinator (Galactic, 2024d; Laranjo, n.d.).

Figure 21: Ben Grassi



Source: Galactic (2025).

Ben Grassi graduated from Curtin University in 2020 with a Bachelor of Engineering in Mechatronics, with Honours. He chose Mechatronics engineering as he was “interested in working with prosthetics and other assistive technology.” According to Grassi, it was also because

“Living in WA, it was difficult to look for work in the engineering field that wasn’t closely linked to the mining industry, which is something I wanted to avoid for environmental reasons. I also thought that as far as ongoing job security goes, Mechatronics would be an industry that was only going to keep growing and improving, and was going to be a good way to work within my skillset in a way that would help improve aspects of daily life for people.” (B. Grassi, 2025).

Figure 22: Galactic Co-operative at the 8th AGM



Back row from left to right: Fiona Darcey, Kate Biondo, and Dustin Holmes.
Middle row: Adam Binks, Ben Rolender, and Ben Grassi.
Front: Shalom Bajeh, Andrea Biondo, Dr Kate Ringvall, Luisa Naranjo, and Joel Maher.
Source: Galactic (2024).

On 26 September 2024 Galactic held their eighth AGM. According to the 2024 Annual Report, the President Street location of Galactic’s offices was unexpectedly sold (Galactic, 2024d). Although the Co-operative was preparing for this eventuality, they did not expect it to occur in 2024. According to Kate Biondo, Galactic proposed creating a unit trust with their fellow tenants in the complex and they made an offer to purchase. Biondo shared via email correspondence,

“Our fellow tenants were very supportive of staying and being part-owners, which was very encouraging” (K. Biondo, 2023).

However, the Co-operative promoted unit trust could not offer a price acceptable to the sellers and with new owners came increased rents. These events gave Galactic the impetus to find a new, improved location for the Co-operative, likely one they “own in perpetuity” (Galactic, 2024d, p. 11).

In 2025 two members of the Co-operative resigned, Joel Maher and Fiona Darcey. This reduced Galactic’s membership number to four as of time of writing.

GALACTIC MEMBERSHIP POLICY

In January 2024, Galactic developed their Membership Policy, which involved a checklist that members must agree to adhere to when joining (Galactic, 2024g). This checklist included:



-
- Pay a \$4,000 share over six months and no longer than twelve months in cash and/or sweat equity.
 - Become a member after twelve months and at least 800 hours of paid work.
 - Promote the Member Value Proposition.
 - Implement a robust risk identification strategy.
 - Proactively share and create opportunities to promote co-operatives and Galactic's activities in the community.
 - Attend the Co-operative's get-togethers and customer Hobnobs when scheduled.
 - Commit to community engagement activities, such as the Repair Lab.
 - Establish and enhance research and development initiatives which add value to the membership base.
 - Nurture positive and enduring relationships with members, promoting engagement, satisfaction, and a sense of community with the Co-operative.
 - Cultivate and strengthen relationships within the industry, ensuring the Co-operative is well-connected and influential.
 - Elevate brand recognition of the Co-operative within the membership community to foster a strong and trusted association identity.
 - Understand and support the Co-operative's constitution, values, internal processes, and members' active participation, as well as the seven Co-operative principles.

Furthermore, the responsibilities of Governing Fellows are elaborated as follows:

- Be the custodian of the Co-operative's vision. This includes the constitution, rules, the seven co-operative principles, Galactic's five values, its vision, and its MVP. Custodianship also means being able to recite them and contextualise them to Galactic.
- Support the health of the Co-operative's team, keeping them safe.
- Maintain fiduciary goals, including solvency and climate footprint. This includes clarity on working capital, managing the succession of member capital, principles for remuneration, and surplus distribution and allocation, and designing the risk profile and execution strategies for entrepreneurial opportunities.
- Succession of membership, leaders, and the owner-director team roles.

The policy illustrated Galactic's Member Value Proposition (MVP) under the four "hats" or roles of the Co-operative's members. This will be discussed further in the MVP analysis section in Chapter 6.

Figure 23: Workers of Galactic Co-operative



Source: Galactic (2024d).

During 2024 and early 2025, within the Membership Policy, Galactic fine-tuned its Distribution Policy with the aim of distributing financial benefits by the end of 2025. Reflecting the Co-operative's scientific and "galactic" focus, they created a distribution calculator inspired by the Drake equation. This equation, formulated by Dr Frank Drake in 1961, consolidates several variables which affect the likelihood of discovering intelligent life which can communicate across interstellar spaces (Galactic, 2025d).

Galactic used this equation as inspiration, as it,

"... is an attempt to wrestle numerical values from a complicated universe with some observational values clearly measurable and some values still emerging. Therefore, it suits our endeavour to place a number on the fair distribution of the agreed surplus when we, the co-operative, deem it time to make distributions" (Galactic, 2025d, p. 1).

The distribution calculator is discussed in more detail in the Profit Formula analysis section in Chapter 6.

SWEAT EQUITY

Throughout the Co-operative's history the concept of sweat equity has been integral to its financial viability. In Galactic's 2024 Membership Policy it defined sweat equity as:

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“The contribution of labour, effort, and time that members invest in the co-operative, often in place of or in addition to financial investments. Unlike traditional business models, where individuals may invest capital to gain ownership in a worker-owned co-operative, members earn ownership through active participation and work for the co-operative. Sweat equity recognises the value of the work and commitment that members contribute to the co-operative’s success. This can include various forms of labour, such as administrative tasks, production, marketing, or other activities contributing to the co-operative’s functioning and growth. The concept aligns with the co-operative principle of democratic control, as members have a say in the decision-making processes based on their active involvement. Sweat equity is a way to foster a sense of shared responsibility and ownership among the co-operative members, promoting a more egalitarian and participatory structure” (Galactic, 2024g, p. 2-3).

The concept of sweat equity is noteworthy, as it has been rarely discussed within the context of worker co-operatives. It has the potential to be an innovative solution to the sustainability of developing and undercapitalised worker co-operatives. Therefore, further research into this concept would be beneficial.

LOOKING FORWARD

The Membership Policy lays out goals and up and coming projects for the Co-operative, including Galactic Fleet, aiming to reach by 2029, and Galactic Housing. Moreover, the 2024 Annual Report highlighted goals for 2025. This included refining the MVP, commission payments, the potential purchase of offices, and building their savings (Galactic, 2024d). The Annual Report also encouraged input from members as well employees on the goals and plans for 2025 onward (Galactic, 2024d).

In the 2023 Annual Report, Chair Andrea Biondo expressed his gratitude to the Co-operative and its workers, stating,

“As we stand on the precipice of a new era, let us embrace the challenges and opportunities that lie before us, knowing that our strength lies in our unity and unwavering dedication” (Galactic, 2023a, p. 9).

CHAPTER 6: APPLYING THE CME RESEARCH FRAMEWORK

The conceptual framework for research into co-operative enterprise is focused on understanding the business model of the Co-operative and mutual enterprise (CME), and how it is influenced by, and in-turn influences, systems and member level factors (Mazzarol, et al., 2014).

At the systems level, which relates to the external environment, there are four major inputs (i.e., social cooperation, role of government, industry structure, natural environment), and two major outputs (i.e., economic, and social capital formation). These elements also interact with each other within the systems architecture. This views a social system as comprising six key elements (Luhmann, 1984; Mattheis, 2012):

1. *Communication* – all systems are social in nature and therefore it is essential that a system has communication between the actors within it, and between systems.
2. *Autopoiesis* – a Greek word for “self-creating” or “self-making”, recognising that all systems must be able to replicate, adapt and evolve using communication to exchange knowledge and ideas, resulting in learning, amongst the actors within the system.
3. *Differentiation* – all systems are autopoietic systems (social structures) that operate within the wider environment and are differentiated and independent from each other.
4. *Operative closure* – each system has the ability to isolate (close) itself in order to develop its own unique systems-specific activities.
5. *Functional differentiation* – due to differentiation and operative closure, each system is able to evolve its own unique characteristics that can create functional and dysfunctional interactions between different systems within the environment.
6. *Structural couplings* – where two or more systems recognise the need to link together, they create inter-system relationships that open *structural holes* between them enabling an exchange of communication relaying ideas, information, and knowledge (Burt, 1992a/b).

Social systems are self-forming, complex, and dynamic. They involve interaction and behaviour at the individual, group, and organisational levels, through which change is achieved within the broader environment (De Haan, 2006). The creation of social systems is generated through both formal and informal networks of individuals and organisations that have common interests, and/or resource dependencies (Jessop, 1997; Klijin & Koppenjan, 2000).

A CME is a social system and has all six attributes outlined above. It operates within a systems level environment in which all other social systems—both formal and informal—operate. These other social systems interact with the CME, and the components of its business model—e.g., purpose, profit formula, processes, resources, share structure, and governance—which influence its ability to deliver a compelling member value proposition (MVP) to its membership. Key areas of interaction are social cooperation between individuals and organisations, government legal and regulatory systems, market competition within industry structure, and the environment.

At the member level, the framework examines the four roles or “hats” that the member wears (e.g., investor, patron, owner, member of a community of purpose) (Mamouni Linnios et al., 2018). Members loyalty and commitment to the CME is influenced by how well the enterprise addresses the needs of its members—both manifest and latent—through its ability to generate and sustain a member value proposition (MVP) (Suter & Gmür, 2013).

In the following sections the history of Galactic Co-operative is examined with a discussion of lessons learned. Comparative information on IOFs and other worker co-operatives is included for context. A summary of these issues is in Appendix A.

ASSESSING THE CRITICAL EVENTS THAT HAVE FACED GALACTIC CO-OPERATIVE

This study has identified several critical events over the Co-operative’s history. A critical event is a causally important contingent event for an outcome at a specific time with longer-term strategic consequences. Summarising such events provides historical context against which the selected Co-operative can be examined using the conceptual framework explained above.

CRITICAL EVENT 1: DEVELOPING THE BOARD

The first critical event which Galactic faced was the difficulty in developing the Co-operative’s board. At the formation meeting on 11 January 2017, Galactic’s founding board members included Andrea Biondo, Kate Biondo, Bryn Pittman, Dr Kate Ringvall, and Caleb Tang. Notably, the majority of those on the board had long-term relationships with Andrea and Kate Biondo, including previously working together. However, these existing relationships did not ensure the levels of trust, shared values, and clear communication required for the effective management of the board and the Co-operative. Dr Ringvall recalled of the time,

“Employing the right people has actually been quite difficult. The process and the skills required. For us to judge who might fit really well has taken us time to learn and grow around. And I think in the beginning, we didn’t really know what that looked like. We had no skills there” (Dr K. Ringvall, 2024).

Finding the right number also played a part in Galactic’s difficulties. The legislative requirement of five or more active members meant the Co-operative did not have the capacity to carefully select members of the board. This resulted in complications within the year. In addition to mixed values and expectations, Galactic struggled to find suitable Governing Fellows, and co-operative members generally, due to a general lack of awareness and understanding of the co-operative model, and even more so for worker co-operatives.

This reflects the broader literature on worker co-operatives. Further, it lends to arguments like those by Puusa et al (2016) in which the motivation behind a person joining a co-operative involves an “ideological attachment towards the co-operative idea” due to a lack of public awareness of the business model (p. 23). In Ghauri et al.’s (2021) research into co-operative values and principles, they found few of the members and board members interviewed could recall the principles and values without prompts. Many of the managers and members interviewed for the study thought education referred to technical and industry-relevant information, rather than the co-operative business model, principles and values.



