



**Smart Transformation
Readiness Assessment**

We acknowledge the traditional owners of the lands which the communities of Dysart and Moranbah call home, the Barada Barna people, and pay our respect to their elders past, present and emerging.

The traditional lands of the Barada Barna people centre on the headwaters of the Isaac River and run west to the Denham Range. The southern frontier extends to Cotherstone and the eastern region flanks the western boundaries of the Barada.

Their continued stewardship of these lands over thousands of years is evidence of the region's history of resilience, strength and imagination.

OPPORTUNITIES

Identify pathways
to new jobs

SELP DETAIL

Provide training
for jobs



FUTUREYE

Futureye Pty Ltd is a multi-disciplinary professional services firm that works with communities, governments and corporations to enable them to solve issues together proactively. Established in 2002, Futureye has worked across the world from Australia, Europe, the United States, United Kingdom, Europe and Africa, demonstrating the effectiveness of its innovative approach to resolving real dilemmas and building shared value.

The firm has a successful history working in Australian regional centres in all states and territories. Its work has included transformation across all sectors including mining, energy, water, agriculture, forestry, fishing and manufacturing. It has deep expertise in the challenges of the Fourth Industrial Revolution (4IR) through its work with government departments and agencies as well as companies such as technology and extractives. Futureye is the facilitator of the Smart Transformation Project in Dysart and Moranbah and the author of the Smart Transformation Readiness Assessment.

Front cover:
Phil Harms, PIMS Engineering,
member of the Moranbah Smart
Transformation Advisory Council.



BHP Mitsubishi Alliance

BHP Mitsubishi Alliance (BMA) is Australia's largest coal producer and supplier of seaborne metallurgical coal. Owned 50:50 by BHP and Mitsubishi Development, BMA operates seven coal mines in Queensland's Bowen Basin, and owns and operates the Hay Point Coal Terminal near Mackay.

Established in 2001, BMA strives to be a valued partner in the communities in which it operates, and seeks to foster meaningful, long-term relationships that respect local cultures and create lasting benefits.

BMA recognises that the fourth industrial revolution (4IR) is a global challenge that will create both impacts and opportunities. For this reason, they chose to support the Smart Transformation Project in Dysart and Moranbah through both financial support and expertise. BMA's Saraji Mine's General Manager sits on the Dysart Smart Transformation Advisory Council and Goonyella Riverside Mine's General Manager sits on the Moranbah Smart Transformation Advisory Council.

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The 4 Industrial Revolutions

1



1784

Mechanisation, steam and water power

2



1870

Mass production and electricity

3



1969

Electronic and IT systems, automation

4



2020

Cyber physical systems

Preface



We are launching this readiness assessment as the world is in the grip of the COVID-19 health crisis. Although we are in a new and rapidly changing environment, we recognise the need to drive solutions on the issues identified by the community but we must also balance these with emerging challenges particularly in regards to digital technology readiness.

Governments, businesses and communities globally are grappling with the speed and scale of the Fourth Industrial Revolution (4IR). Queensland communities are already seeing the impacts of the 4IR, in the rapid rise of self-service retail checkouts, electronic banking and driverless/driver-assisted transport systems. The proposed implementation of autonomous haulage in the state's resources sector is a further example of the changes that will impact our society.

Multiple industrial shifts have already transformed society. The First Industrial Revolution introduced mechanisation, water and steam power which brought significant benefits, but at great cost. The transformation was not undertaken in a purposeful manner; the downside of an unplanned process was that those who bore the costs did not necessarily benefit from the new opportunities.

The Second Industrial Revolution saw tremendous advances in access to energy and, again, while there were benefits, costs were significant.

The Third Industrial Revolution ushered in electronic and information technology systems, precipitating the beginning of a decoupling of productivity and the workforce, and the rise of globalisation.

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Now we enter the 4IR with, at its core, cyber-physical systems that connect the internet of things and entirely new interconnections between systems and people. This technology continues to develop at an unprecedented scale, dramatically affecting the 'way we work'.

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Now we enter the 4IR with, at its core, cyber-physical systems that connect the internet of things and entirely new interconnections between systems and people. This technology continues to develop at an unprecedented scale, dramatically affecting the 'way we work'.

Key barriers to this wide-scale, unprecedented change, are in fact mostly 'human'. Therefore, only a human-centred process can move people from 'distrust and uncertainty' to 'trust and a common vision'. Shaping our future in the 4IR demands putting people first – engaging them and empowering them in the co-design of a roadmap for their 4IR journey.

For example, the decision in November 2019 by the Goonyella Riverside Mine's General Manager to introduce autonomous haulage, heralded the arrival of the 4IR – its impacts and its opportunities – in the Bowen Basin. BMA committed to no forced redundancies at the site as a result of the decision to introduce autonomous haulage. It also said that it would provide appropriate training, development pathways and an on-site automation control room. However, BMA went further. BMA recognised its broader obligation to the region, supporting the critical Smart Transformation process that has enabled the community to invest in the change in mindset, skills and capability required for genuine, long-term and successful 4IR implementation.

Futureye developed and facilitated a unique process to assist the communities of Dysart and Moranbah to develop a shared vision; to validate the actions required to fulfil the vision; and engender a sense of responsibility for the vision's delivery. Essentially, it's a 'democratising' engagement process. It allows the community to break from the 'past-present' loop that defines the present in terms of past practices and skills. Rather, the present is recast in terms of a shared vision of the future in which the community contributes to positive change.

Rather than simply using technology to improve current system efficiencies, the process also encourages everyone to understand the change in standard behaviour that is inevitable. This is a mindset shift from 'business as usual' to sustainable, technological innovation.

Technology will redefine our future. Government, businesses and individuals must be encouraged to collaborate and innovate, driving agility in our education systems, flexibility in our jobs market, and responsiveness to new opportunities and change. Working together, leaders and communities can build a common, positive future, and allow technology to support their ambitions.

These opportunities become even more critical when viewed through the lens of the current COVID-19 situation. Diversification of regional economies, through to the vital role community wellbeing initiatives will play through the crisis and beyond will be driven and delivered through 4IR initiatives.

This document provides an assessment of the current situation for two Queensland communities, and a plan for engagement and action to address a future being impacted by the 4IR. This document highlights the involvement of the community to develop a plan of action for the community.

KATHERINE TEH

Managing Director,
Futureye.

able to
contribute
and engage

**"A lot of people were able to contribute and engage,
not just with the process but with each other.
This is a start, this is only a start."**

ROYCE BAILEY / STAC MEMBER

Executive Summary

The Smart Transformation Readiness Assessment, including the Community Roadmap, reflects the key findings of a critical engagement and planning project undertaken with the communities of Dysart and Moranbah within Queensland's Bowen Basin. The Project was largely completed prior to the current COVID-19 health crisis, however the Roadmap articulates a plan forward for projects related to connectivity and community well-being. The importance of implementing these types of projects has further increased given the challenges caused by COVID-19.

The Impact of the Fourth Industrial Revolution (4IR)

Around the world, countries have begun to acknowledge and wrestle with the impacts and opportunities of the Fourth Industrial Revolution (4IR). In most cases policy makers have struggled to embrace the new concepts that accompany the 4IR, while facing real and immediate impacts of the scale and speed of unprecedented change. Often regulatory frameworks lag behind dramatic changes and, increasingly, debates focus on Artificial Intelligence (AI) and ethics, privacy and big data, autonomous vehicles and, of course, the future of work¹.

The 'future of work' has become a fundamental question and often there is a focus on technology as the 'fix all'; infrastructure as a safe bet for 'regional revitalisation', or job-shifting to sectors that may or may not possess a bright 4IR future. In many cases people's fear can be the greatest barrier to change².

There is a real danger that, without adequate investment in a structured dialogue, unplanned and *ad hoc* transitions implemented under pressure will lead to inefficient and ineffective change. A 'business as usual' mindset is destined to fail. Systems of work and business are fundamentally transforming as a result of the 4IR; so too must people.

The 4IR brings a real and immediate opportunity for leaders to 'step up', to break away from the tendency of 'retro-fitting' people into pre-determined job and industry outcomes established without genuine discussion during a time of rapid change.

To introduce positive change and new opportunities as we face the challenge of the 4IR will be confronting for leaders; it will challenge their current thinking, the way they usually respond.

As fear poses a significant psycho-social barrier to change, the response must address the underlying emotional factors that can stymie change. Ignoring people's entrenched emotions and long-practised habits while introducing change will lead to backlash, growing inequality and conflict.

If we are to rise as a community to meet not only the challenges of the 4IR, but to fully unlock its value-creation potential, whether that be in the form of new jobs, business or export opportunities – a critical feature of such a transition is a collaborative, democratising engagement process.

For example, AlphaBeta's *Staying Ahead of the Game*³ analysis of 30 types of technological innovation in mining, oil and gas, reveals a tremendous opportunity for Australia. By 2030, digital automation technologies could generate an additional \$65 billion in Gross Value Added for the mining, oil and gas sector.

At a time of great uncertainty, such a process would enable a necessary degree of control and resilience required to more gently ride the bumps in the road of a complex 4IR transition. Such a process supports the community, sensibly introducing people to 4IR challenges and opportunities, addressing their emotional barriers and building a 4IR vision that delivers a planned, thoughtful and 'people-centred' 4IR transition.

This is Smart Transformation. It's the engagement in and with the community to develop a clear understanding of the 4IR challenges and the possibilities for success in new endeavours. With the support of the community, the changes will be smart – and embraced. The human factor is required to enhance technology and minimise its risks to society. This process does more than simply emphasise community involvement in the awareness-raising and consultation stages (representative of a typical policy response). The Smart Transformation process goes further and deeper – actively identifying and addressing the communities' intuitive fears, and placing those fears at the centre of a proactive design, to ensure people are actively engaged in planning and controlling their own 4IR future.