Ghauri et al. (2021) highlighted the importance of education about co-operatives on an enterprise's efficiency, social cohesion, and member commitment. As one of seven co-operative principles, education, training and information is vital for CMEs. It involves providing education, training, and information to members and employees so they can effectively contribute to the development of the enterprise, including in areas of co-operative values like democracy, as well as financial literacy, informing the general public about co-operatives and its benefits (Dufays et al., 2020; Cheney et al., 2023; Estragó, 2023). Knowledge about the co-operative principles and six values (self-help, self-responsibility, democracy, equality, equity, and solidarity), means that members can more effectively adhere to and meaningfully participate in them, reducing the risk of the business becoming an IOF (Puusa et al., 2016; Ghauri et al., 2021; Estragó, 2023).

Over time, Galactic were able to recruit additional members based on a commitment to these seven co-operative principles and six values while also discerning what they needed in a board member. This resulted in the well-functioning board they have today, with Andrea Biondo, Kate Biondo, Dr Kate Ringvall, and Adam Binks. This reflects experiences of other small co-operatives. For example, Gupta's (2014) research on a Californian worker co-operative found that success of the enterprise is facilitated by a small size, a stable consumer base, and self-selection based on shared values and ideals.

Galactic's experience highlights the necessity for a co-operative's members to have a deep understanding of the principles and values of co-operatives, as well as a significant level of trust, reciprocity, and communication in the enterprise. Given adequate time, co-operatives can more effectively select members, particularly those who become directors and serve on the board, which aids in the organisation's overall efficiency, culture, and sustainability.

CRITICAL EVENT 2: NAVIGATING THE COVID-19 PANDEMIC

The second critical event which affected the Co-operative was the emergence of the COVID-19 pandemic. For many SMEs, the pandemic was devastating due to the series of lockdowns and disruptions to supply chain. However, there are cases like that of Galactic where the pandemic provided opportunities.⁷ Governing Fellows Andrea Biondo, Kate Biondo, and Adam Binks summarise Galactic's experience:

Andrea: "Our business virtually doubled overnight because of COVID. Because we do a lot of work for overseas suppliers. A lot of these overseas multinationals, they have head offices, or they have an office in the Eastern states. They had very few resources on the western side of Australia. So, during COVID, they were effectively cut off from their customers. A lot of businesses that were competitors, you could say, during COVID became our allies. They were basically beating down our door asking us to provide services on their behalf. So, our business pretty much doubled overnight and after the airports opened again, it didn't change. Maybe a little, but not much. Most of our competitors realised that it actually makes good sense to cooperate with us and not fly their people over from the other side of the world or the other side of the country."

⁷ See other case studies in this series, such as Mazzarol, T. van Aurich, A., & Baskerville, B. (2025). *Quairading Farmers' Co-operative Co. Ltd. – Cornerstone of our community*, CEMI-CERU Case Study Research Report, CSR 2502, www.cemi.com.au Centre for Entrepreneurial Management and Innovation.



Kate: "I think another part of it was Job Keeper."

Adam: "The government subsidies. We did quite reasonably well out of—probably to the tune of about 100K."

Andrea: "We used that to hire people. It was a good coincidence that we had that Job Keeper cash flow improvement, and we needed extra people all of a sudden because we had all these companies saying, "please, please, please come and help us." [...] If we still had cash flow boosts today, we would probably be on a level playing field with most multinationals" (A. Biondo, K. Biondo, & A. Binks, 2024).

Galactic were able to effectively respond to the pandemic due to their bricolage strategy. Originally coined by anthropologist Claude Lévi-Strauss in the 1960s, the concept has been applied to a variety of phenomena, including organisational studies. Baker and Nelson (2005) developed the concept of "entrepreneurial bricolage" to describe the ways in which organisations create "something from nothing" (p. 329). Indeed, they define it as,

"... making do by applying combinations of the resources at hand to new problems and opportunities" (Baker & Nelson, 2005, p. 333).

However, Baker and Nelson (2005) caution that "making do" does not imply imperfect solutions, rather, they argue bricolage involves a conscious and consistent test of limitations.

Roloff (2023), in her research on SME crisis responses, posits four patterns, including bricolage, "weathering the storm," solidarity and support, and social innovation. She argues the four patterns are distinct but, in the case of bricolage, can overlap. Roloff's study found almost all SMEs employed at least occasionally a form of bricolage in their response to the COVID-19 pandemic.

Roloff (2023) considers that bricolage refers to a crisis response strategy involving a series of incremental adjustments. In addition, bricolage involves flexibility and organisational resilience which then fosters the potential to innovate during adversities. Roloff (2023) found organisations with a blend of social, environmental and financial goals found opportunities in the COVID-19 pandemic to innovate through bricolage. Similarly, Miocevic and Srhoj (2023) found a correlation between strongly innovative organisations and flexibility during the pandemic.

Furthermore, Roloff (2023) also suggests that bricolage can involve the expression of support and solidarity to ensure the well-being of an organisation's stakeholders. Such efforts can be due to opportunities for innovative projects which the crisis facilitates through consequences like cash flow boosts or work from home initiatives. Roloff (2023) found in cases such as these solidarity and support were both socially beneficial and profitable outcomes.

Finally, Roloff (2023) highlights how the perspective of the decision-makers when analysing a crisis informs their response choices. For example, those who see adversity as a challenge tend to follow tactics which worked in the past, those who see adversity as a threat focus on reduction of costs, whereas those who see adversity as an opportunity are more likely to reinvent the business to better fit this identity (Roloff, 2023). This can be further impacted by the rate at which the crisis emerges and continues.

Due to Galactic's geographical location, with Perth being one of the most isolated major cities in the world, and perhaps, therefore the least effected, and the implementation of JobKeeper, the company did not need to cut jobs during the COVID-19 crisis. As the Governing Fellows previously described, it meant they were able to hire more employees. This experience challenges common criticisms about co-operatives and reflects the emerging literature on worker co-operatives in which they tend to maintain jobs during times of crisis, preferring instead to reduce wages (Puusa et al., 2016; Pérotin, 2017; Dow, 2018; Bastida et al., 2022; Preluca et al., 2022).

Galactic was also able to develop lasting relationships with stakeholders due to the conditions of the pandemic, particularly with eastern states based clients. This resonates with Miocevic and Srhoj's (2023) study on SME resilience in the pandemic in which such collaborations were effective responses to supply chain disruptions and fostered resilience. In addition, in turn, it cultivated trust, commitment, and relational norms such as solidarity and mutuality which continued to foster collaborative behaviours.

CRITICAL EVENT 3: DEFINING THE MVP

The third critical event for Galactic was defining its Member Value Proposition (MVP). Since its formation, Galactic has had a difficult time articulating a distinct MVP. However, this is not unique to Galactic, as many worker co-operatives all over the world have faced similar struggles, particularly with outlining the distinct differences in value the co-operative provides to employees and to members.

It is worth noting that Galactic has had to manage employees not wanting to pursue membership or a position on the Board due to the preference to avoid further responsibilities. This reflects other worker co-operative experiences. Although workers are encouraged to become members, some may not want the voting power and responsibilities of attending meetings and participating in decision-making (Preluca et al., 2022).

In its first year Galactic aimed to have ten members by 2019 (McMullen, 2017). As an SME, this was an ambitious target and to date it has not been achieved. This can be attributed to a multitude of factors, including the lack of a distinct MVP, interpersonal issues, its niche role and small size, and disruptions to employment and the market. According to Adam Binks,

"The challenge would be getting the right people involved as workers and then convincing them to become members. We have had a very variable degree of success with this and have not been able to expand our membership (and keep it that way) past the initial & early founders" (A. Binks, 2025).

These abovementioned issues are explored in more detail in the MVP and Governance analysis sections found below.

ASSESSING GALACTIC CO-OPERATIVE UNDER THE *LIFECYCLE THEORY*

University of Missouri, Agricultural Economics Professor Michael L. Cook developed a lifecycle theory of CMEs to explain their capacity for longevity. According to Mazzarol (2024), the theory consists of five stages, including:

1. **Formation** - The co-operative is formed in response to a market failure that cannot be solved by the members individually. Strategy is defensive in nature.
2. **Growth and consolidation** - The co-operative provides members with benefits and addresses the economic and social problems that motivated its establishment. It can provide services, prices, and products that are more competitive than IOFs.
3. **Market change** - The market environment changes, often due to the co-operative's presence in challenging existing IOFs. Competition becomes more intense caused by IOF responses, or market deregulation. The co-op becomes inwardly focused to address its transaction costs, and the free-riding, horizon, portfolio, control, and influence cost problems.
4. **Strategic choices** - Facing competitive challenges, the co-operative will need to consider strategic alternatives: exit (e.g., wind up), continue, or restructure with a different ownership and governance structure.
5. **Strategy implementation** - The co-operative pursues one of the transition strategies examined in stage 4. These can result in the business being wound up, merged, or demutualising into an IOF. Alternatively, it can continue as a modified cooperative with different forms of governance and equity structure. Finally, it can be transformed into an NGC. Overall, its strategy becomes more offensive in nature with greater market focus

Based on this lifecycle theory, Galactic sits within the second stage, growth and consolidation, as it develops its MVP and addresses economic and social problems within the industry and local community. In particular, as a worker co-operative, Galactic addresses the social and economic issue of fair wages, working conditions, and a long-term meaningful job. Furthermore, its sustainability and community-centred approaches means they can provide solutions to local issues while simultaneously addressing global problems.

Galactic is competitive with IOFs due to its innovative and unique products and services such as the Sealed PC and Sustainability as a Service. Moreover, the Co-operative's zero-waste approach to equipment repairs and maintenance makes them an appealing and efficient choice for organisations as more attention is given to issues of environmental sustainability in the future.

However, as the Co-operative is still adjusting its internal processes, such as governance and its profit formula, while also developing the capacity to distribute surplus to members, it is unlikely Galactic will shift to the third stage in the lifecycle in the foreseeable future.

SYSTEMS LEVEL ANALYSIS – INPUT FACTORS

As the history of Galactic Co-operative (WA) Ltd. exemplifies, its founding and development has been informed by the four input factors—social cooperation, government, industry, and environment—which continues to play a role in shaping the Co-operative over time.

SOCIAL COOPERATION

According to Mazzarol et al. (2014), for a co-operative to form, it requires support of a membership base which are drawn together in the spirit of cooperation. Moreover, for successful creation of a CME, the community must possess at least three things: i) resources (e.g., time, capital, skills); ii) mobilisation (e.g., mutual needs, common goals); and iii) motivations (e.g., desire to cooperate and sustain collaborative effort) (Birchall & Simmons, 2004). Similarly, according to Preluca et al. (2022), social cooperation manifests in the sharing of skills, advice, knowledge, ideas, and organisational best practices in addition to trading with other co-operatives and participating in national worker co-operative bodies. This section will analyse Galactic Co-operative and its formation within those parameters.

In terms of resources Galactic had the capital to shift relatively seamlessly from a successful sole trader business to a co-operative, assisted greatly by what was essentially a “vendor finance” facility.

With the support of those like Peter Wells at Co-operatives WA, Galactic was able to draw from their knowledge and skills to form the Co-operative. Although the initial Governing Fellows had the time necessary to become a co-operative—in part due to being an existing organisation—they acknowledge that they did not have the time nor skills to choose the most effective members during formation.

Regarding mobilisation Galactic began as a sole trader and Andrea Biondo aimed to pursue an equitable ownership model through cooperativism. Indeed, according to Cheney et al. (2023), co-operatives are made first by the existence of “cooperativists”. Through Andrea and Kate Biondo’s research into worker co-operatives, and the interest in this business model by other Governing Fellows and members, Galactic was able to transition into a co-operative.

Cheney et al. (2023) also argue worker co-operatives emerge when common goals include “autonomy, democracy, equity, education, and concern for the community and planet” (p. 122). This is evident in the common goals expressed by Galactic Co-operative during formation and to this day. The motivations for Galactic to become a co-operative were predominantly ideological with additional shared values, such as collaboration and democracy.

According to Puusa et al. (2016), in their research on the social and economic nature of Finnish worker co-operatives, the main motive for choosing a co-operative model was financial security and the low starting costs of shared financial risk.

In the cases that Puusa et al. (2016) investigated, many first considered a solo entrepreneur structure, but perceived it as too risky. This differs slightly from Galactic’s experience, as it began as a sole trader and shifted to a co-operative model with more employees coming on board. The

desire for an alternative structure was based around financial needs in that Galactic wanted better wages and working conditions than they perceived an IOF could provide.

Puusa et al. (2016) also found that additional motivations were ideological and based on employment, when there was little or no work available or traditional forms of employment were not viable for reasons of life situation or personal choice. For the former, the scarcity of knowledge about worker co-operatives and their relatively short existence indicated that those pursuing a worker co-operative model had an existing ideological attachment to the co-operative idea.

Preluca et al (2022) found that some members expressed political motivations for members to join a co-operative. However, they observed that members became more political once they experienced the co-operative model—particularly democratic principles and participatory processes—which they then applied to issues outside of their work.

The ideological motivation reflects experiences of Galactic members and Governing Fellows. They were inspired by social democratic theories and the desire to make a difference, as well as expressing a need to be treated as a human being rather than a “wage slave.” Galactic members perceived this to be truly achievable through the co-operative business model.

ROLE OF GOVERNMENT AND REGULATORY FRAMEWORK

The role of government in the creation, development, and demise of CMEs is significant. Governments can set regulatory and legislative frameworks in which co-operatives must operate, impacting their capacity to function and potential for growth. The role of government in the creation, development, and demise of CMEs is significant. Governments can set regulatory and legislative frameworks in which co-operatives must operate, impacting their capacity to function and potential for growth.

An early and notable role of the government in Galactic’s history was the *Co-operatives Act 2009* (WA) legislation which specifies five or more active members. As previously discussed, this caused problems in the early years of the Co-operative, as formation required membership from those which may have been better suited as simply employees, working their way toward membership provided they demonstrated shared values and a commitment to cooperativism.

This may cause problems in the Co-operative’s future as at time of writing Galactic had a total of six members. If two people decide to cease their membership (e.g., retirement as was the case with a previous member), Galactic could once again struggle to meet the requirements of the legislation and risk repeating the issues of their first year.

A major positive impact of the Government on the Co-operative was during the COVID-19 pandemic. As previously discussed, Galactic was able to take advantage of opportunities due to the cash flow boosts provided by the Federal Government through the JobKeeper scheme. This reflects the international experience, as Miocevic and Srhoj (2023) argue governments had considerable impact on the pandemic, and in many cases were instrumental in reducing negative consequences and stabilising the economy.

Overall, some Galactic Governing Fellows expressed a general feeling of being unsupported by government and regulatory frameworks. This is particularly the case for Galactic's innovative solutions to local and industry related issues. For example, with Svelto bikes, although Galactic had a local government contract, the Co-operative received no research and development tax incentives or rebates.

Andrea Biondo reflected on his experience with government:

"They love what we do because we basically fulfil government policy. What they're trying to achieve in government, we just do by default. That's just how our business works. And they're sort of scratching their heads—they always ask the same question—they always say, "how can we help you?" Well, my answer to that is always, it's kind of hard for me to answer that because you haven't helped us out much to date, and despite that we've done really well" (A. Biondo, 2024).

INDUSTRY STRUCTURE

As businesses, co-operatives are affected by the industry in which they operate. Competition is the major way in which industries can impact an organisation. There are five elements which can influence the level of competition within an industry, including the level of competitive rivalry in the industry, the power of buyers, the power of suppliers, the threat of new market entrants, and the threat of substitution (Mazzarol et al., 2014).

Galactic is situated primarily in the laboratory service provision. According to Andrea Biondo,

"The laboratory service provision is a pretty good description of what we do. Laboratories are everywhere. They're actually quite ubiquitous. People think laboratories exist in basements of universities, and that's about it, but, actually, they're everywhere. Every single item that any person in Australia or around the world ever purchases or manufacturers has at some point gone through a laboratory. Anything that's got a label on it that says it contains X amount of sodium or weighs 52 grammes, or operates on this voltage, those numbers had to be measured and verified in a laboratory of some sort somewhere. So, laboratories are everywhere" (A. Biondo, 2024).

Over time, the Co-operative has expanded its products and services, working in areas of broadcasting, telecommunications, and sustainability. This reflects their entrepreneurial and innovative focus, in which they develop projects where they see a need and have the capacity to address it. Galactic has noted they have competition from eastern states organisations, in addition to multinational IOFs, which can impact their business through their capacity to build their client base. As previously discussed, the COVID-19 pandemic had a positive impact on the Co-operative by bringing in new clients. Another draw for clients is Galactic's local and community mindset. According to Andrea Biondo,

"Our customers are local. We spend much as we can locally and we see in our customers a real desire to spend locally as well, which is why we've got so many fans out there in the laboratories. They've never really had the opportunity to think local and because scientific instruments are generally always owned by overseas multinationals, or they are all owned by overseas multinationals, we're the only people who provide service to scientific instrumentation that is Australian owned and based and keeps all profits from the business



in the country. Every other supplier is basically exporting all their products. And our customers really value that. They're starved of the opportunity to try and do more of that" (A. Biondo, 2024).

With reference to the power of buyers and suppliers, CMEs can use collective efforts to challenge market distortions caused by monopolies, increasing bargaining power for buyers or suppliers. This model allows small enterprises and individual workers to pool resources, compete with monopolists, or offer substitute services. However, Galactic found it difficult to attract people to invest in the Co-operative, thus, investment primarily came from the Governing Fellows (K. Biondo, 2024).

A major cause for this was the lack of education on Co-operatives in the general public and relevant industries. Funding from banks was particularly difficult due to this lack of knowledge. Arguably, the difficulty in hiring employees and developing their membership base is also due to this lack of general understanding of co-operatives, its principles, and values.

Regarding the threat of new market entrants Galactic found that they struggled with developing and launching their products and services too early. For example, with Svelto Bikes and Sustainability as a Service. Although competition fosters innovation for an enterprise, according to Cheney et al. (2023), it can also be a significant barrier due to new ideas or technologies requiring a form of marketable product or service. Those which aren't afforded a competitive advantage may be left underdeveloped or ignored. For Galactic, Svelto Bikes faced considerable barriers for being too early to market, unable to build an economy of scale, and then faced with considerable competition from larger companies like Bosch and Atala.

NATURAL ENVIRONMENT

The environment can play an integral role in influencing a CME's strategic decision-making process. In particular, the natural environment can create high uncertainty for co-operatives, due to climate change, pollution, biodiversity loss, or the collapse of ecosystems (Mazzarol et al., 2014). These impact manager and board member decision-making, depending on how they interpret the level of threat these may pose. Indeed, there are at least three types of ecologically induced uncertainties, including uncertainty over future industry and market conditions; the inability to predict the impact of environmental change on the organisation; and the lack of knowledge about impact and the suitability of response options (Mazzarol et al., 2014).

As Galactic is in the laboratory service provision, environmental factors have not deeply affected the functioning of the Co-operative. However, one major impact was the COVID-19 pandemic. The Co-operative was able to continue running due to being considered an essential service. However, there were several instances where the staff had to take sick days due to contracting the virus, particularly in early 2024, which for a small business was considerably impactful on day-to-day functioning (Galactic, 2024d).

Notably, for many years the Co-operative struggled to function smoothly without the presence of its CEO and its Chair due to being a small business. This was tested in 2023 when Andrea and Kate Biondo took leave. However, according to Treasurer Adam Binks the Co-operative

“passed that test with flying colours” (Galactic, 2023a).

ENTERPRISE LEVEL ANALYSIS – ASSESSING THE BUSINESS MODEL

Galactic Co-operative (WA) Ltd demonstrates the impact of the four enterprise factors, purpose, MVP, governance, share structure, profit formula, key processes, and key resources, which are integral to the function of the business.

PURPOSE

The purpose refers to the strategic reason for a co-operative to exist and the value which it offers to ensure membership (Mazzarol et al., 2014). A CME is usually created for a purpose relating to the addressing both economic and social problems which its members share which can be best addressed through mutual ownership and collective action (Puusa et al., 2016; Mazzarol, 2024). The purpose is designed to encourage shared values and identity, as economic interest in of itself is not enough to generate this shared identity (Ghuri et al., 2021; Mazzarol, 2024). Such an identity resonates with all current and future members, and guides CMEs to protect them from degeneration or demutualisation (Mazzarol, 2024). According to the 2024 Annual Report, Galactic Co-operative’s stated purpose is the following:

“To embody our vision actively and authentically. We strive to lead in fulfilling our vision, making prudent use of our resources, and fulfilling our purpose and fiduciary duties. Each day, we dedicate ourselves to preserving the enduring Galactic vision and acting as responsible stewards to guide Galactic on its path towards sustainability, realising our vision, and upholding our core values” (Galactic, 2024d, p. 8).

The Constitution states the Co-operative’s purpose and mission as:

Purpose: “As a co-operative, our work practices are inherently local and community minded. Our cooperative is about providing a stimulating place of work and livelihood to its workers in the local community” (Galactic, 2024h).

Mission: “As the Galactic Co-operative, we aim to be innovative, inspiring, and tenacious, demonstrating that we can do better—Galactic Co-operative – An inspired future” (Galactic, 2024h).

In Galactic’s constitution and Annual Report for 2024, the Co-operatives values are:

1. *Authenticity: to communicate and act in truth.*
2. *Sustainability / Stewardship: Act as stewards of our resources, ensuring long-term environmental, social, and economic health.*
3. *Connection / Collaboration: Work collaboratively with our community, showing genuine investment and care.*
4. *Inspiration: Lead the way—Do the impossible better.*



5. *Progress / Growth: Courageously advance our business and personal growth (Galactic, 2024d; 2024h).*⁸

MEMBER VALUE PROPOSITION

Unlike a conventional investor-owned business model which requires a customer value proposition to attract a target market for a particular product, co-operatives require an MVP (Mazzarol et al., 2014). An MVP is based around the co-operative's purpose, as this informs what attracts and retains members. Therefore, to create an effective MVP, a co-operative must determine how members understand its value and how that value is created within the business, addressing both economic and social benefits. Indeed, when a co-operative and its members' objectives are aligned, it is more efficient than an investor-owned firm (Candemir et al., 2021). Importantly, the MVP needs to be unique and not readily available elsewhere (Ghauri et al., 2024).

When considering a co-operative's MVP, Mazzarol (2024) raises the questions,

- *"How does the business help the members? Do all members have the same needs?"*
- *"What roles do the members have as patrons, investors, owners, and members of the community of purpose?" (p. 9).*

This kind of analysis is necessary because the principle of voluntary and open membership means people are not compelled to become members, thus they need to see the value in their membership (Mazzarol, 2024).

Moreover, a co-operative should undertake continuous assessments of member perception of the value of their membership (Mazzarol, 2024). Continuous assessment can involve forums and facilitation groups. According to Ghauri et al. (2024), these provide opportunities to "generate ideas that may be useful" such as the needs and goals of members and cocreating values in the process (p. 8). This echoes the shifts in the goals of a co-operative and its membership base, as described in Cook's lifecycle theory, particularly when membership becomes more heterogenous. A disparity in goals may lead to inefficient decision-making and unnecessary conflict which is detrimental to the organisation (Gupta, 2014).

An MVP can ensure active member participation, which is an important aspect of a co-operative's success (Ghauri et al., 2024). An active member participates through patronage, involvement in governance, and engaging in roles as patron, investor, owner, and community member (Ghauri et al., 2024). These are considered the four "hats" members wear when engaging with the co-operative.

Galactic Co-operative organises their MVP within the notion of hats in their Membership Policy (Galactic, 2024g). In addition, their draft revised Constitution includes information on the MVP, as stated in the following table (Table 3).