The Opportunity

Dysart and Moranbah are major townships in the Isaac region in Central Queensland within the Bowen Basin, which contains the largest coal reserves in Australia. There are currently 92,000 jobs in the combined Mackay/Isaac/Whitsunday local government areas (LGAs). Both Dysart and Moranbah are 'mining towns', and in 4IR terms, largely dependent on a sector that is already being impacted by automation, both domestically and globally. However, in the *Staying Ahead of the Game* report, automation technologies will change the nature of employment within the mining industry in two key ways; while nationally up to 77,000 jobs may be impacted in 2030 as automation technologies undertake more of the "dirty, dull and dangerous" tasks, there will be 42,000 jobs created in 2030 as job roles shift to new roles such as programming autonomous mining equipment, and from increased competitiveness. Moreover, new jobs will emerge among suppliers with increased demand generating 63,000 additional jobs if the domestic supply chain successfully adapts as mining automates⁴.

The Fit to Other Local Processes

While Futureye, supported by BMA, designed and implemented the Smart Transformation process, engagement with Isaac Regional Council (IRC) was maintained throughout all phases of the project, given their role as the local government authority. All parties agreed that the primary project output – the Smart Transformation Readiness Assessment – would be a valuable input into the IRC's strategic planning process while also helping the local community prepare for 4IR.

A Smart Transformation

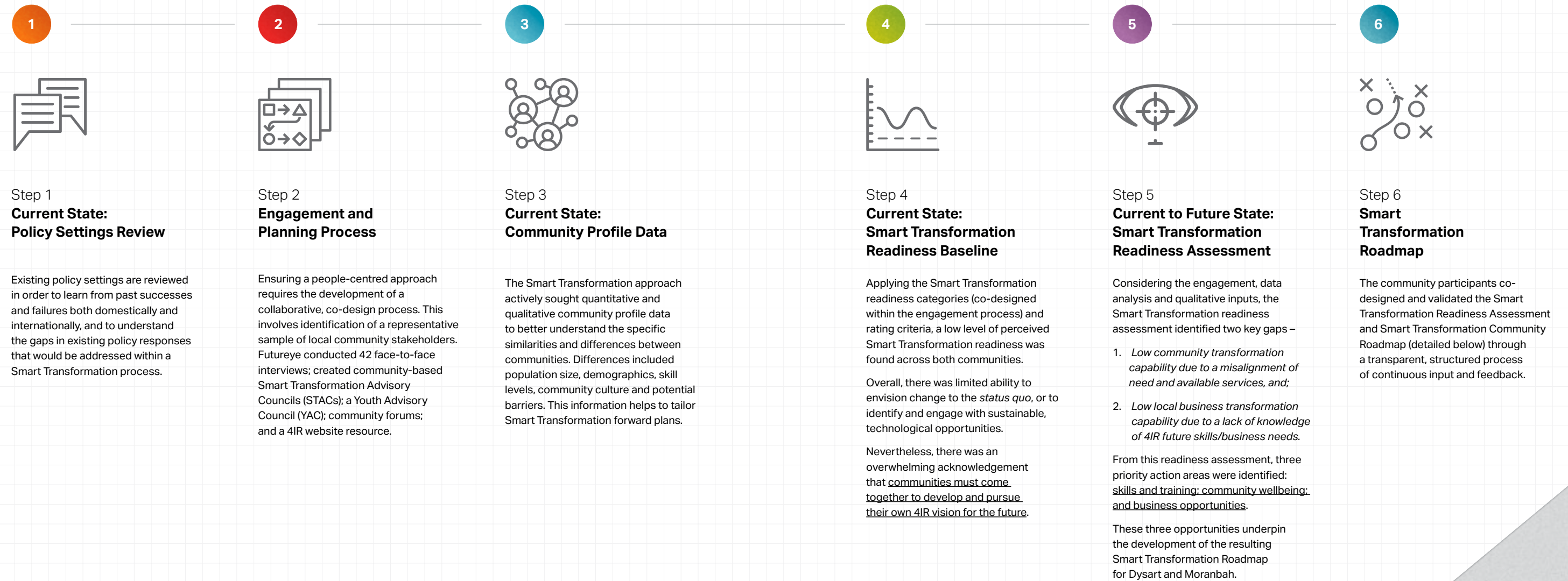
The Smart Transformation process is set apart from other transition models which rely on pre-4IR status quo models (the 'old' way of doing business or work) or that operate in a manner that is not socially acceptable (lacks social licence).

The impacts of 4IR are frequently characterised as 'stripping people out' of jobs and opportunities. The Smart Transformation process rejects that assumption, and instead offers a means to build a 'people-centric' 4IR future, focusing on unlocking value and opportunity.

Ultimately the process enables people to be ready and able to effect the necessary shift from the '**current state**' of how things are done, to the '**future state**' of how to adapt to and optimise opportunities within changing conditions.

STAC member and BMA Saraji General Manager Dan Iliffe at the Dysart Smart Transformation Community Forum.

This diagram summarises the six steps of the Smart Transformation process and are covered as separate sections in this report.



Smart Transformation Project Plan

The diagram below summarises the six steps of the Smart Transformation process into three phases:

Figure 1. Smart Transformation Project Plan




The roadmap, within the Smart Transformation process, allows the community to own its shift from the current to future state. It is hoped that this process will produce both economic and social value; empower people to feel able to proactively adapt to 4IR opportunities; and enable a confident 4IR future outlook.

Ultimately it will support the community as an input into local, state and federal Government planning processes that would detail actions required to future-proof these communities. Critically, the agreed Roadmap will provide a valuable, community-led input into the proposed Council-led planning process in 2020 and a guide for industries including agriculture, mining and services to respond to the community's changing needs.

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The roadmap, within the Smart Transformation process, allows the community to own its shift from the current to future state.

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"Smart Transformation has given people the opportunity to have a voice — it's brought all the people together in the same room at the right time."

RICHELLE TOSHACK / STAC MEMBER

*It's given people
the opportunity to
have a voice*



1 Current State: Policy Settings Review

KEY POINTS

- Key challenges of the Fourth Industrial Revolution (4IR) include economic/labour dislocation; increased use of autonomous technology; rising inequality and conflict; legal uncertainty; increasing distrust of political and other institutions.⁵
- Adequate investment in a structured social dialogue⁶ did not occur in previous industrial revolutions. The leaders who continued with a 'business as usual' mindset failed, while those who adjusted succeeded; even so, often people and communities did not benefit from the changes⁷.
- An unplanned, delayed or *ad hoc* approach will result in a chaotic and inadequate 4IR transition with insufficient community engagement where fear is the greatest barrier to change.
- As the existing structures of business and work transform, so too must people – in the way they approach problem-solving, identify opportunities and address challenges.
- An important first step towards this kind of transformation is the creation of a collaborative, democratising engagement process that is community led and trusted.
- In the current state, leaders at all levels and across institutions are not sufficiently engaged with communities, so that as changes occur there can be resilience to weather the inevitable kinks and setbacks as society transforms through the complex 4IR changes.

In developing the Smart Transformation process for Dysart and Moranbah, Futureeye undertook a high-level review of existing local⁸, state, national and global policy strategies in relation to the impacts of the 4IR. These challenges can be broadly characterised under six distinct headings:

- 1. Economic/Labour Dislocation**
Predictions vary with the World Economic Forum indicating over five million job losses in 15 major emerging economies by 2020. McKinsey studies suggest 50% of all work activities can be automated today;
- 2. Technological Autonomy**
Systems operating without direct human controls;
- 3. Environmental Impacts**
Managing changing societal expectations;
- 4. Social Justice**
Rising inequality and social unrest over the widening 'wealth gap';
- 5. Legal and Regulatory Uncertainty**
Lagging accountabilities for technologies;
- 6. Political/Institutional Breakdown**
Increasing levels of distrust leading to widespread protest and societal polarisation.

Despite the fundamentally systemic implications of the 4IR, current policy discourse continues to be characterised by a tendency to *status quo* responses and processes that are unlikely to address the level of change that will occur. Of these partial responses, three have dominated and shaped the policy debate in Australia:

Partial Response: Climate-Centric

In terms of a 'transformation' need, the concept that dominates both policy and academic discourse is the 'just transition' that has been developed as a response to the 'jobs vs environment' dilemma. While a key 'just transition' policy emphasises the need for 'democratic dialogue, consultation and collective bargaining',⁹ its emphasis on 'new green jobs and skills'¹⁰ and 'no job loss' assurances views low and high carbon sectors in isolation from the broader labour market shifts towards technology adoption.

This policy 'blind spot' risks consigning already vulnerable workers to short-term jobs and limit future prospects. Likewise, 'green sector-shifting' does not improve environmental and sustainable innovation outcomes. The failure to account for the present and future impacts of the 4IR, including environmental, raises serious questions about the ability of a just climate transition process to deliver on relevant re-skilling and jobs; the educational and entrepreneurial environment required for sustainable '4IR-proof' future industries; and, ultimately, societal trust and acceptance of a 'fit for purpose' transformation process.

Partial Response: Technology-Centric

Policy makers are focused on the technological changes and innovation being introduced by robotics, automation and AI. However, technology represents only one aspect of 4IR outcomes. For example, expert work streams are underway in Australia that are considering the issue of ethical AI, yet these workstreams do not bring the 'human dimension' into the early stages of policy development. This drives community concerns about technology within the broader 4IR context, raising questions about the types of jobs that are emerging.

Partial Response: Infrastructure-Centric

In terms of 'regional revitalisation', the emphasis on investment in physical infrastructure can often rely on 'top down' policies that lack sufficient community engagement and co-design in their development. Future 4IR growth opportunities and corresponding infrastructure investment, whether physical or more critically, social infrastructure, require region-specific collective community vision. Without full community engagement, 'top down' regional planning will not achieve successful infrastructure investments which deliver sustainable outcomes for the long term.

According to the Edelman Trust Barometer¹¹—an annual trust and credibility survey—83 percent of people are concerned about losing their job due to the gig economy, a looming recession and a lack of skills and automation. The existing level of public awareness of the changing 4IR labour market is being addressed at both state and national levels.

For example, in 2019 the Queensland state government agency, Jobs Queensland, conducted extensive research on future employment opportunities and the need to reskill the current workforce to respond to predicted changes. Its report “Future work, future jobs: Preparing Queensland for the evolution of work” made 18 key recommendations which, at the time of writing, was under consideration by the Queensland Government.

The report highlighted five key themes:

1. **Change is inevitable, however transitions can be managed;**
2. **Skills drive economic and social prosperity;**
3. **Access to quality work is essential;**
4. **Place-based leadership creates stronger regions;**
5. **Lifelong learning and skills attainment underpin Queensland’s future.**

While these themes are critical aspects of a forward strategy, they do not fully address the dilemma that 4IR creates for most stakeholders – concern about the impact on jobs. Unfortunately, protecting the jobs of today will not enable the jobs of the future. However, helping facilitate dialogue that enables investment in people’s skills, the infrastructure required and a vision about how to create a place-based strategic comparative advantage can create the forward strategy that actually resolves the dilemmas of change. In previous industrial revolutions there often was inadequate investment in a structured dialogue with communities. Learning from the more recent United States (Appalachia) and German (Ruhr) just-transition processes, key to the failure of the former, and the success of the latter,¹² was the level of investment in a collaborative engagement process.

An unplanned, *ad hoc* approach will result in a chaotic and inadequate 4IR transition. Given the widespread impact and exponential rate of predicted change this will most likely lead to significant social and political upheaval. This is set within a context of pre-existing, low levels of public trust in responsible institutions (that will likely be blamed for any crisis).

Importantly, the 4IR is occurring at a time when societies are enabled, through technology, to be far more vocal about their dissatisfaction, with a greatly increased ability to mobilise, organise and amplify their concerns – as consumers, community members and voters. Only through a genuine two-way dialogue can trust in the process be built. A trusted process will, in turn, deliver the necessary resilience required to weather the inevitable mistakes and kinks that will need to be addressed and managed through a complex 4IR transformation.

Critical to any 4IR strategy is the need to conduct a visioning process that would enable discussion on the future of work, empower regions to respond to changes presented by the 4IR and envision where they want to be in the short, medium and long term. It would build necessary capacity and support during a period of significant change. Specifically, such a process would:

- Communicate the potential social and economic impacts of 4IR and improve understanding of what this means for all stakeholders at local and regional levels;
- Assess and track societal attitudes and identify and address underlying psychological barriers to change;
- Discuss opportunities to prevent and mitigate potential impacts, and to capitalise on opportunities to grow industries and businesses in the 4IR;
- Facilitate the establishment of a collaborative model of community partnership bringing together active regional participants in technological innovation;
- Facilitate the creation of a robust and credible regional community vision, with input from all stakeholder groups, that is ‘community owned and developed’ seeking to deliver social and economic value; and
- Support the facilitation and execution of the strategic pathways established in the community visioning work to realise social and economic value.

“ Unfortunately, protecting the jobs of today will not enable the jobs of the future. However, helping facilitate dialogue that enables investment in people’s skills, the infrastructure required and a vision about how to create a place-based strategic comparative advantage can create the forward strategy that actually resolves the dilemmas of change. ”

As the existing structures of how business and work are organised to fundamentally transform, so too must people – in the way they approach problem-solving, identify opportunities and address challenges. This only represents the baseline of the systemic transformation required across the consumer, services and employment sectors to ensure a feasible and sustainable 4IR future.

The leadership role to drive this is also open to all, with four out of 10 people believing business is most able to solve this problem and that it needs to draw in government¹³. Less than 30 percent of people globally though believe that business will retrain workers whose jobs are at risk. Addressing issues such as retraining within and across sectors will require a partnership between government, institutions and businesses (both large and small).

An important first step towards this kind of transformation is the creation of a collaborative, democratising engagement process. Such a process should provide accurate information on the impacts of 4IR; understand and address the concerns of the community (including emotional barriers to change); support the development of a collective future 4IR vision based on regional, comparative advantage that is community-led and owned.

Using social licence-based processes, Futureye’s engagement methodology employed within both the Dysart and Moranbah communities is designed to support these objectives.



2 Engagement & Planning Methodology

KEY POINTS

- The engagement process actively sought community opinion in co-designing the townships' 4IR future to ensure a people-centred approach.
- Critical to understanding the community's vision is to understand where they are now (current state) and to understand how current barriers may impact on realising future opportunities (future state).
- 42 confidential **interviews** were conducted with a representative sample of cross-sectoral stakeholders from which members of the Smart Transformation Advisory Councils (STACs) were selected.
- **STACs** sit at the centre of the Smart Transformation engagement process as a vital accountability measure, facilitating input and feedback into all aspects of the engagement and planning process. A Youth Advisory Council (YAC) specifically enabled young people's perspectives to be captured.
- **Community Forums** were held targeting the involvement of a broader cross-section of local community members and businesses in both Dysart and Moranbah with the purpose of increasing general awareness of the 4IR, and providing specific training to empower them regarding their future
- Underpinning the direct engagement process is the **Smart Transformation website** (www.smarttransformation.com.au), which continues to act as an ongoing source of information.
- Inputs from the engagement process, combined with community profile data, informs this '**Smart Transformation Readiness Assessment**' (STRA), which creates a baseline for 4IR readiness, including an identification of impacts and opportunities.
- The STRA forms the foundation for the **Smart Transformation Roadmap**, which creates a blueprint for future-focused, practical, 4IR-ready actions the towns and organisations can take.

The engagement process actively sought the community's engagement in co-designing their towns' future. This ensured the plan was not only place-based, but human-centred. It facilitated an accurate identification of the impacts and opportunities, and allowed people to take ownership of their specific 4IR growth strategy and will support both physical and social infrastructure investments.

As outlined previously, the first critical step in understanding where the community wants to go is to understand where they are now. To assess current barriers and how they may impact on future opportunities in Dysart and Moranbah, four high-level criteria were used:¹⁴

1. **Community Resilience**
2. **Just Transition**
3. **Technology Use**
4. **Community Vision**

STAC member Melissa Westcott (with microphone)
at the Moranbah Smart Transformation Community Forum.



Smart Transformation Advisory Councils

A representative sample of people from both communities was identified. This group included representatives from business, education, health, local government and the community services sector. Stakeholders were invited to participate in individual, confidential, face-to-face interviews conducted by Futureye.

At the conclusion of these 42 interviews, stakeholders were selected to become involved in the Smart Transformation Advisory Councils (STACs).

The Dysart and Moranbah STACs sit at the centre of the community-focused, Smart Transformation engagement model and are a vital accountability measure.

The STACs facilitate input and feedback into all aspects of the engagement and planning process including the community baseline, impacts and opportunities, future objectives and themes and short, medium and long-term planning outcomes. The membership of the Dysart/Moranbah STACs is as below.

Moranbah

SMART TRANSFORMATION ADVISORY COUNCIL



Michelle Esler

Michelle is the Director of Nursing at Moranbah Hospital, so is on call 24/7 dealing with the health and wellbeing of the local community. Michelle is advocating for improving local services, particularly around mental health.



Melissa Westcott

A small business owner and active community member, Melissa's roles include Director of C-Res and President of the Moranbah State School P and C. She sees the potential for other local businesses to grow through access to technology and global markets.



Phil Harms

Phil is a Director of Pimms Engineering, which is based in Moranbah and oversees over five hundred staff in locations across Australia. Phil has been in Moranbah for 22 years and supports many local clubs and organisations.



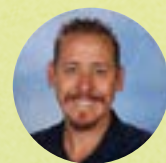
Carolyn Fritz

Carolyn is a director of Moranbah Discount Tyres and Mechanical and a board member of the Greater Whitsunday Alliance. With over 30 years in the region, Caroline wants to see a stable economic platform developed, immune to the boom-bust mining cycle.



Ash Dowd

Manager of the Moranbah Community Workers Club and President of Moranbah Traders Association. Ash has been in town for 11 years. He describes the business community as "motivated" and is keen to ensure the future opportunities are realised.



Anthony Edwards

As Principal of Moranbah State School, Anthony draws on his extensive experience teaching in rural and remote communities. He aims to prepare students for a life of choice, not a life of chance – getting them ready for the coming technological changes.



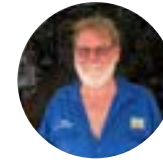
Richard Engel

Richard and his family have a long history with the Moranbah Community. As a dragline operator Richard has seen the physical landscape change and is now focused on benefits that can come from changes in the technical landscape and how these benefits can be shared by the community.



Sean Milfull

Sean is General Manager of BMA's Goonyella Riverside Mine. He is a veteran mining professional and an active member of the BMA Inclusion and Diversity Council.



John Crooks

John, along with his wife Marina, has owned Crooks Home Hardware & Electrical in Dysart for more than 25 years. As a small business owner John is focused on building a vibrant and thriving community in Dysart.



Sandy Moffat

Sandy describes her vision for Dysart as "livable and loveable." As a small business owner, parent and employer, she also understands the importance of the community coming together to prepare for a changing future. Sandy believes there are many opportunities awaiting the community.



Liz Fox

As a long-term resident, community advocate and BMA employee Liz is active across a number of roles. Liz believes that Dysart is strategically placed in the Bowen Basin to leverage technology changes that can deliver benefits across the community.



Brad Crompton

Brad is the Lodge President for the CFMEU at BMA's Saraji Mine. His priority is developing new initiatives to increase Dysart's population, and ensure services are maintained.



Richelle Toshack

Dysart

SMART TRANSFORMATION ADVISORY COUNCIL

In her role at the Dysart Community Support Group, Richelle connects with individuals and organisations across the local community and region. Based on this experience, Richelle can see the positive impact effective collaborations achieve.



Royce Bailey

In his 20 years at Saraji, Royce has firsthand experience of global technological changes. Royce is committed to highlighting and promoting local innovation and creative talent.