⁸ The variations in purpose and values are likely due to the Constitution being a draft document to be approved at the 2025 AGM.



Table 3: Galactic Co-operative WA Ltd Member Value Proposition

Entitlement	Description	Cost
Shares and Investment	Have a percentage ownership of the business and contribute to the control of our capital. Invest in your employment and professional development. This is a real power and capital-sharing arrangement, unlike corporate share ownership schemes. In most companies, employees who own shares have little or no control over whether share value can be diluted, how the business runs or how capital is allocated. In our co-operative, when our balance sheet shows a million dollars of value, this is equally owned by each share-holding member and cannot be diluted through share sales to external parties of investors. With this ownership comes real power, the power to do good, and the power to decide how the business runs, spends or earns its capital.	\$4000.00 one-off membership payment.
Full Voting Rights	One share, one vote. Our co-operative embraces a flat structure, allowing for flexibility in work arrangements. We prioritise clear roles and outcomes, implement processes to ensure high-quality products and services and emphasise knowledge succession for our team's continuous growth and success. We equally participate in managing our co-operative, setting policies, and making decisions. One vote, one value, which means everyone has an equal say.	
Education	Payment of Professional Association subscriptions and attendance at co-operative events, training, and outings are included as a member. Whether it's Australian Institute of Management training in Claremont, WA or Laser training in Montana, USA, we will gather our resources to make it possible for members to nurture their education.	
Leadership and Culture	Our co-operative prioritises values, ensuring they are communicated and upheld. We foster a culture that values the well-being of our team members, encourages authentic leadership, embraces new ideas, recognises individual talents, welcomes constructive criticism, supports training and development, and ensures adequate rewards for the valuable work contributed. You can be the boss and the worker simultaneously! This is an opportunity to assist in areas of interest and direct the business as it grows. Imagine your ideal workplace. Do you want to use Linux instead of Windows? Do you want pink desks? How about mandatory basketball breaks? You can build our co-operative culture with your peers, keeping an eye on the future when leading your team sustainably to infinity and beyond!	



Independence	Help to keep our co-operative autonomous and independent for our people. You could work for a company and raise capital for someone else so they can sell the product of your work to the highest bidder. Or you can control what happens to the product of your work. Co-operatives can't be sold off unless all the members choose to do so.	
Community	Our policies and programs sustainably contribute to the development of our local community. We provide a space that connects our members' skills and their work with the community. Our community can be as big or small as we want. How can we connect with your community?	
Benefit Distribution	We make democratic decisions about distributing our surplus funds. Our co-operative focuses on setting attainable goals, utilising effective forecasting, and ensuring transparent cash flow communication to maintain a healthy financial position. Our annual distribution is decided and rewarded at the AGM. Will you reinvest the surplus, pay it out to members, or do something else? How do we distribute the fruits of our labour?	
Commitment to Sustainability and Active Transport	Enhance your membership experience with our commitment to sustainable and active transport solutions. As a member, enjoy the convenience of access to electric bikes for your daily commute, promoting eco-friendly mobility. Additionally, leverage the benefits of a dedicated work vehicle during business hours, ensuring efficient and sustainable transportation tailored to your work needs.	
Social Capital Investor	Our people-centred work environment recognises workers' well-being, collective effort, and complementary capabilities. We invest in building social capital to secure the future of the co-operative. Our co-operative strongly emphasises research and development (R&D) to drive innovation while prioritising brand recognition. We proactively identify risks and cultivate positive relationships within the industry and with our customers. Making a positive difference is what we're talking about. How can the co-operative invest in you, broader society and the environment we rely on?	
Committee of Management	It's no secret that work is better when it's your work. Employees who are members and shareholders are likely to feel like they are a real part of an organisation and will invest in the direction and Vision of our Co-operative. As a member, you can elect to serve on the management committee and become a Governing Fellow. You can be the face of our Co-op, keeping our members informed and inspired. No power suits are required, but you will wield real power—power to do good.	

Source: Galactic (2024h, p. 5-7).

Patronage for a worker co-operative differs to most other co-operatives in that it is rarely based on supply-chain management, fair prices of goods and services, or efficient transactions (Mazzarol et al., 2014). However, it can be based on the quality of services members receive. Patronage can also be measured by their active participation in the running of the co-operative, similar to the owner role, as well as hours worked (Novkovic et al., 2012; Puusa et al., 2016).

Active participation includes governance, such as attending meetings, being in committees, and serving on the board (Ghauri et al., 2024). As a reward for their patronage, members are given dividends (Puusa et al., 2016). Members as patrons can also be a “flag bearer” for the co-operative movement within the general community in addition to contributing to the development of services and resources in the co-operative (Ghauri et al., 2024).

The investor role refers to a member’s desire to receive a return on their investment in the co-operative, much like shareholders in an IOF (Mazzarol et al., 2014). The role as investor is crucially tied to that of patron, as if the former outweighs the latter, the co-operative risks demutualisation (Nilsson, 2001). Thus, a balance is required (Mazzarol et al., 2014).

As an owner, members can exert control and agency over their professional life through democratic processes inherent in a worker co-operative structure (Dufays et al., 2020). Notably, Dufays et al. (2020) argues the democratic skills members learn and utilise in their work can empower them “equipping them with the resources to function democratically and develop solidarity for the broader community. In turn, this may enable workers to better shape and control the fabric of their lives” (p. 966).

Within this role of owner, members must have both formal and a psychological sense of ownership to contribute to the continuation of a co-operative (Novkovic et al., 2012). Engaging in social and team-building activities can build this sense of psychological ownership. Galactic has organised several team-building events since its foundation, usually involving considerable collaborative and cooperative skills.

For example, in 2022 they organised an event at Mystic Clue, an escape room company, in which the Co-operative team tested their problem-solving skills (Galactic, 2023a). In addition, in 2024 they organised a Twilight Abseiling event in which, according to the Chair, it,

“... challenged our physical limits and strengthened our team’s cohesion” (Galactic, 2024d, p. 9).

Such activities, in addition to Hobnobs, build rapport, trust, and strong working relationships within the Co-operative and its stakeholders.

According to Balnave and Patmore (2018), some scholars argue worker co-operatives perform better than IOFs in areas of worker morale and organisation loyalty, among others. This is due to workers having a sense of financial and democratic ownership of the co-operative. Moreover, Gupta (2014) asserts this is due to shared social and political values between members and the co-operative, such as self-responsibility, solidarity, democracy, and equality.

Figure 24: Galactic Co-operative taking part in Twilight Abseiling



Source: Galactic (2024d).

Cheney et al. (2023) state that empirical research and case studies demonstrate that worker needs are “remarkably consistent”, expressing desires for:

“dignified and meaningful work, in a climate of mutual respect; safe working conditions; equitable remuneration; some degree of autonomy at the job; and an opportunity for some degree of voice about the policies of an organization and workplace that define, constrain, and that also can enhance one’s work experience” (Cheney et al., 2023, p. 9).

In a worker co-operative labour is meaningful because, rather than performing “labour-as-toil,” workers actively participate in the strategy, structures, and processes of the organisation while having the freedom to act on their own for a common purpose (Novkovic et al., 2012, p. 30). Workers are treated as human beings, rather than simply workers, and their input is taken into consideration for the development of the co-operative as well as when tackling day to day challenges (Zaunseder, 2022).

Indeed, several Galactic employees expressed similar sentiments, demonstrating the value of working for the Co-operative:

“The greatest part about working at a co-op for me has been feeling like my opinions are heard. At Galactic co-op decisions rarely get made without the input of the whole team, which ensure all concerns can be addressed” (B. Rolender, 2025).

“This is a business model that really appeals to me. I have a good deal of freedom in the work I conduct day to day, and I don’t ever feel that I am being micro-managed or constantly watched, and having felt this in my previous job I am really enjoying this environment” (B. Grassi, 2025).

Lastly, as a member of a community of purpose, an individual can operate as a social actor within their community. Moreover, the community can provide valuable resources to the co-operative

in a reciprocal relationship (Mazzarol et al., 2014). This reciprocity is enhanced through congruence of goals between the community and the co-operative, resulting in a sense of loyalty (Mazzarol et al., 2014). Indeed, Galactic's stated mission is:

"A co-operative is inherently local and community minded. It's our mission to be local and serve local, and to provide a place of work that is seriously stimulating, producing a proud and sustainable livelihood to our team." (Galactic, 2024a).

Many of the Governing Fellows, members, and employees have experience volunteering in their community. For example, Andrea Biondo has been a Fellow of the Australian Institute of Physics (WA), serving as Secretary for nine years, is a member of the Greens political party, is a Chartered Chemist of the Royal Australian Chemical Institute, and conducts Repair Lab days for the Town of Cambridge. Similarly, Kate Biondo is a member of the Greens, volunteers for Repair Lab in the Town of Cambridge, and aids the Council of Owners at Tranby on Swan with waste reduction and communication.

Adam Binks provides auditing work for the OAWA, assistance to the Repair Labs, and has been involved in not-for-profit organisations around disability services and homelessness. In addition, Joel Maher is heavily involved in inline and ice hockey, enabling 35 people to play the support through financial and emotional support. For children wanting to get involved in the sport, grant applications and sponsorships reduces the financial load on parents. Lastly, Ben Rolender provides assistance to the charity No Limits Perth for their day-to-day operations and at events.

In addition, membership to a co-operative can encourage feelings of belonging and self-esteem within an individual (Puusa et al., 2016). Personal values can be reflected in the work they contribute to the co-operative, such as a commitment to democracy and sustainability.

Despite Galactic's clear articulation of their MVP and the roles which members play with the four hats, the Co-operative has struggled since their foundation to define what their value is for members. This is predominantly due to being a worker co-operative, which includes employees as well as members. Trying to delineate the value difference between employment and membership has been difficult. Indeed, according to Kate Biondo,

"Encouraging people to become members is a challenge. We have had amazing people join and then leave" (K. Biondo, 2025).

In addition,

"It was always a struggle to figure out what our MVP was. [...] After I did the Co-ops and Mutuals Strategic Development programme, that's when, for me anyway, it was like I've really got to nut this MVP out and have it in black and white and get onto that. That was a big thing for me" (K. Biondo, 2024).

This reflects similar experiences of worker co-operatives. According to Puusa et al. (2016), they found none of the worker co-operatives they studied distributed their surplus through dividends, and "thus the members were not entitled to any return for their patronage" (p. 26).

Puusa et al. (2016) suggested that in practice many employees were acting as a hired employee which meant there was little incentive nor willingness to become a member. Additionally, membership rather than employment confers decision-making rights, such as on governance, the election of directors to the board, and the overall direction of the co-operative, which can encourage employees to become members, as they are impacted by decisions and thus would be motivated to become the decision-maker (McCain, 2007; Tonnesen, 2012; Preluca et al., 2022; Cheney et al., 2023).

However, a non-hierarchical and democratic structure like that of Galactic can impede the difference between employee decision-making and member decision-making which in turn could disincentivise employees to become members. With Galactic intending to distribute dividends in 2025, the Co-operative's capacity to incentivise membership may result in an increase in interest on behalf of employees who have satisfied the required service period. Furthermore, as a co-operative which transitioned from a sole trader, Galactic has struggled with the issue of legacy building. The current Governing Fellows have played a massive role in shaping the Co-operative since its foundation. However, it has been a challenge to comprehend what Galactic will look like when the founding Governing Fellow Members retire.

GOVERNANCE

Encompassing governance is the composition of the co-operative's board, the character and size of the management team, and how the co-operative engages with members (Mazzarol et al., 2014). The composition of the co-operative's board informs the effectiveness of its operations. In addition, whether the management team has been sourced from within or outside the co-operative can affect the operations of the co-operative.