Teena Elliott

As the Principal of Dysart State Primary School, Teena is in contact every day with the diverse talent and experience that make up the school community. As a leader, Teena is building pathways and identifying opportunities for her students to excel in careers of the future.



Dan Iliffe

Dan is the General Manager of Saraji Mine. He has spent 20 years working in coal mines across the Bowen and Surat Basins. Dan has spent the last eight years with BMA and held a range of senior operational roles at Peak Downs, Saraji and Caval Ridge.

"I learnt how to be more mindful about how I can take action myself and prepare myself, and make more of a strategy for any changes that might happen in our community."

SHARON BRADFORD / TEACHER AIDE DYSART STATE SCHOOL

*I can
take action
myself*

The Terms of Reference which govern the STACs were agreed by members and ensured their independence (see Appendix Two). Futureye facilitated STAC meetings.

Additionally, two local high schools were engaged in the development of a single Youth Advisory Council (YAC). The objective of the YAC was to gain youth perspectives on social insights, impacts and opportunities and to ensure a youth voice in the co-design of the 4IR future strategy within the region. Following an Expression of Interest (EOI) process, in consultation with school leaders, 16 students were selected to participate in the YAC.

In addition to the advisory council engagement structure, Community Forums were held in February 2020. Attendees included a broad range of community members from union officials, social service representatives to miners, families and business owners in both Dysart and Moranbah. Publicised in the local media – newspaper and radio – along with social media promotion and direct engagement, the forums provided an opportunity for all residents in the townships to participate in the project. The purpose of the forums was to increase awareness of the 4IR and to increase attendees' sense of control about their futures.

The forums included three individual training sessions, run concurrently:

1. **Future You** – how can you apply personal values to create your preferred future?
2. **Owning Your Future Work** – how can work across sectors be shaped to meet disruption, and what are the skills and mindset needed for that?
3. **Collaborating for Community Wellbeing** – how do we build on community strengths and current collaboration to create community resilience and unlock potential?

Locals considered the work undertaken by the STAC/YACs in both towns, with the results from the forum engagement used as an input into this Smart Transformation Readiness Assessment (STRA).

The STRA links engagement with future planning outcomes by forming the foundation for the Smart Transformation Roadmap. The Roadmap creates a blueprint for future-focused, practical, 4IR-ready actions that are community-led and owned and can be actioned immediately.

Underpinning the direct engagement process was the Smart Transformation website (www.smarttransformation.com.au), which acted as a source of accessible information for participants and the community. Articles and news on the 4IR were posted, as were meeting minutes from the STACs, to ensure information availability and flow to Dysart and Moranbah residents.



STAC member and BMA Goonyella Riverside General Manager Sean Milfull at the Moranbah Smart Transformation Community Forum



3

Current State: Community Profile Data

KEY POINTS

- A critical part of planning for a Fourth Industrial Revolution (4IR) future is to understand the current state in terms of the social environment within the impacted communities which informs a Smart Transformation Readiness Assessment (STRA).
- Community profile data was reviewed to understand the key differences and similarities between Dysart and Moranbah in relation to population, economic diversity, services, education and employment.
- Historically Dysart and Moranbah are 'mining towns', and in 4IR terms, largely dependent on a sector that is introducing automation and technology rapidly both domestically and internationally.
- It was found that both towns possess a strong mining identity and are family-oriented, with evidence of strong connectedness between residents contributing to a high-level sense of resilience.

General Context – The Bowen Basin

Containing the largest coal reserves in Australia, the Bowen Basin runs from Collinsville in the north of Queensland to Theodore in the south. It includes the local government areas (LGAs) of Isaac, Whitsundays, Central Highlands, and Banana.

Coal was first discovered in the Bowen Basin in the mid-1800s, however the beginning of open-cut coal mining in the late 1960s precipitated the transformation of the region. The Utah Development Company (UDC) established Goonyella and Peak Downs Mines before heading south in the early 1970s to establish Saraji and Norwich Park. This mine development led to the creation of the towns of Dysart and Moranbah to provide accommodation and support services for mine employees and their families. In fact, Moranbah celebrates its 50th anniversary as a town this year.

Spanning an area of approximately 58,000 km² in Central Queensland, the LGA of Isaac is located approximately 1000 km north-west of Brisbane and approximately 900 km south of Cairns.

Focal Communities – Dysart & Moranbah

An important aspect of the process for Smart Transformation Readiness is understanding the individual community characteristics of each town.

There is an acknowledgement that non-residential workers are not captured in the 2016 Census data used in the next section.

Dysart Community Profile Snapshot

Established in 1973, Dysart features:

- **Low-density detached dwellings with recent increases in medium-density housing;**
- **Council offices and library;**
- **A commercial shopping centre including supermarket, baker and banks;**
- **Two schools, a hospital and a significant range of sporting and recreational facilities and clubs; and**
- **Light industrial areas.**

Population

Dysart reported a resident population of 2991 on the 2016 Census night¹⁵.

Demographic

On the 2016 Census night, the majority of Dysart's residents were considered to be of working age (between 15 and 64 years of age) or part of the youth demographic (under 15 years of age), with 40 percent (1201 people) between 15 and 39 years of age, and 30 percent (908 people) between 40 and 64 years of age¹⁶. Around one quarter of all residents (788 people) were under 15 years of age and just three percent (101 people) were older than 64 years of age¹⁷. Most families in the region were reported as couple families with children (53.4 percent or 311 people) as opposed to single parent families (12.2 percent or 71 people)¹⁸. The average family with children in Dysart had two children¹⁹.

Education

According to the 2016 Census, in Dysart the education services attracting the highest attendance were primary school or pre-school services, with 372 children utilising these services²⁰. A further 150 residents attended secondary school²¹. In Dysart, 34 percent (749 people) of the residents had completed post-secondary school qualifications²². Specifically, 7.7 percent (169 people) had received a bachelor's degree or above, 4.3 percent (95 people) had received an advanced diploma or diploma level qualification, 2.9 percent (64 people) had received a Cert IV and 19.1 percent (421 people) had received a Cert III²³.

Employment

On Census night, the region reported 68.6 percent of its population (919 people) as full-time employed and 19.3 percent (259 people) as part-time, with a workforce of 1399 people²⁴.

Income

The median weekly income range reported in Dysart during Census night was \$1113²⁵. By industry, the mining sector was Dysart's primary source of employment – accounting for just under half (578 workers) of the total workforce²⁶. Almost two thirds of all occupations within the region (781 workers) were reported as 'mining industry-related' jobs including machinery operators and drivers, technicians, trades workers and labourers²⁷.

Dysart Community Profile Snapshot

Health Care

There is one hospital in Dysart which catered for 480 admissions in 2015-16²⁸. The majority of these admissions were categorised as an 'emergency', with fewer than five admissions each for childbirth or surgery²⁹.

Transport

Dysart is connected to the Peak Downs Highway by the Saraji Road and Peak Downs Mine Road, and is approximately 250 km by road to the west of Mackay. There is no public transport in Dysart and no direct passenger train or air service. The town's airport closed in 2013 (with the exception of use by the Royal Flying Doctor Service).

Moranbah Community Profile Snapshot

The main service centre for the region is Moranbah and includes:

- **Low-density detached dwellings with recent increases in medium-density housing;**
- **Main street includes a library, gallery, council offices and parklands incorporated into a town centre;**
- **A commercial precinct adjacent to the town centre, including motels and the Moranbah Workers Club and an indoor retail centre;**
- **Three schools, a hospital and a broad range of sporting and recreational facilities and clubs;**
- **A functioning airport; and**
- **Light industrial areas to the western side of town.**

Moranbah is a compact town characterised by low-rise housing well distributed around the town centre.

Population

On 2016 Census night, Moranbah reported a resident population of 8735³⁰.

Demographic

On Census night, the majority of Moranbah's residents were considered to be either of working age (between 15 and 64 years of age) or part of the youth demographic (under 15 years of age), with 42 percent (3626 people) between 15 and 39 years of age, and 28 percent (2441 people) between 40 and 64 years of age³¹. Almost 30 percent of all residents (2497 people) were under 15 years of age and just two percent (173 people) were older than 64 years of age³². Most families in the region were reported as couple families with children (58 percent or 1146 people) as opposed to single parent families (11.4 percent or 225 people)³³. The majority of families with children who resided in Moranbah had two children³⁴.

Education

According to the 2016 Census, the education services attracting the highest attendance in Moranbah were for the primary school and pre-school services, with 1217 children utilising these services³⁵. Additionally, 495 residents attended secondary school³⁶. In Moranbah 45 percent (2799 people) of the residents had completed post-secondary school qualifications³⁷. Specifically, 13.1 percent (818 people) had received a bachelor's degree or above, 6 percent (372 people) had received an advanced diploma or diploma level qualification, 3.5 percent (217 people) had received a Cert IV and 22.4 percent (1392 people) had received a Cert III³⁸.

Employment

On Census night, the region reported 67.5 percent of its population (3092 people) as full-time employed and 20.3 percent (932 people) as part-time employed, with a workforce of 4584 people³⁹.

Income

On Census night, the median weekly income range reported in Moranbah was \$1209⁴⁰. By industry, the mining sector was Moranbah's primary employer, accounting for just under 39 percent (1700 workers) of the total workforce⁴¹. The town's reliance on the mining sector is further demonstrated by occupation data, with almost 57 percent (2433 workers) of all occupations within the town attributed to the mining industry, including as machinery operators and drivers, technicians and trades workers, and labourers⁴².

Health Care

There is one hospital in Moranbah, and 422 admissions for the period 2015-16⁴³. The majority of admissions were listed as an 'emergency', with fewer than five admissions each for childbirth and elective surgery⁴⁴.

Moranbah Hospital

	Presentations	Admissions
2015/16	3,726	442
2016/17	3,489	435
2017/18	4,296	755

Transport

Moranbah is connected to the Peak Downs Highway by the Moranbah Access Road, and is approximately 200 km by road to the west of Mackay. There is no public transport in Moranbah and no direct passenger train service to Moranbah. A private taxi service is available within Moranbah town limits.