Mazzarol et al. (2014) argues the management and board should comprise experts in business, finance, legal issues, and marketing, while also having strong knowledge of the unique character and operations of co-operatives, the spirit of cooperation, and develop a "collective competence" (p. 40). Indeed, this reflects Candemir et al. (2021) which argues governance informs the difference between investor-owned firms and co-operatives, an IOF involves private ownership by investor shareholders who supply capital but remain largely absent from daily management of the business (Preluca et al., 2022).

Galactic had considerable difficulty maintaining five directors, or Governing Fellows, required under the Registered Rules of the Co-operative. Several within the Co-operative argued this was due to the selection process being from a very shallow pool resulting in there being some individuals on the Board that should not have been involved due to their individualistic rather than cooperative focus. Co-ops WA Secretary Peter Wells advised Galactic's board to focus on adding depth to the talent pool by building up the membership.

Increasing overall member numbers would to some extent release those members who felt pressure to become a Governing Fellow but were not interested in the additional responsibilities. The Governing Fellows considered independent directors, however, there has been little motivation to recruit. Moreover, there is pushback from the Co-operative regarding the need for five directors, as discussed earlier in the study.



From her experience, Kate Biondo emphasised the importance of communication and trust to the governance and running of Galactic. Decision-making takes time, particularly for a worker co-operative aligned with democratic and egalitarian values. However, Galactic argue the quality of decision making is better (K. Biondo, 2024). For example,

"I'd rather have one good quality decision in ... in a day rather than five bad quality decisions in a day" (A. Biondo, 2024).

"I think generally speaking, everyone has to agree. If people don't agree, we have to kind of work out why don't they agree, what's holding them back from saying yes. Like a sociocracy kind of process. Which takes time, but I think it's a much better-quality decision. And everyone has to be engaged in that. Like you've got no... floaters" (Dr K. Ringvall, 2024).

Galactic's democratic decision-making processes are exemplified in the Wage and Commission Review. These quality decision-making practices reflect the broader co-operative scholarship. For example, Gupta's (2014) study of a worker co-operative found that,

"[E]ach interviewee mentioned the fact that decision-making through a collective democratic process can be challenging, frustrating, and time consuming. However, members also made it clear that this form of decision-making, despite its obstacles, was exactly what attracted them to join" (Gupta, 2014, pp. 104).

Such democratic decisions make workers feel like human beings, appreciated for their individual character, rather than their capacity as labourers (Zaunseder, 2022). Gupta (2014) also found that the workers, like Galactic, believed the decisions ultimately reached, despite the length of time, was,

"... often well-crafted, having benefited from multiple members' input and perspectives" (p. 104).

Although decision-making in co-operatives can be time intensive and requires considerable worker engagement, Zaunseder (2022) highlights how for smaller co-operatives it can be quite informal, spontaneous, and flexible.

Kaswan (2017) asserts democratic governance can be highly efficient but requires substantial training and commitment because most people do not have well-developed skills in democratic procedures. Thus, for a small co-operative with limited resources and time, employing people with at least some existing knowledge and values of cooperation, team-work, and democratic structures can be a great asset.

Gupta (2014) found that the co-operatives she studied were very selective in choosing members, and ensured new members had a high degree of commitment to the co-operative's principles. Similarly, Galactic has had to become quite selective in their choices of employment due to difficult past experiences.



Kate and Andrea Biondo explain:

“When we are advertising for people to join the co-operative, to be employees, we do ask some unusual questions of them. And we expect them in their cover letter to write answers to those questions. So, if they do write the answers, then we have a look at them. If they don't answer those questions, we don't bother looking. [With Shalom on board as the human resources person], the way we bring people on now it has changed, but we still have to advertise. And we try to in our advertising say what Galactic Scientific is about, what the co-operative is about. And then if people are keen, would they please put in their cover letter answers to these questions and then we interview them if we feel like they're in the running. And we ask them a set number of questions for that as well” (K. Biondo, 2024)

“We try to really get to know what people's values are” (A. Biondo, 2024).

It is noteworthy that the majority of employees, members, and Governing Fellows have shared values in environmental engagement and/or sustainability. When asked about their interests, many mentioned “getting out in nature” or some equivalent. In addition, concerns about environmental conservation, education, and recycling were expressed.

Despite the Co-operative's employment process, they have managed to ensure a level of diversity in hiring practices, particularly for women and LGBT+ individuals. Cheney et al. (2023) warns that worker co-operatives can risk maintaining racial and cultural homogeneity in their membership due to exclusive hiring practices. This then, they argue,

“limits the input of new information and new ideas, including perspective-taking on the organization's own practices” (Cheney et al., 2023, p. 46).

Galactic's ability to maintain a level of diversity—despite a significant lack in STEM industries—is likely due to the Co-operative's values, their commitment to equality, and gender balance on the Board.

PROFIT FORMULA

When considering the profit formula for a co-operative, it is important to understand although co-operatives face the same pressures of an investor-owned business, its main goal is not to maximise profits, rather, it is seeking to maximise benefits to its membership (Mazzarol et al., 2014). There are three main considerations for a co-operative's profit formula. Firstly, cost structure, which refers to the monetary consequences of the means utilised in the business model. Secondly, revenue model, which is how the co-operative makes money through its various revenue flows. Lastly, profit distribution policy, which is how the co-operative distributes its profits back to members (Mazzarol et al., 2014).

A distributing co-operative will issue shares based on the amount of patronage from a member. According to Mazzarol (2024), the main considerations of a profit formula are “whether share capital is linked to membership and patronage (normally it is), and whether it is linked to voting rights (normally it is not)” as well as “how dividends are paid, and how share rights influence the MVP” (p. 10). In addition to dividends, distributive co-operatives can provide valuable knowledge, time, and power in equitable ways (Preluca et al., 2022).

Unlike IOFs whose goal is to maximise profit and shareholder return on investment, typically worker co-operatives' profit formula is to distribute dividends from surplus based the patronage of work input, such as working hours and invoicing—or membership and thus wages (Altman, 2010; Tonnesen, 2012; Puusa et al., 2016; Preluca et al., 2022; Patmore et al., 2024a).

Although Galactic is a distributing co-operative, as of early 2025, they have not distributed surplus to members. Positive gross margin income has gone toward paying wages due to being a service business. Moreover, the annual Treasurer Reports highlight how wages, super, and employee benefits are higher than they should be. Binks, the Treasurer, argues this reflects the Co-operative's consistent approach to prioritising employee rewards over accretion of retained earnings. Indeed, one employee reflected how this is similar to the challenges of SMEs, with cash being tight. They argued the challenge was to build momentum, gaining in size so that the Co-operative isn't always fighting to survive.

In early 2025, Galactic developed their distribution model, creating a distribution calculator based on the Drake equation. Galactic's equation is as follows:

$$N = R^* \times f_p \times n_e \times f_\ell \times f_t \times f_i \times f_s \times f_c \times L$$

Where:

- N : The multiplier of the distribution shares a member is entitled to.
- R^* : The revenue, nett of costs and expenses for the Distribution Period and forms the distribution pool. Distribution should only be considered if cash reserves are above nominated minima, savings targets are on track and foreseeable expenses will be met without compromising the aforementioned reserves and targets.
- f_p : The percentage of personal growth goals achieved in the past Distribution Period. Personal growth goals will be specific, measurable, achievable, relevant, and time bound, be nominated by individuals to employee relations prior to and approved at the previous year's AGM and minutes therein. Approved goals will benefit the co-operative in some way while remaining aligned with their values. Achieved Goals are to be nominated by the member as completed or partially completed percentage wise to employee relations prior to and approved by the AGM (or special meeting if the Distribution Period is less than twelve months) and minutes therein.
- n_e : The percentage of hours worked in the past Distribution Period as a member.
- f_ℓ : The percentage of hours worked in the past Distribution Period as a Governing Fellow (Director) as the Co-operative values participation in governance.
- f_t : The percentage of hours worked in the Distribution Period as a Governing Fellow and Treasurer as the Co-operative values' fiduciary guidance.
- f_i : The percentage of hours worked in the Distribution Period as a Governing Fellow and Chair as the Co-operative values participation in decision making and leadership.



- f_s : The percentage of hours worked in the Distribution Period as a Governing Fellow and Secretary as the Co-operative values orderly process and preservation of the historical record.
- f_c : The percentage of hours worked in the Distribution Period as a Governing Fellow and CEO or Co-operative Coordinator as the Co-operative values the execution of decisions made by the Governing Fellows.
- L : The length of membership in years divided by the total number of years the Co-operative has existed, as the co-operative values democratic participation, service and loyalty from new and long-standing members. This factor has been adjusted with a time dependent variable. It applies a negligible reduction to “newbies” and an increasing reduction with years of service. More years of service will always yield higher distribution, however at a lower rate as inequality between newer and older members increases. This aims to reduce the perception of “double dipping” by long serving members while preserving the Co-operatives valuing of loyalty (Galactic, 2025d).

In addition, Galactic stipulates distributions are only possible for individuals whose membership is current, complete, unsuspended, and deemed to be in good standing as determined by majority Governing Fellow vote (Galactic, 2025d).

RESOURCES AND PROCESSES

The key resources necessary for a sustainable co-operative are a strategic network of partners, tangible assets, and intangible assets (Mazzarol et al., 2014).

The strategic network of partners comprises members and other complimentary actors with the purpose of providing value throughout the network. Galactic have been able to access a strategic network since its beginning, including through peak bodies like Co-operatives WA, accounting services from Adam Binks prior to his employment and membership, local governments, and the various business strategy programs the Co-operative took part in.

However, Galactic are also impacted by the lack of awareness and knowledge of the co-operative model, particularly worker co-operatives. More broader understanding of this model in the general public, organisations, and industries would allow for further strategic opportunities at local, state, and national levels.

Tangible assets refer to physical resources required for the co-operative to function, which typically include human and financial resources, infrastructure, equipment, and business systems. Galactic’s resources have been impacted by their small size. Much of the work is the responsibility of few people, and this can put strains on the running of the business when individuals are off sick or on leave. Each person is required to perform multiple roles.

For example, Kate Biondo is the CEO, Secretary, and main events coordinator. Over time certain events which Galactic ran have been paused due to Biondo's stretched capacity. As Kate Biondo explained:

"There have been a few things that I suppose have interrupted the ways in which we connect with community. Something that we used to do very regularly had a hob-nob. We would invite our suppliers, customers, anybody who wanted to come really. From about 4pm until 6 or 7pm we provide food and have people come to our workplace; come and see, come and talk to us about being a co-operative. They were really good, then COVID happened, and the main events coordinator is me. And I definitely dropped the ball there for a couple of years because of things that were happening in life. We used to connect with our community differently. And now we've changed and it's not as full-on anymore. I would like to change it again. I think we will. We will probably bring back hob-nobs at some stage. [...] It just needs my energy and commitment basically to get it to get it to happen." (K. Biondo, 2024).

Such demands on individuals can cause significant issues of work-life balance.

Galactic's physical infrastructure has been generally effective in ensuring productive work. However, one employee noted the shift from a corporate office environment to the Welshpool warehouse was a shock due to the lack of temperature control, resulting in the workplace being too hot or too cold to comfortably work.

Throughout 2021 Galactic discussed its desire to install photovoltaics at their Welshpool offices but had difficulties convincing the real estate agent and landlord (Galactic 2021b; 2021c; 2021d; 2021e). Galactic then pivoted, researching temporary structures, however, could not come to a suitable solution and in December 2022 decided to cease pursuing the issue (Galactic, 2022c). The Co-operative's infrastructure is currently uncertain with their pursuit of new permanent premises.

Due to the Svelto Bikes venture, the Co-operative can provide members with electric bikes for daily commuting. In addition, they provide a work vehicle for sustainable transportation.

Conversely, intangible assets are the core competencies of the enterprise, including the knowledge and skills required to be effective. Indeed, one major intangible resource is the capacity to unite members through aligning their individual self-interests with the collective action necessary for creating whatever "collective good" is outlined in the co-operative's purpose (Mazzarol et al., 2014, p. 37).