A daily bus service operates between Mackay and Moranbah, and there is a twice-weekly bus service to Rockhampton. The majority of bus services operating in and around Moranbah reflect arrangements for commuting workers. There are also two school bus routes which utilise Peak Downs Highway to provide transport to the schools in Moranbah from Clermont and Coppabella. BMA currently owns and operates the airport with several return daily flights, and frequent flights between Brisbane and nearby regional centres such as Mackay.

Comparison of Dysart/Moranbah to overall Isaac regional profile

An analysis has been undertaken comparing specific Dysart and Moranbah community indicators with overall Isaac regional indicators. This provides valuable insights into understanding the regional context in which both the Dysart and Moranbah communities operate, and the similarities and differences experienced across the greater Isaac region.

Population, Services, Education, Employment

The Dysart and Moranbah communities comprise approximately 15 percent and 40 percent respectively of the Isaac region's total population⁴⁵. The Dysart population median weekly household income (AUD\$2152⁴⁶) was above the Isaac regional median (AUD\$2138⁴⁷), with Moranbah's population possessing the highest median weekly household income (AUD\$2421⁴⁸) within the Isaac region. The overall median age within the Isaac region is 32 years of age⁴⁹, with Dysart at 31 years of age⁵⁰ and Moranbah at 30 years of age⁵¹, which are lower than the Australian median age of 38 years of age⁵². The percentage of dwellings with internet access was 86.4 percent⁵³ in Dysart, and 90.2 percent⁵⁴ in Moranbah, both above the Isaac regional average of 85.1 percent⁵⁵.

Primary school enrolments (26.5 percent⁵⁶ in Dysart; 33.4 percent⁵⁷ in Moranbah and 29.6 percent⁵⁸ in the Isaac region) are at a little over double that of secondary school enrolments (12 percent⁵⁹ in Dysart; 15.7 percent⁶⁰ in Moranbah and 14.4 percent⁶¹ in the Isaac region). This indicates a relatively higher proportion of younger children (<13 years of age) across the Isaac region (including Dysart and Moranbah)⁶². This finding is confirmed relative to Queensland primary school enrollments (27.7 percent⁶³) and secondary school enrollments (20.7 percent⁶⁴), and Australian primary school enrollments (26.7 percent⁶⁵) and secondary school enrollments (20.1 percent⁶⁶).

A lower number of enrolments for tertiary and technical education for the Isaac region is also evident when compared with the national average⁶⁷. Dysart (34.0 percent⁶⁸) has a lower rate of tertiary or higher technical attainment than Moranbah (45.0 percent⁶⁹) and the overall Isaac region (38.7 percent⁷⁰). Dysart (7.7 percent⁷¹) has nearly half the percentage of the population with a bachelor's degree or above when compared with Moranbah (13.1 percent⁷²), and a lower percentage than the overall Isaac region (10.3 percent⁷³). Between Dysart and Moranbah, a similar proportion of the population have obtained Diplomas, Certificate IVs and Certificate IIIs (Dysart - 26.3 percent⁷⁴ and Moranbah - 31.9 percent⁷⁵), including when compared with the overall Isaac region (28.4 percent⁷⁶). When compared with the proportion of the population that has obtained an advanced

diploma or diploma level qualification in Queensland (8.7 percent⁷⁷) and Australia (8.9 percent⁷⁸), the corresponding proportion of the population across the Isaac region (5.1 percent⁷⁹) (including Dysart and Moranbah) is lower. Conversely, the Isaac region (including Dysart and Moranbah) reflected a higher proportion of the population having attained Cert III and Cert IV qualifications (23.3 percent⁸⁰) when compared with Queensland (18.2 percent⁸¹) and Australia (15.7 percent⁸²).

Dysart and Moranbah exhibit rates of employment similar to the Isaac regional average, while their respective unemployment rates of 6 percent⁸³ and 5.5 percent⁸⁴ are slightly higher than the Isaac regional average of 4.9 percent⁸⁵. A large proportion of the populations of Dysart and Moranbah are employed in the coal mining industry (48.6 percent⁸⁶ and 39.3 percent⁸⁷ respectively) which is above the average for the Isaac region (35.4 percent⁸⁸). Of these coal mining workers, the proportion of technicians and trades workers are above the national average, while employed professionals fall below the national average⁸⁹. Dysart (32.3 percent⁹⁰) and Moranbah (28.3 percent⁹¹) have high proportions of families with only one employed family member, possibly a result of the higher proportion of young families discussed earlier.

Figure 2. Overall Comparison of Isaac Region with Dysart and Moranbah

	Isaac ⁹²	Dysart ⁹³	Moranbah ⁹⁴
GENERAL			
Population	20,940	2,991	8,735
Male	54.5%	56.6%	53.3%
Female	45.5%	43.4%	46.7%
Identifying Indigenous or TSI population	744	134	342
Median Age	32 years	31 years	30 years
Median Weekly Household Income	AUD \$2,138	AUD \$2,152	AUD \$2,421
Internet access	85.1% of dwellings have internet access	86.4% of dwellings have internet access	90.2% of dwellings have internet access
EDUCATION			
Primary enrolments	2,225	332	1,053
Secondary enrolments	1,085	150	495
Tertiary enrolments	352	37	169
Technical college enrolments	261	29	137
Year 12 completion	14.7%	14.1%	16.1%
Year 10 completion	14.5%	13.6%	11.9%
Tertiary or higher technical attainment	38.7% 10.3% Bachelor's degree or above 3.1% Cert IV, 20.2% Cert III	34% 7.7% Bachelor's degree or above 2.9% Cert IV, 19.1% Cert III	45.0% 13.1% Bachelor's degree or above 3.5% Cert IV, 22.4% Cert III
EMPLOYMENT			
Employment	88.6%	87.9%	87.8%
Unemployment	4.9%	6.0%	5.5%
Working 40+ hour week	62.4%	64.6%	60.9%
Employed coal mining industry	35.4%	48.6%	39.3%
National average for reported unpaid weekly domestic work and child care	65.2% unpaid domestic work (last week) 33.7% cared for child/ children (last 2 weeks)	58.1% unpaid domestic work (last week) 31.7% cared for child/ children (last 2 weeks)	69.0% unpaid domestic work (last week) 38.9% cared for child/ children (last 2 weeks)
Families with only one employed member	26.3%	32.3%	28.3%
National average employed professionals 22.2%	10.7%	10.4%	12.2%
National Average working as technicians and tradeworkers, machinery operators and drivers and labourers 29.3%	55.5%	62.0%	56.2%

Community Identity, Values, Resilience

While these are towns characterised by a mining-based labour force, they are also family-oriented, with a high percentage of young children and teens. There is evidence of strong connectedness between residents, not unusual in rural townships, with the added strength of shared employment in mining.

In April 2015, the Isaac Regional Council (IRC) adopted Isaac 2035, a Community Strategic Plan⁹⁵ which aims to strengthen the region across four key areas:

- Improving essential infrastructure;
- Diversifying the economy;
- Supporting communities; and
- Protecting the natural environment.

Isaac 2035's key 'stretch' goal is that by 2035, the IRC will have strong and diverse communities that support the ability of all to live, work and raise families.

Stakeholder interviews revealed a very strong sense of community in both towns, with the following key themes identified:

- Cohesive culture and identity;
- Family-oriented livability and amenity; and
- Community resilience.

Cohesive Culture and Identity

As evidenced by regional planning goals and stakeholder interviews conducted for the Project, towns in the Isaac region share many cultural values including:

- A strong work ethic, with people willing to work hard to provide for their future;
- A love of recreation, including sport, outdoor activities and leisure time with family and friends;
- A commitment to ensuring children, older people and vulnerable people are protected and supported; and
- An appreciation of the environment and a need for protection of both the natural environment (such as reserves and national parks) and the modified environment, such as towns and farms⁹⁶.

Family-Oriented Livability and Amenity

The Isaac Community Plan consultation process found almost all (98 percent) participants had chosen to live in the Isaac Region for community, lifestyle and livability reasons. The Isaac 2035 Plan⁹⁷ describes the region's community strengths as including:

- A good place for families;
- Long-standing community with supportive cultures;
- Safe communities with low crime; and
- A younger than average population.

Community Resilience

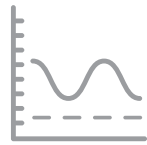
Community resilience is the existence, development, and engagement of community resources by community members to thrive in an environment characterised by change, uncertainty, unpredictability, and surprise⁹⁸. Many stakeholders reported a sense of strong community resilience due to the experience of the boom-bust cycle of the mining industry. The CSIRO Local Voices project⁹⁹, showed that of the 200 participants surveyed in Dysart and Moranbah, there was a significant degree of satisfaction with life as a whole. While the overall view was positive, some specialists in social services expressed concern about that community wellbeing needed attention and that the amount of services was insufficient for the needs.

I think
information
is key

"I think information is key – having our community know more information about what's coming up, what the future job force is, is what shapes our community."

RACHAEL LEWIS / EDUCATOR





4 Current State: Smart Transformation Readiness Baseline

KEY POINTS:

- Generally, there is a low level of perceived Smart Transformation readiness across both communities, with Moranbah community members having higher levels of readiness when compared to Dysart.
- By sector, Isaac Regional Council stakeholders indicated the highest level of perceived 4IR readiness for their community while stakeholders in the services industry reflected the lowest level of perceived 4IR readiness.
- At present, there is limited ability to envision any change to the status quo, namely the maintenance of a co-dependent relationship with the mining industry within the communities of Dysart and Moranbah.
- Overall, there is a limited ability to identify and engage with sustainable technological opportunities.
- Limited awareness of or follow-through on the skills or actions necessary to transform the community to ensure access to the broader cross-regional and global opportunities.
- Minimal engagement with technological opportunities in building a regional strategy that delivers competitive advantage.
- An overwhelming acknowledgement that the community must be brought together to imagine, establish and pursue its own vision.
- Young people in the communities are much more comfortable about their ability to adapt, and to access the resources they need.