According to Silva and Morello (2021), the democratic environment of co-operatives can improve conflict resolution, which they describe as "the overcoming of discordances between workers and managers, perpetuating workers tenure in the cooperative and enhancing 'firm-specific human capital' that, via learning-by-doing, increases productivity" (p. 3). This is exemplified in Galactic's Wage and Commission Review in which the Co-operative banded together, bringing their respective knowledge and experience, to develop fair wages for all employees and members.

Processes refers to the sustainable delivery of resources and benefits to members (Mazzarol et al., 2024). Galactic has focused on providing sustainable services to the local community and laboratories. This has resulted in the development of innovative solutions like Sealed PC and

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Sustainability as a Service. To ensure the delivery of these services, the Co-operative generated workplace well-being and governance policies programs early on which are becoming increasingly relevant with Galactic's growth and development.

SYSTEMS LEVEL ANALYSIS – OUTPUT FACTORS

The two main outputs of CMEs relate to economic and social capital generation. Indeed, as concurrent economic and social enterprises, worker co-operatives require a competitive edge to ensure employment and income per worker as well as a focus on the needs and wellbeing of members (Puusa et al., 2016). This dual nature informs a worker co-operative's emphasis on social responsibility and financial stability, with success measured at the individual member and the overarching organisational levels (Gupta, 2014; Puusa et al., 2016).

ECONOMIC CONTRIBUTION

According to Mazzarol (2024), economic capital can be measured through the creation of assets, jobs, and wealth. Co-operatives can provide indirect contributions through encouraging community enterprises and enhancing community social and economic capacity, which can in turn address inequalities driven by uneven development and capital-accumulation processes (Vieta & Lionais, 2022; Mazzarol, 2024).

Galactic provides employment which emphasises innovation and the pursuit of individuals' passions through job crafting. According to Dr Kate Ringvall,

"I think the thing that is different in a worker owned co-operative to other types of co-operatives is that as individuals, we have the opportunity and the support to develop business opportunities that we see available, if we choose to. We can choose not to. But whereas in a normal kind of company, we have to wait for someone else to decide that there's a business opportunity and that we have to then chase it on their behalf" (Dr K. Ringvall, 2024).

Galactic provides opportunities to interns, employees, and members to develop scientific and sustainable solutions to problems in the community. These have included issues of commuting, rapid degradation of laboratory equipment, unnecessary scientific and technology waste, workplace well-being, and adherence to sustainability legislation for SMEs.

Galactic also strives to provide long term meaningful work. According to Andrea Biondo,

"As a member of a worker co-operative, you have a meaningful job for life. [...] It's just a part of the business structure, it gives you a meaningful job for life in a worker owned co-operative, which is part of the local economy, with a benefit to the community. These things are just baked into the structure of worker owned co-operative." (A. Biondo, 2024).

This reflects the literature in which Preluca et al. (2022) found that sustainable co-operative missions had the common thread of 'aiming to create purposeful work that provided employees with decent livelihoods and a workplace that cared for their wellbeing' (p. 11).

However, there are downsides to being a small worker co-operative. According to Ben Rolender,

"As Galactic co-op is not a purely profit driven company, striving more for enjoyable employment and making a difference, the systems in place are not optimised to generate

maximum cash flow. This can lead to ups and downs in workload and flow” (B. Rolender, 2025).

The most significant economic contribution the Co-operative has made to WA is through their laboratory services and reduction in landfill waste. In particular the Sealed PC and repairs, such as using 3D printing, have considerably positively impacted Galactic’s clients and reduced the amount of equipment and materials in WA sent to landfill. An example of the latter is between 2023 and 2024 Galactic was able to salvage a freighter full of equipment from going into landfill. They refurbished the equipment and provided it to their customer base, saving approximately 100 vehicles per instrument in greenhouse gas emissions for each “redeployment” (Galactic, 2024d).

In Kaswan’s (2017) analysis of US worker co-operatives they noted that one of the “problems” economic researchers on co-operatives identify is a lack of incentive or capacity to grow. For example, worker co-operatives tend to be of interest to those seeking alternative models for business and thus may want to maintain a small size. As discussed in the limitations and strengths of worker co-operatives section, this minimal growth issue may not be as prominent as previously expressed. Within the context of sustainability (i.e., environmental and financial longevity) growth for growth’s sake, or “growth as progress”, may increasingly be more a problem when pushed up against the capacity of the environment to “sustain human activity” than a worker co-operative’s low incentive to grow (Mellor, 2012, p. 5; Cheney et al., 2024). A low incentive to grow may reflect a co-operative’s emphasis on building satisfying workplaces and thriving communities rather than competition and capital accumulation (Cheney et al., 2024).

Galactic’s purpose, mission, and values reflect economic theories such as doughnut economics, circular economy, and the green economy. Doughnut economics, informed by the UN Sustainable Development Goals, outlines several measures for sustainability which Preluca et al. (2022) argue can be applied to worker co-operatives. These measures include:

- The mission of the enterprise should revolve around changing the goals of the business and the broader economic system from measuring progress based on economic growth toward human rights and living within the means of the planet.
- Shifting the mission to move beyond financial returns to bringing service to the community.
- Membership should be in the hands of stakeholders closely related to the running of the co-operative, rather than absent members; governing control in the hands of those concerned with the mission and who have a long-term view.
- And having ethical networks in the community; aim for a design which distributes wealth sources and income equitably (i.e., a worker owned business, living wages, ethical supply chains, and fair payment of tax).

Circular economy theory implies three principles of sustainability, including the reduction of waste and pollution, maintaining the use of materials and products in the economy, and regenerating natural systems (Preluca et al., 2022).

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These types of regenerative designs oppose extractive designs of typical of IOFs focused on maximising profit. This does not mean that a co-operative is required to put environmental considerations before costs. Preluca et al. (2022) argue that cost prioritisation can still be considered sustainable if the reasoning is not to increase profit or returns, rather, to make,

“... sensible business decisions, maintain customers, create a pot of financial reserves, and ensure the continuity of the co-operative” (p. 11).

Lastly, according to Mellor (2012), the green economy, also known as the sufficiency economy, operates on the principles of social justice and sufficiency, in which the economy is tied to ecological sustainability. Production of goods and services is limited to what is necessary to meet human need, rather than consumption for its own sake, thus allowing humans and other species in the natural environment to flourish. Social justice is employed to ensure sufficiency for all, with equal access to resources. Mellor (2012) asserts that the co-operative principles are compatible with this system, such as co-operation between co-operatives in addition to the,

“... commitment to the provision of pure and unadulterated food, economic democracy and the limitation of the role of capital” (p. 6).

According to Vieta and Lionais (2022), co-operatives have demonstrated a strength in managing environmental crises, such as “adequately organising a community’s control over natural resources or alternative power generation” (p. 9). Moreover Cheney et al. (2023) argue co-operatives “can lead societies in an ultimately more satisfying and sustainable direction” (p. 158). Through Galactic’s worker co-operative model—including engagement with the community—as well as its commitment to sustainability, it can contribute to making a difference at the local and state levels.

SOCIAL CONTRIBUTION

Co-operatives flourish in environments of high social capital (Mazzarol et al., 2014). Although social capital is difficult to measure, it refers to the interrelationship between people at individual and group levels, encompassing the concepts of trust, reciprocity, and networks.

For co-operatives, trust between members and the co-operative is critical to its long-term sustainability and for the development of social capital. Trust exists at a member-to-member level, is supported by governance and management systems which guide its operations and is reinforced by the history and culture of the co-operative (Mazzarol et al., 2014).

An individual’s trust in an organisation involves the propensity to trust, perception of existing member trustworthiness, the perceived risk associated membership, how risk is managed amongst members, and the outcomes, or benefits, from membership (Mazzarol, 2024). Perceived trustworthiness is impacted by behaviours and values of integrity, benevolence, and the effectiveness of members and the overall organisation (Mazzarol, 2024).

It is clear from Galactic’s history so far that trust plays an integral part and is reflected in employee’s overall satisfaction with working at the Co-operative and lack of burnout compared to IOFs despite how hard individuals work and the resource constraints of being a SME. One employee emphasised the positive atmosphere, in which everyone focused on contributing, being

nice and treating each other well. Moreover, the opportunity for job crafting improved workplace well-being.

Reciprocity between members and between the co-operative and its members can take the form of direct, indirect, and spatial reciprocity (Mazzarol et al., 2014). Direct reciprocity refers to when individuals give and get in response to their actions.

Notably, according to Puusa et al. (2016), a primary starting point for the worker co-operatives they researched was individual employment and “testing one’s own business idea” (p. 26). However, this form of tit-for-tat reciprocity can risk the financial stability of the co-operative, and must be carefully mediated (Puusa et al., 2016). Indeed, although Galactic has had considerable success in their workers’ innovations, there have also been challenges such as the longevity of Svelto Bikes.

Indirect reciprocity is where an individual gives without receiving a direct benefit, however, retains some form of benefit indirectly such as enhanced reputation (Mazzarol et al., 2014). A sustainable co-operative is one which expresses a willingness to provide benefits without the expectation of direct reciprocity (Mazzarol, 2024). Also known as the theory of reciprocal altruism, this “suggests that individuals will be happy to accept indirect reciprocity in return for achieving good standing and respect so that they can subsequently call upon this goodwill to secure rewards from the community” (Mazzarol, 2024, p. 72).

An example of this is the shift in mindset experienced by one of Galactic’s members, Joel Maher:

“Working in a Coop has definitely shifted by priorities on where to put my time and efforts. I used to have a mindset of ‘What can I get out of this?’ or ‘What is this doing for me?’ and not partaking in events further than participating. As explained above, for the last 4 years I now have the mindset ‘How can I help others?’ and look into how I can make things better for others” (J. Maher, 2025).

Lastly, spatial reciprocity refers to the situation in which an individual can benefit from geographic proximity to a community. Indeed, stable, close-knit communities which have low member turnover are more likely to develop co-operative behaviour than those with highly transient or unstable communities (Mazzarol et al., 2014). Galactic have benefited from their connection to Victoria Park. However, this is due to the Co-operative’s consistent commitment to providing services and taking part in the community’s initiatives.

Effective networks are necessary for a functioning co-operative. Indeed, there are three interconnected layers at the enterprise level. Firstly, the production network layer is a vertical supply chain which links the co-operative to suppliers and customers. This supply chain informs the ways in which the co-operative can deliver value to its members. Galactic utilises its strong customer relations to ensure the longevity of their client base, even when managers of one laboratory move to another.

The second horizontal layer is the resource network, a series of complimentary actors providing the co-operative with a variety of supports. Although the only worker co-operative in WA, Galactic maintains a network of worker co-operatives in Australia. In particular, information is shared

between Galactic and the eastern states' worker co-operatives (K. Biondo, 2024). Moreover, their connections with Co-operatives WA and BCCM provides opportunities for support, particularly in generating new knowledge about resources and governance. Notably, Kate Biondo has been strongly involved with the New Economy Network Australia to get co-operatives more well-known. However, due to time and capacity constraints, she could not continue, saying "It just takes energy, commitment. I had to give up some stuff" (K. Biondo, 2024).

Finally, the social network layer consists of interpersonal relations which take place between people (Mazzarol et al., 2014). The social network layer can include connections and contributions to community. This was discussed under the MVP analysis section. Additionally, concern for community as a co-operative principle reflects the difference between co-operatives and IOFs, in which the latter does not require "moral obligation to community" to be a driving force for decision-making (Gupta, 2014, p. 101). Furthermore, according to Cheney et al. (2023), this principle implies commitment starts with serving a co-operative's members and then widening its concerns and interests based on the specific ways and level of depth that members discern.