4IR READINESS METHODOLOGY

The Fourth Industrial Revolution (4IR) readiness methodology is based on categories and scoring criteria which were developed from a review of 4IR transition approaches. The methodology reflects a combination of 4IR readiness factors and social licence-based questions that interrogate intuitive, underlying psycho-social barriers to change.

The categories and criteria adapt to the particular context and subject for assessment. Based on the policy review and the initial findings from the engagement process, four key categories were developed – Resilience, Just Transition, 4IR and Vision. These are scored against the 4IR readiness rating from 1 (Pre-4IR Status Quo) through to 5 (Smart Transformation Ready) (see Appendix Two for detailed assessment criteria). On account of the sample size this Smart Transformation readiness assessment creates a baseline of indicative views and is not statistically valid.

4IR Readiness Assessment

The initial baseline assessment involved 42 independent stakeholder interviews structured according to the four categories described above. These interview responses were then scored against the criteria to provide an insight to readiness levels. The Smart Transformation readiness findings were grouped as follows:

- **Smart Transformation – General findings**
- **Smart Transformation – Dysart and Moranbah comparative findings**
- **Smart Transformation – Sector findings**

Additionally youth were interviewed separately through the Youth Advisory Council.

4IR Readiness — General Findings

The average scores across all stakeholder interviews inclusive of both towns are shown in Figure 3. Generally, findings indicate a low level of perceived 4IR readiness for these communities. Community Resilience reflected the highest rating of 4IR readiness with Just Transition scoring the lowest rating for the issues measured.

Community Resilience scored in the mid-range (2.45) of the low transition stage of readiness. This was followed by Community Visioning (2.13) and Technology (2.00) that also scored at the low transition stage of readiness. Job market preparedness, or Just Transition was the only issue measured that reflected a pre-4IR or 'status quo' stage of transition rating (1.95), albeit only slightly below the low transition stage.

4IR Readiness — Dysart & Moranbah Findings

There were a number of marked differences identified between stakeholders from the two communities as seen in Figure 4. For each of the four issues measured, the interview data gathered from Moranbah stakeholders generally indicated a higher level of perceived 4IR readiness for their community when compared with Dysart stakeholders.

For Dysart and Moranbah, the highest level of perceived readiness was for Community Resilience (2.17 and 2.82 respectively). This was the only issue for which the Dysart stakeholders scored in the low transition stage of readiness, with all other issues scoring in the pre-4IR stage of readiness. There was a marked difference between the readiness perceptions of Dysart and Moranbah stakeholders in relation to Just Transition (1.33 and 2.73, respectively), attracting the lowest rating for Dysart stakeholders when compared with the other issues measured. Moranbah stakeholders scored each of the four issues at a mid-range within the low transition stage.

Figure 3. Average Scores Across all Stakeholders

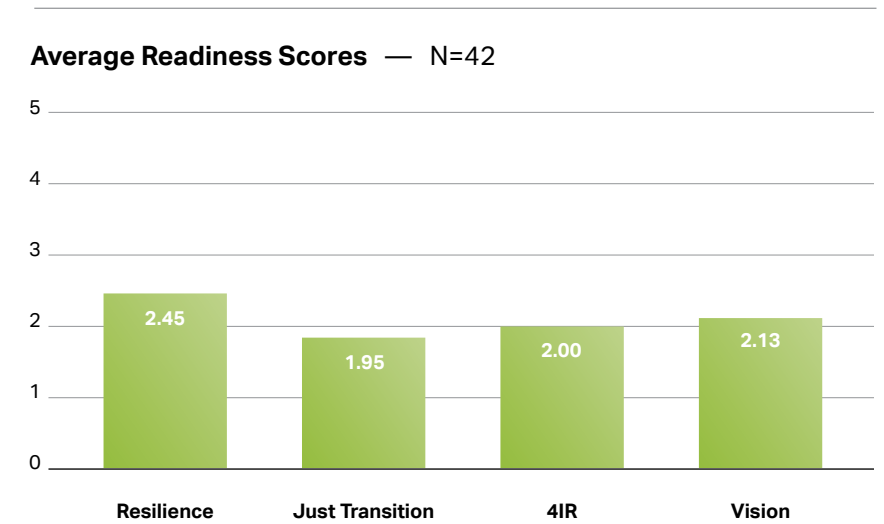


Figure 4. Readiness Comparison Between Dysart and Moranbah

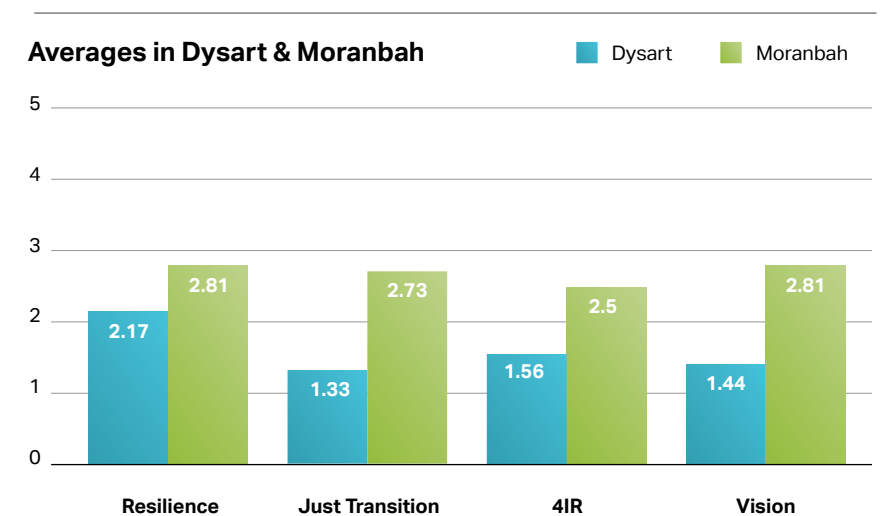
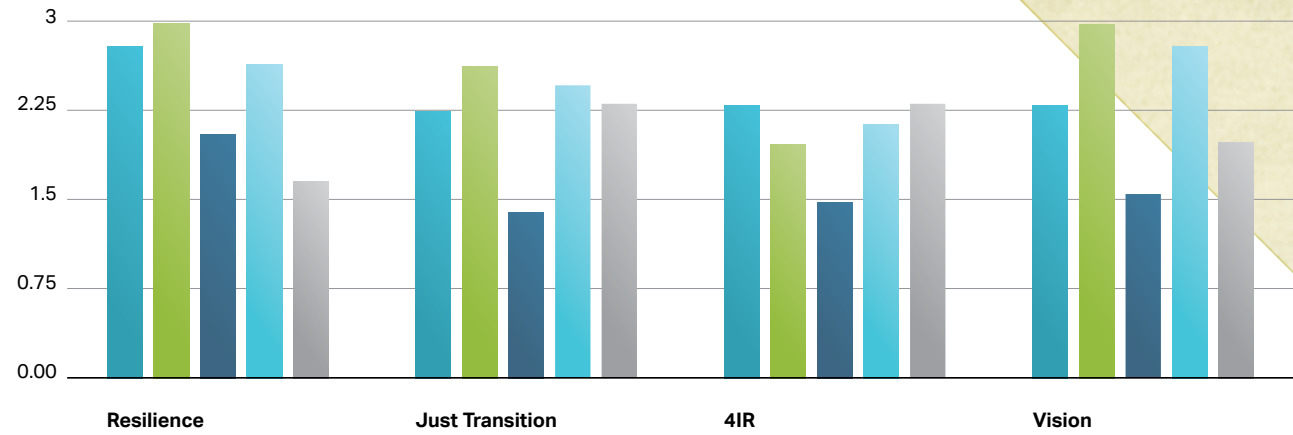


Figure 5. Comparison by Sector

Readiness Assessment – Sector Groupings



4IR Readiness — Sector Findings

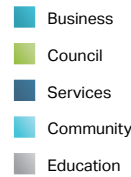
When stakeholder interviewees were grouped by sector (business, council, services, general community, education) marked differences in results were noted. Generally, Isaac Regional Council (IRC) stakeholders indicated the highest level of perceived 4IR readiness for their community while stakeholders in the services industry reflected the lowest level of perceived 4IR readiness.

For the criteria of Community Resilience, Isaac Regional Council (IRC) stakeholders reflected the highest level of perceived 4IR readiness scoring it at a medium transition stage (3.00). In contrast, business (2.83), community stakeholders (2.67), and services stakeholders (2.08) scored Community Resilience in the low transition stage. Education stakeholders (1.67) provided the lowest level of perceived community resilience, indicating a pre-4IR stage of perceived readiness.

On Just Transition, IRC stakeholders again indicated the highest level of perceived readiness (2.67) for their community. With the exception of service industry stakeholders rating the community's readiness at the pre-4IR stage (1.42), each of the other stakeholder groups scored Just Transition at a low transition stage.

The issue of technology use (4IR) had the least variability between stakeholder groups, with each indicating a low transition level of perceived readiness for their community. The exception to this was the services industry stakeholders reflecting the lowest readiness score for their community, again scoring it in the pre-4IR stage (1.50).

The stakeholder groups' perception of community readiness in terms of Visioning were generally higher, with IRC stakeholders indicating a medium transition level of readiness (3.00). Community (2.83), business (2.33), and education (2.00) stakeholders each indicated a perceived readiness level in the lower transition stage while service industry stakeholders scored it in the pre-4IR stage of readiness (1.58).



4IR Readiness — Youth Findings

Given the nature of the youth cohort, the 4IR readiness methodology was adapted to more appropriately gauge the attitudes of young people within the community. Members of the Youth Advisory Council were surveyed about the 4IR, and their responses were markedly different from the overall stakeholder interview cohort.

83 percent of YAC members felt that the impacts of the 4IR on them as individuals and their community were "Positive" or "Very positive". In terms of their ability to adapt to the 4IR, almost 70% of the YAC members said it would be "Easy" or "Very Easy".