Galactic makes considerable contributions to the community, not only through individuals' volunteering and not-for-profit efforts, but also through the Co-operative's mission and values of connection/collaboration and sustainability. Some examples of the Co-operative's contribution to community include regularly holding meetings and AGMs at local cafes, adopting a street and regularly cleaning it, advocating for recycling in their shire, and the Repair Lab. The latter involves a free workshop where community members can bring their broken technological devices to the Co-operative to be fixed. This means that individuals don't have to spend additional funds to replace items and the damaged goods are prevented from going to landfill. As Andrea Biondo describes,

"We provide services to laboratories and those services we can provide to as part of our outreach programme with Repair Lab, for example, we like to go out and fix people's stuff, because it's fun to do. And everyone gets a good feeling from doing it. We just couldn't do that if we were not in control of the choices that we make from day-to-day about how the business runs. Now if you've got some manager who's focused on the bottom line and nothing else, they're sure as hell not going to dedicate resources to connect into community and doing stuff for free." (A. Biondo, 2024).

In addition to, trust, reciprocity and networks, social capital fosters information sharing to ensure people have equal access to information which is not always guaranteed with a free and open market (Mazzarol et al., 2014). Co-operatives can address this by ensuring members have access to information so that those which may be excluded from such knowledge or resources have access to them. According to Dufays et al. (2020), co-operatives provide education and training to workers so they can effectively contribute to the development of the co-operative, and to the general public on the nature and benefits of co-operation. Such efforts are challenging for small and medium co-operatives due to limited resources and influence. Nevertheless, Galactic has made considerable effort to educate the industry sector and local community on what a co-operative—moreover, a worker co-operative—is and the benefits they can provide to the community.

Reflecting on his experiences of co-operatives so far, Andrea Biondo stated,

“As a founding member it has been very satisfying to oversee the transition from a sole proprietorship to a co-operative. Living a life of satisfaction, with few regrets, is perhaps the greatest impact one can hope from a good working life. I observed that this structure not only enhanced collective problem-solving but also provided more meaningful life satisfaction for team members. The co-operative model inherently involves navigating the complexities of collective decision-making and maintaining equitable participation. My experience suggests that, despite these challenges, the co-operative structure can lead to meaningful collaboration and a positive workplace environment” (A. Biondo, 2025).

KEY LESSONS FROM THE GALACTIC CO-OPERATIVE (WA) LTD CASE

The history of the Galactic Co-operative provides an example of how a newly established worker co-operative can overcome many challenges and navigate its way to stability and growth. It is a case that offers important lessons for worker co-operatives not only in Australia but also in other countries.

In summary, the key lessons from The Galactic Co-operative (WA) Ltd case are:

- Reflecting the philosophies of other worker co-operatives such as Mondragón, Galactic sees the worker as a person from a holistic point of view, providing work which is meaningful, interesting, and aligned with democratic values (Preluca et al., 2022). It is clear from Galactic’s members and employees that the workplace culture, with its values of democracy, non-hierarchy, sustainability, and collaboration among others, is impactful and a major draw for joining the Co-operative.
- Referencing the research literature on worker co-operatives, Galactic has struggled to maintain and grow employment due to its focus on meeting worker interests and income (Altman, 2010). Membership as ownership of the Co-operative can be a useful incentive. However, it does not guarantee that a member will remain. This can impact the company significantly, particularly when the worker co-operative is small in size and, in Galactic’s case, must adhere to minimum membership requirements under legislation, e.g., *Co-operatives Act 2009 (WA)*. This project was unable to interview many of Galactic’s former employees and members directly, therefore, the reasons why many individuals made the decision to leave the Co-operative, whether members or not, is unclear. However, it could be due to the strains of being a small and fairly young business, or the relatively strong growth in the WA economy of this time period, and the high demand for skilled and experienced workers.
- According to academic research, it is common for worker co-operatives to have member and non-member workers to meet the demands of the industry and the co-operative and/or due to a difficulty in providing value to members beyond the value of employment. However, as Patmore et al. (2024a) warn, this can break down the value link between ownership and membership, particularly if those employed who are not members get as much decision-making rights as members. Galactic has both member and non-member



employees and have struggled to attract membership from employees once they have fulfilled the criteria for membership.

- Despite scholarly assumptions that worker co-operatives cut jobs and output during times of crisis, during the COVID-19 pandemic Galactic was able to retain workers and be just as productive due to new client opportunities from the eastern states as well as governmental funds. Moreover, during the early years of the Co-operative, Galactic underpaid the Governing Fellows. This lends credence to scholarship which argues worker co-operatives are more likely to cut pay during times of crisis than jobs to ensure the survival of the co-operative (Puusa et al., 2016; Pérotin, 2017; Dow, 2018; Bastida et al., 2022; Preluca et al., 2022).
- Galactic's readiness to engage with external organisations and coaches in the development and review of the Co-operative's purpose and MVP, among others, demonstrates a commitment to the co-operative model, to maintaining connections with the co-operative sector and WA businesses, as well as to flexibility and adaptability, which ensures Galactic's sustainability in the long-term.
- The lack of awareness and understanding of the co-operative model within the wider community has a considerable impact on the functioning of Galactic. It makes it more difficult for them to find employees and members, to generate funding (e.g., via banks), and to access resources. Further efforts for a broader initiative at the state and national levels which advocates for and educates the public on the co-operative business model and worker co-operatives in particular is needed (Puusa et al., 2016).
- Lastly, lack of governmental support, whether it be local or state level, is an ongoing frustration for the worker co-operative movement in Australia and is reflected by the experiences of Galactic. Although governments express support for co-operatives, there is little follow through. This can result in initiatives collapsing, as exemplified with the NSW and Victorian worker co-operatives in the 1970s to 1980s (Patmore et al., 2024b).



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APPENDIX A: GALACTIC CO-OPERATIVE WITHIN THE CME RESEARCH FRAMEWORK

Influencing Factors	Application to Galactic Co-operative (WA) Ltd
<i>Systems-level inputs</i>	
Social co-operation	<p>Galactic had access to vendor/promotor capital to transition from a sole trader business to a co-operative. Support from organisations and peak bodies like Co-operatives WA allowed for sharing of knowledge and skills.</p> <p>Through Andrea and Kate Biondo’s research into worker co-operatives, and the interest in this business model by other Governing Fellows and members, Galactic was able to mobilise into a co-operative.</p> <p>The motivations for Galactic to become a co-operative were predominantly ideological with additional shared values, such as collaboration and democracy. The desire for an alternative structure was based around financial needs as Galactic wanted better wages and working conditions than they perceived an IOF could provide. Members and Governing Fellows were inspired by social democratic theories and the desire to make a difference, as well as expressing a need to be treated as a human being rather than a “wage slave.” Galactic members perceived this to be achievable through the co-operative business model.</p>
Role of government	<p>The <i>Co-operatives Act 2009</i> (WA) legislation impacted Galactic with the requirement for five active members. This caused problems in the early years as those who became members would have been better suited as employees due to a lack of shared values and commitment to cooperativism. This may cause problems in the Co-operative’s future as they currently have a total of six members. If two people decide to cease their membership (e.g., retirement as was the case with a previous member), Galactic could once again struggle to meet the requirements of the legislation and risk repeating the issues of their first year.</p> <p>During COVID-19 the government played an impactful role with cash flow boosts from the JobKeeper scheme.</p> <p>Overall, some Galactic Governing Fellows expressed a general feeling of being unsupported by government and regulatory frameworks.</p>



	This is particularly the case for Galactic’s innovative solutions to local and industry related issues.
Industry structure	<p>Galactic is primarily in the laboratory services industry. Over time, the Co-operative has expanded its products and services, working in areas of broadcasting, telecommunications, and sustainability. This reflects their entrepreneurial and innovative focus.</p> <p>Galactic has noted they have competition from eastern states organisations, in addition to multinational IOFs, which can impact their business through their capacity to build their client base. The COVID-19 pandemic had a positive impact on the Co-operative by bringing in new clients. Another draw for clients is Galactic’s local and community mindset.</p> <p>Galactic has found it difficult to attract others to invest—particularly banks—due to a lack of knowledge and awareness of the co-operative model, thus investment has primarily come from within the Co-operative.</p> <p>Svelto Bikes faced considerable barriers for being too early to market, unable to build an economy of scale, and then faced with considerable competition from larger companies like Bosch and Atala.</p>
Natural environment	Environmental factors have not deeply affected the functioning of the Co-operative. However, one major impact was the COVID-19 pandemic. Despite the impact of sick days, the Co-operative continued running due to being considered an essential service.
<i>Enterprise-level factors</i>	
Purpose	<p>Galactic’s purpose is: “To embody our vision actively and authentically. We strive to lead in fulfilling our vision, making prudent use of our resources, and fulfilling our purpose and fiduciary duties. Each day, we dedicate ourselves to preserving the enduring Galactic vision and acting as responsible stewards to guide Galactic on its path towards sustainability, realising our vision, and upholding our core values.”</p> <p>In addition, the draft Constitution states: “As a co-operative, our work practices are inherently local and community minded. Our cooperative is about providing a stimulating place of work and livelihood to its workers in the local community.”</p>
Profit formula	For worker co-operatives, surplus is distributed based on the patronage of work input, such as working hours and invoicing.

Co-operative Enterprise Research Unit (CERU)

Galactic Co-operative Ltd: Working for a Scientific Solution since 2017



	<p>Although Galactic is a distributing co-operative, as of early 2025, they have not distributed surplus to members. Free-cash-flow has gone toward paying wages due to being a service business. Moreover, the annual Treasurer Reports highlight how wages, super, and employee benefits are higher than they should be.</p> <p>In early 2025, Galactic developed their distribution model, creating distribution calculator based on the Drake equation (see p. 78). Galactic stipulates distributions is only possible for individuals whose membership is current, complete, unsuspended, and deemed to be in good standing as determined by majority Governing Fellow vote</p>
Processes	<p>Galactic has focused on providing sustainable services to the local community and laboratories. This has resulted in the development of innovative solutions like Sealed PC and Sustainability as a Service. To ensure the delivery of these services, the Co-operative generated workplace well-being and governance policies programs early on which are becoming increasingly relevant with Galactic’s growth and development.</p>
Resources	<p>Galactic have been able to access a strategic network since its beginning, including through peak bodies like Co-operatives WA, accounting services from Adam Binks prior to his employment and membership, local governments, and the various business strategy programs the Co-operative took part in. However, Galactic are also impacted by the lack of awareness and knowledge of the co-operative model, particularly worker co-operatives. More broader understanding of this model in the general public, organisations, and industries would allow for further strategic opportunities at local, state, and national levels.</p> <p>Galactic’s resources have been impacted by their small size. Much of the work is the responsibility of few people, and this can put strains on the running of the business when individuals are off sick or on leave. Moreover, each person is required to perform multiple roles. Such demands on individuals can cause significant issues of work-life balance.</p> <p>Galactic’s physical infrastructure has been generally effective in ensuring productive work. The Co-operative’s infrastructure is currently uncertain with their pursuit of new permanent premises. Due to the Svelto Bikes venture, the Co-operative provides members with electric bikes for daily commuting and a work vehicle for sustainable transportation.</p>