The survey found that while they had some understanding of the 4IR requirements, they also felt they had enough resources to draw on to successfully adapt to the changed conditions precipitated by the 4IR.

The primary concern of the youth interviewees, unlike others, was their view about the ability of older community residents to adapt in the 4IR.

Figure 6.a Youth Advisory Council Members Survey 2019

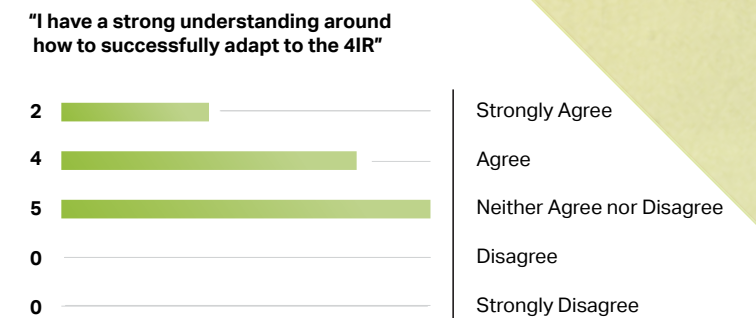
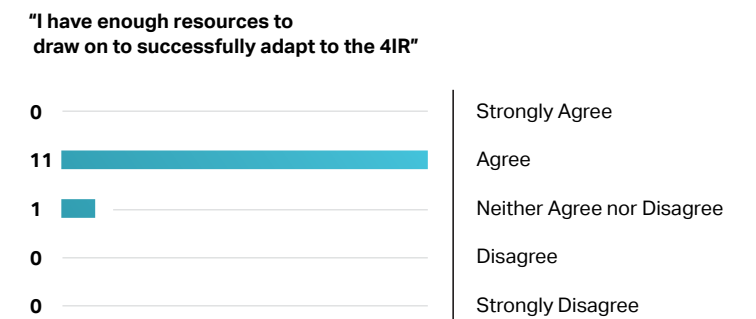


Figure 6.b



4IR Readiness – Awareness & Changing Mindsets

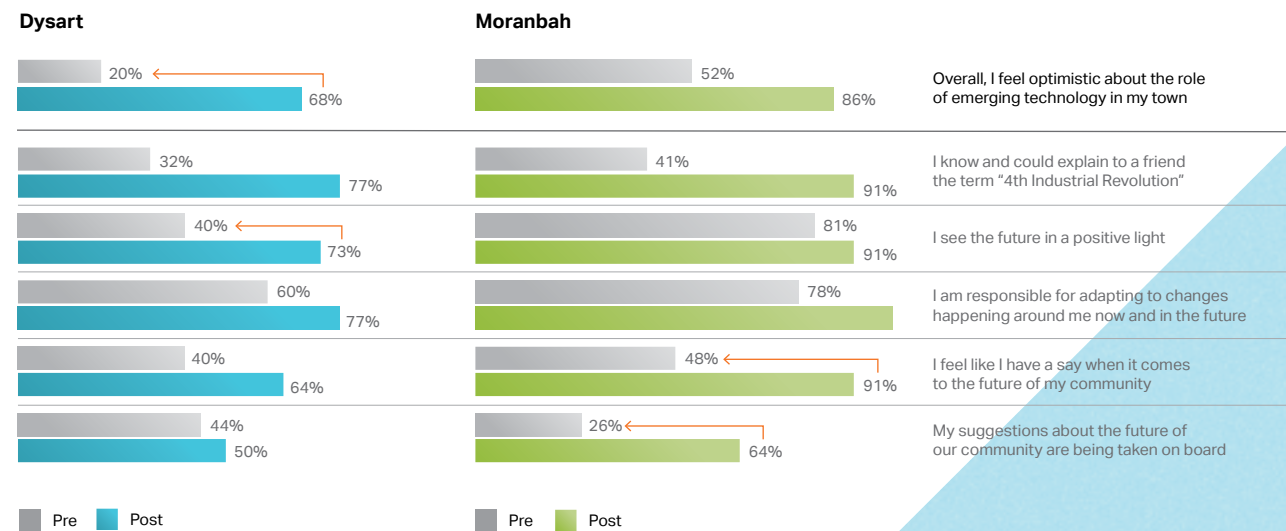
Through participation in the project both towns have shown positive shifts in awareness of the 4IR, positive sentiment about the future and feelings of empowerment. Attendees at the Smart Transformation Community Forums held in February 2020 are an example of this. Participants were surveyed as they entered the session, and then again when they had completed the session. During the sessions they discussed the 4IR, impacts and opportunities for their towns and the Smart Transformation approach, while also receiving training in developing a future plan for themselves, their business or their community.

It was observed that participants from both towns had a change in perception when it came to the overall optimism about the future and the role of technology if they had their say in the future of their community and their suggestions were taken on board.

Why are the results different in Dysart and Moranbah?

Dysart participants were more concerned entering the workshop than their peers in Moranbah. They also responded extremely well to the forum which is reflected in the larger shifts in awareness compared to Moranbah. Regardless, the "post-" results remain lower or just reaching the "pre-" levels in Moranbah, suggesting that more attention will be needed to prepare Dysart for the 4IR, including in the implementation of the Roadmap and its initiatives.

Figure 7. Shifts in Perceptions Before and After the Community Forums February 2020





5 Current to Future State: Smart Transformation Readiness Assessment

KEY POINTS

Based on the Fourth Industrial Revolution (4IR) readiness assessment, two key gaps were identified:

1. A difference between services supplied and needs to enable community capability; and
2. Low business transformation capability due to lack of knowledge about 4IR strategic direction and future skills/needs of major sectors/businesses.

- The engagement process revealed a willingness on the part of the community to actively participate in its forward plan and the actions necessary for practical implementation.

- Arising out of these gaps, three priority action issues for action were identified: community wellbeing; skills and training, and business opportunities.

- These three priority action issues underpin the development of a Smart Transformation Roadmap.

- **Community Wellbeing** — Opportunities include assessment of existing services; greater access to digital platforms and a confidence-building 4IR action plan.

- **Skills & Training** — Opportunities include a gap analysis and development of new study pathways; work re-training opportunities; facilitating an increase in the supply chain labour force; and increasing digital connectivity to access education and training opportunities.

- **Business Opportunities** — Reject 'business as usual' approach; reduce freight and logistics costs to reduce the impacts of distance; increase connectivity; reduce energy costs; secure water; expand scope of existing training programs; enhancing and enabling local entrepreneurship; increase awareness of 4IR value chains; enhance the access for local technology companies into the mining and agriculture supply chains; exploiting geographical advantages for cross-sectoral value chain opportunities; facilitating tele-working and global digital networks to expand business access; encouraging secondary support industries.

Current Gaps

When considering the community profile data together with the 4IR readiness assessment, two key gaps emerge:

1. The confidence of the community to transform due to an individual fear and a concern about the capability of the services to match the need. Reasons include a lack of long-term strategic planning for youth development, suicide prevention, domestic violence services, psychology and other support services. Other reasons include a lack of formal knowledge transfer to the community about 4IR and how they can be personally ready and capable.
2. The ability of the business community to transform due to a lack of knowledge about the strategic direction of 4IR, the needs of the major sectors/businesses and the future skills required.

The engagement process revealed an ecosystem where community and work issues were not isolated, but interrelated and impacted on the other in numerous and complex ways. The engagement process also revealed a high degree of interest for information and engagement on 4IR for Dysart and Moranbah, and a willingness on the part of the community to actively participate in its forward plan and the actions necessary for practical implementation.

From Current Gaps to Future Plan

In the 4IR assessment of the current state, and in order to develop a future pathway, three issues for investigation and planning were identified and agreed with stakeholders, including members of the Smart Transformation Advisory Councils and Community Forum participants.

The three priority action issues are:

1. **Community Wellbeing**
2. **Skills and Training**
3. **Business Opportunities**

1. COMMUNITY WELLBEING

Current State

Government services including health, emergency services and police remain a key focus for stakeholders, who believe the communities are being 'short-changed' because itinerant workers living in accommodation villages are not included in service planning. There are concerns within both Dysart and Moranbah about a perceived growth in mental health cases, with both community service and health professionals suggesting a significant rise in these issues within the local community over the past eight to 10 years. Some respondents suggested changing work patterns may have contributed to this.

There is a belief that the rise in mental health issues has been exacerbated in Dysart because of an increase in residents from lower socio-economic backgrounds, resulting from a corresponding increase in Queensland Government-funded public housing within the town.

Addressing these issues will help support the community in making the transformation necessary to increase their readiness to optimise access to 4IR opportunities.

Opportunities

Pursuing opportunities to enhance community wellbeing is critical, particularly in the face of the nature and scale of change that is characteristic of the 4IR. As identified by the STACs, a major opportunity exists to build the community's confidence in its future by planning and implementing a fit-for-purpose 4IR strategy. Such confidence could be engendered through building increased awareness and understanding of the 4IR, coupled with involvement in regional visioning and supporting action plans. Communities that assess and understand their current state, and their best possible 4IR future, are more likely to move in a positive direction through a period of high levels of uncertainty and change. Individuals must also feel confident in their own personal future, and their ability to maintain or become their own self-generating economic engine within the 4IR.

It should be noted that the regional economic development body Greater Whitsunday Alliance (GW3) has a strategic pillar regarding the Future of Work and is focused on this as a priority.

It should also be noted that leadership through an assessment of existing government services against comparative-sized communities with similar issues and challenges is required. The output of such an assessment, which would include community consultation and analysis of feasible options, needs to be communicated to residents, as well as to governments at both a state and federal level, in order to address any gaps.

Improved co-ordination of existing community services is proposed through the development of a Community Services Strategic Plan for the Isaac Region.

It is worth noting that the increased connectedness that the 4IR offers in terms of digital platforms can play a significant and useful role in supporting greater collaboration and better networks, including in towns such as Dysart and Moranbah. Additionally, digital health services that allow patients to communicate with healthcare professionals outside their community should be promoted and supported as required.