Share structure	To become a member, after one year of employment, an individual pays a \$4000 one-off payment split between cash and sweat equity.
Governance	<p>Galactic had considerable difficulty maintaining five directors—or Governing Fellows—and several within the Co-operative argued this was due to the selection process not being good enough, resulting in some individuals on the Board that should not have been involved due to their individualistic rather than cooperative focus.</p> <p>Despite these issues, their decision-making processes are effective and democratic, as exemplified with the Wage and Commission Review.</p> <p>Galactic have a rigorous employment process, ensuring new workers share values of co-operatives and Galactic’s emphasis on sustainability. Although they are select, the Co-operative’s has also managed to ensure a level of diversity in hiring practices, particularly for women and LGBT+ individuals.</p>
Member Value Proposition	<p>Galactic’s draft Constitution discusses their MVP, including the roles of patron, investor, owner, and community member (see Table 3).</p> <p>Despite Galactic’s clear articulation of their MVP and the roles which members play with the four hats, the Co-operative has struggled since their foundation to define what their value is for members. This is predominantly due to being a worker co-operative, which includes employees as well as members. Trying to delineate the value difference between employment and membership has been difficult, however, reflects similar experiences of international worker co-operatives.</p> <p>With Galactic intending to distribute dividends in 2025, the Co-operative’s capacity to incentivise membership may result in an increase in interest on behalf of employees who have served the required qualifying period to apply for membership.</p> <p>As a co-operative which transitioned from a sole trader, Galactic has struggled with the issue of legacy building. The current Governing Fellows have played a massive role in shaping the Co-operative since its foundation. However, it has been a challenge to comprehend what Galactic will look like once the founding Governing Fellows and members retire.</p>



Member-level factors

Patron	<p>Payment of Professional Association subscriptions and attendance at co-operative events, training, and outings are included as a member benefit.</p> <p>Members have access to electric bikes for their daily commute, promoting eco-friendly mobility. They can also leverage the benefits of a dedicated work vehicle during business hours, ensuring efficient and sustainable transportation tailored to work needs.</p> <p>To receive dividends.</p>
Investor	<p>Have a percentage ownership of the business and contribute to the control of our capital. Invest in your employment and professional development.</p> <p>Galactic makes democratic decisions about distributing surplus funds. The Co-operative focuses on setting attainable goals, utilising effective forecasting, and ensuring transparent cash flow communication to maintain a healthy financial position. The annual distribution is decided and rewarded at the AGM.</p>
Owner	<p>One share, one-only Member vote. The Co-operative embraces a flat structure, allowing for flexibility in work arrangements. Galactic prioritises clear roles and outcomes, implements processes to ensure high-quality products and services, and emphasises knowledge succession for their team's continuous growth and success. The Co-operative equally participates in managing itself, setting policies, and making decisions. One vote, one value, thus everyone has an equal say.</p> <p>The Co-operative prioritises values, ensuring they are communicated and upheld. It fosters a culture that values the well-being of the team members, encourages authentic leadership, embraces new ideas, recognises individual talents, welcomes constructive criticism, supports training and development, and ensures adequate rewards for the valuable work contributed. Galactic provides the opportunity to assist in areas of interest and direct the business as it grows.</p> <p>“Wield real power—power to do good” (Galactic 2024h, p. 7)</p>
Community member	<p>The Co-operative’s policies and programs sustainably contribute to the development of the local community. They provide a space that connects members' skills and their work with the community.</p>



Systems-level outputs

Economic capital

Galactic provides employment which emphasises innovation and the pursuit of individuals' passions. Opportunities are given to interns, employees, and members to develop scientific and sustainable solutions to problems in the community. These included issues of commuting, rapid degradation of laboratory equipment, unnecessary scientific and technology waste, workplace well-being, and adherence to legislation for SMEs. Moreover, they provide long-term meaningful work where an individual's labour is valued, and their voice is heard.

The most significant economic contribution the Co-operative has made to WA is through their laboratory services. In particular the Sealed PC and repairs—such as through the use of 3D printing—have considerably positively impacted Galactic's clients and reduced landfill.

Galactic's commitment to sustainability has and will continue to have considerable impacts on the state.

Social capital

Trust plays an integral part and is reflected in employee's overall satisfaction with working at the Co-operative and lack of burnout compared to IOFs despite how hard individuals work and the resource constraints of being a SME.

The Co-operative's strength lies in providing direct reciprocity to members, allowing them to create meaningful work for themselves, and indirect reciprocity in their commitment to the community and helping others. Indeed, Galactic makes considerable contributions to the community, not only through individuals' volunteering and not-for-profit efforts, but also through the Co-operative's mission and values of connection/collaboration and sustainability. Some examples of the Co-operative's contribution to community include regularly holding meetings and AGMs at local cafes, adopting a street and regularly cleaning it, advocating for recycling in their shire, and the Repair Lab.

APPENDIX B: GALACTIC CO-OPERATIVE (WA) LTD DIRECTORS AND EXECUTIVES

Galactic Co-operative (WA) Ltd Chairpersons

<i>Term</i>	<i>Name</i>	<i>Occupation</i>
2017-Present	Andrea Biondo	Physicist

Galactic Co-operative (WA) Ltd Directors / Governing Fellows (members of the Board)

<i>Name</i>	<i>Term</i>	<i>Occupation</i>
Andrea Biondo	2017-Present	Physicist, Chairman
Kate Biondo	2017-Present	CEO, Secretary
Dr Kate Ringvall	2017-Present	Academic, Policy and Program Development, and Sustainability
Caleb Tang	2017-2018	Mechanical Engineer
Bryn Pitman	2017-2018	Treasurer, Systems and Network Engineer
Kat Sherwin	2019-2020	Engineer and salesperson
Adam Binks	2019-Present	Accountant, Treasurer

Galactic Co-operative (WA) Ltd Executive Officers

<i>Term</i>	<i>Name</i>	<i>Job title</i>
2017-2024	Kate Biondo	Chief Executive Officer and Secretary
2024 - Present	Kate Biondo	Chief Executive Officer
2024 - Present	Dr Kate Ringvall	Secretary

APPENDIX C: GALACTIC CO-OPERATIVE (WA) LTD MEMBERS AND EMPLOYEES

Galactic Co-operative (WA) Ltd Members (excluding Governing Fellows)

<i>Name</i>	<i>Term</i>	<i>Occupation</i>
Brad Hayden	2019-2020	Engineer
Stephanie Black	2019-2021	Governance, Workplace Health and Safety
Joel Maher	2023-2025	Senior Service Engineer
Fiona Darcey	2024-2025	Workshop Engineer

Galactic Co-operative (WA) Ltd Employees (excluding members)

<i>Name</i>	<i>Term</i>	<i>Occupation</i>
Claye Jensen	2017-2018	Initially an intern. Service Engineer
Isabel Boots (Biondo)	2017-2021	Technology Officer, Cybersecurity
Monty Harding	2017-2017	Originally an intern.
Sharon Boxall	2017-2018	Subject Matter Expert, Clinical Nurse Consultant.
Aileen Swarbrick	2018-2018 2022-2023	Administration Officer
Christian Czarniak	2019-2020	Initially an intern. Service Engineer.
Artaza Naeem	2020-2021	Field Service Engineer
Nicole Binks	2020-Current	Bookkeeper
Ian Wilkins	2020-2023	Field Service Engineer
Ben Rolender	2022-Current	Field Service Engineer
Susie Staton	2022-2022	ADAPT by Design Business Associate. Human Resources and Workflow.
Shalom Bajeh	2023-Current	Employee Relations
Dustin Holmes	2023-2025	Field Service Engineer
Ben Grassi	2024-Current	Mechatronics Engineer
Luisa Naranjo	2024-Current	Product, Logistics, Procurement and Fulfilment Coordinator

APPENDIX D: GALACTIC CO-OPERATIVE (WA) LTD HISTORICAL TIMELINE 2014-2025

<i>Dates</i>	<i>Summary of events</i>
Pre-Establishment	<p>2014: Andrea Biondo created the sole trader organisation Galactic Scientific which provided repairs and services of scientific equipment to laboratories in WA. Began considering the co-operative model. Svelto bikes was generated by intern Benjamin Starling.</p> <p>2015: First Svelto Bike sold.</p> <p>Claye Jensen joins the sole trader as an intern and works on the Svelto Bikes and Sealed PC projects. Ben Starling left before Galactic became a co-operative.</p>
2017-2019	<p>2017: Galactic Co-operative established with five signatories Andrea Biondo, Kate Biondo, Dr Kate Ringvall, Bryn Pitman, and Caleb Tang. The first AGM was held on 8th November. Offices located on Niagara Cove in Bentley.</p> <p>2018: Caleb Tang and Bryn Pitman resigned from the Co-operative. The Co-operative introduces Sweat Equity as a part of its membership affordability. The Co-operative officially purchased Galactic Scientific.</p> <p>2019: Kat Sherwin and Adam Binks became Governing Fellows (Directors). Location of office changed from Bentley to President Street in Welshpool. The Co-operative divested in Svelto Bikes and began the Sealed PC program.</p>
2020s	<p>2020: COVID-19 pandemic impacts the Co-operative's cash flow. However, the federal government's JobKeeper Payment provided economic relief in addition to work contracts from the eastern states.</p> <p>2021: Kate Biondo joined the Co-operatives WA board as a Council Member. The Co-operative continued to receive Federal Government COVID-19 relief measures.</p> <p>2022: Dr Kate Ringvall began developing Sustainability as a Service with the Climate Risk Audit tool to help SMEs. The issue of developing the Co-operative's purpose and member value proposition was raised.</p> <p>2023: Launched the Co-operative's website. The Co-operative completed paying off the loan obligation to Andrea Biondo for the purchase of Galactic Scientific and its client base. They also conducted a wage and commission review with all staff and decisions were effective 1st January 2024.</p> <p>2024: The Co-operative finalised its Membership Policy, including refining its member value proposition. Galactic further developed its Constitution to reflect the new Membership Policy, which would be accepted at the 2025 AGM. The Co-operative was actively seeking a new, permanent location for its offices due to rental increases.</p>



2024: Dr Kate Ringvall replaced Kate Biondo as Secretary.

2025: The Co-operative finalised its Distribution Policy. Two members left the Co-operative, reducing its membership to four.

About the authors

Amber van Aurich is a Research Officer at the University of Western Australia (UWA) where she is engaged in the UWA Business School supporting the Australian Research Council (ARC) Linkage Grant project investigating the economic and social contribution of the co-operative and mutual enterprise (CME) sector to Western Australia. She holds a Bachelor of Arts with First Class Honours from Edith Cowan University majoring in History, Politics, and International Relations. She is currently a PhD Candidate at UWA School of Humanities where she is conducting a mixed methods study on identity-based spaces. Amber is experienced in qualitative research methodology, local history, and feminist theory. Her research interests encompass social movements, women's and LGBT+ history, as well as feminist theory and methodologies.

Dr Bruce Baskerville is an APDI Post-Doctoral Research Fellow at UWA where he is engaged with CERU via the UWA Business School, and the UWA Centre for Western Australian History. A public historian, Bruce grew up on Western Australia's Batavia Coast amid stories of Dutch shipwrecks and convict ruins, and the windswept awe of the Dongara sandplains and Abrolhos Islands. For many years he has researched the ways in which old institutions are adapted and naturalised in new places, from the Crown to building styles, shared histories to commonage systems. This has given him an abiding interest in communal and co-operative models of self-governance and their historical roots.

Tim Mazzarol is a Professor Emeritus and Senior Honorary Research Fellow in Entrepreneurship, Innovation, Marketing and Strategy at UWA and an affiliate Professor with the Burgundy School of Business, Groupe ESC Dijon, Bourgogne, France. He is also the Director of the Centre for Entrepreneurial Management and Innovation (CEMI), an independent initiative designed to enhance awareness of entrepreneurship, innovation, and small business management. He is also the founder Director of the Co-operative Enterprise Research Unit (CERU), a special research entity for the study of co-operative and mutual enterprises (CMEs) at UWA. In addition, he is a founder Director and Company Secretary of the Commercialisation Studies Centre (CSC) Ltd., a not-for-profit mutual enterprise focused on advancing best practice knowledge of commercialisation. Tim is also a Qualified Practising Researcher (QPR) as recognised by the Australian Research Society (ARS). He has around 20 years of experience of working with small entrepreneurial firms as well as large corporations and government agencies. He is the author of several books on entrepreneurship, small business management and innovation. He holds a PhD in Management and an MBA with distinction from Curtin University of Technology, and a Bachelor of Arts with Honours from Murdoch University, WA.