2. SKILLS & TRAINING

Current State

A number of regional education institutions, businesses and training players are giving consideration to the future requirements of the 4IR, notably Central Queensland University, BMA and TAFE through their Queensland Future Skills partnership, as well as the local secondary schools. However, these institutions currently lack sufficient information about the skills that will be demanded which could be sourced from greater collaboration across sectors (for example mining and agriculture).

While critical work is being undertaken in the skills and training space as it relates to the 4IR, it is focussed on students rather than the existing workforce across industries, and the co-ordination that would come from an overarching strategy, driven by a clear understanding of the future skills required.

Importantly, there is an inarguable link between greater co-ordination of a planned skills and training and community well-being approach. Such an approach would deliver greater confidence to the broader community on its ability to optimise 4IR opportunities.

Opportunities

While there is an anticipated reduction in certain roles across industries, there is expected to be an increase in the supply chain labour force through design, manufacturing and maintenance programs¹⁰⁰. With the growth of automated and sustainable technology industries, new skills will be required to meet demands from industries such as mining and agriculture.

Increased digital connectivity will provide greater education and training opportunities for students and the existing workforce, with online platforms providing greater accessibility. Given the rate of change necessary, further collaboration between government, industries and education providers is required to deliver courses tailored to future jobs.

There needs to be engagement with industry and the small-to-medium enterprises operating in Dysart and Moranbah, including representative bodies and regional planning organisations such as GW3. This will inform a rigorous assessment and analysis, as well as bring the sector along on the 4IR journey. Investigation is required into awareness of available courses, as well as a gap analysis and development of new study pathways.

On-the-job re-training opportunities will provide the existing workforce with the ability to learn new skills required for future jobs. For example, local engineering firms are engaging with the retraining required for servicing new technologies – as well as new digital business models and upgraded machinery – that will create significant skills and training opportunities. There is a need to ready the training sector with the skills training required to close the gap between the existing skills and the forecast job roles expected in the future.

The scale of this task is significant. For example, at Goonyella Riverside alone it is anticipated 40,000 hours of training will be required for the workforce over the two years it will take to introduce autonomous haulage.

3. BUSINESS OPPORTUNITIES

Current State

As previously outlined, there is limited awareness of the 4IR among the local business community in Dysart and Moranbah. Increasing awareness will enable the local business community to access and drive its own innovation agenda.

At present, community development projects and strategies do not talk to technology, which in turn limits the ability of the community to develop the necessary skills and resilience.

It is acknowledged that GW3 has been focused on increasing regional awareness of the 4IR since its Future of Work Summit held in Mackay in August 2019, and is currently conducting a number of training opportunities for local businesses to increase their resilience through the development of improved strategy and planning systems. However, participation in these courses has been limited to small groups. An opportunity exists to expand the scope of these programs.

Opportunities

Given the locations of these communities and their geographic proximity to both the mines and regional ports, a number of advantages exist for Dysart and Moranbah to contribute to 4IR mining and agricultural value chains. For example, mining and agricultural sectors require water and energy, creating cross-sectoral opportunities for the sharing of information, data analysis and decision making – such platforms are critical for the facilitation of decision automation, artificial intelligence and machine learning.

The 4IR will increase global consumer demand as a result of population and economic growth, particularly in Asia¹⁰¹. Tele-working and global digital systems will allow the community to engage businesses inside and outside the region, with a number of instances already occurring within the region.

The area's competitive advantage includes a highly skilled industrial workforce, proximity to multiple mines and access to available industrial land. It is also worth noting that Moranbah women are already among the most entrepreneurial in the country¹⁰², with 51% of all business owners' female, providing a platform to further develop opportunities.

Through improved planning and promotion, there is an obvious opportunity to attract secondary support industries to the region.

Logistics and connectivity must be addressed, as must water security and energy availability. However, a critical first step is for local and regional businesses to acknowledge that a "business as usual mindset" will no longer suffice to unlock value in the 4IR.

The mind maps in Figure 8 represent preliminary consideration of these themes and opportunities from the STACs in both Dysart and Moranbah.

From this initial view, the STACs then developed draft versions of the Smart Transformation Roadmap, focusing on addressing the three critical themes.

The draft of the Smart Transformation Roadmap was shared at the community forums, where participants developed their own opportunities for investigation to address associated challenges within the three themes. These were then prioritised in the forums. An opportunity to expand the scope of these programs will be explored.

Figure 8.a Mind map — Dysart Future Plan

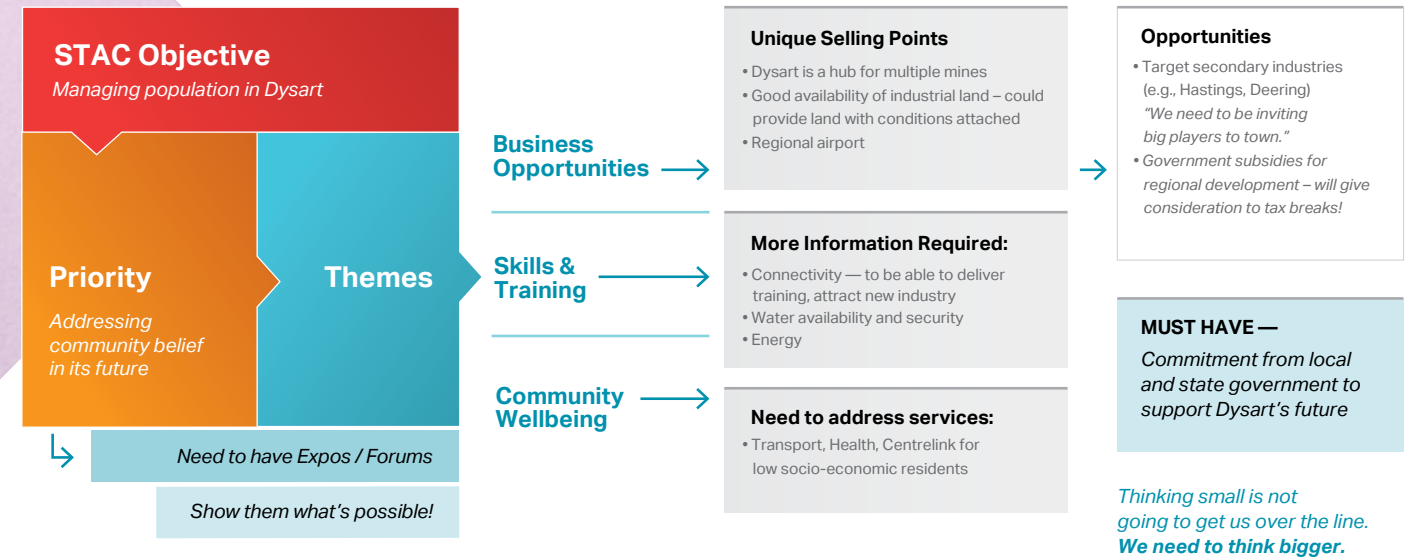
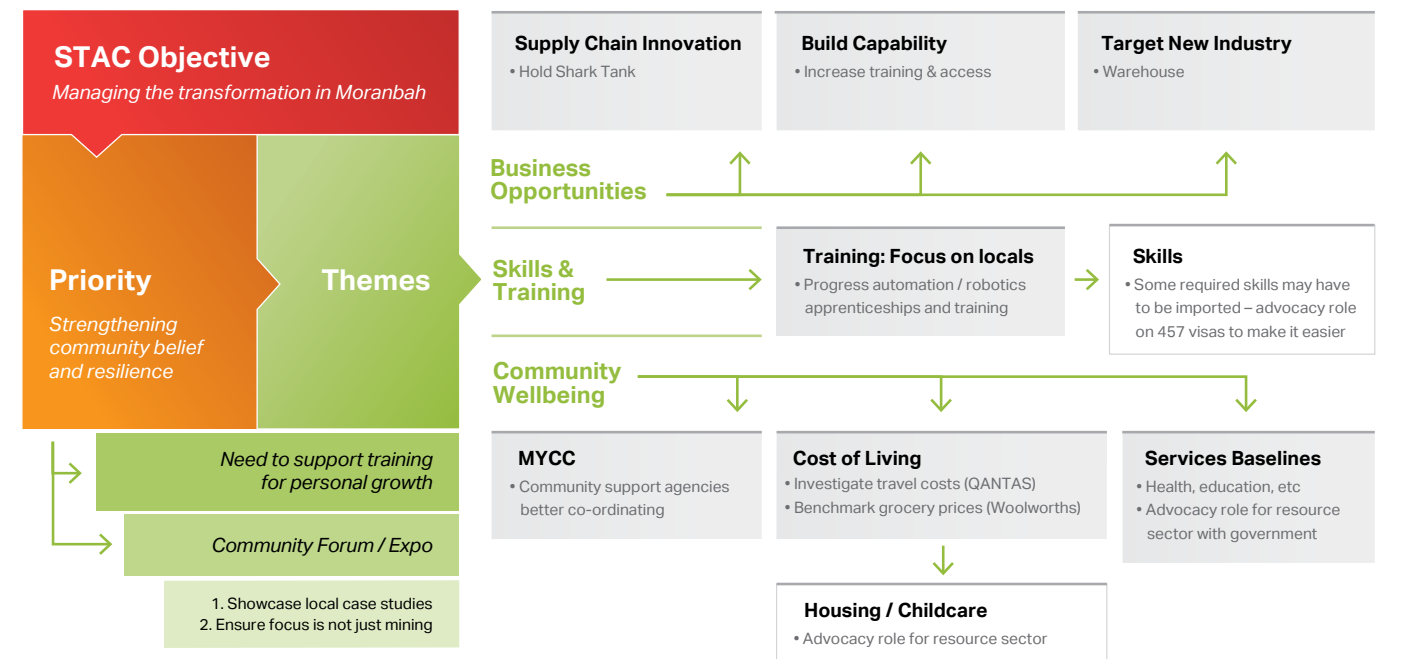


Figure 8.b Mind map — Moranbah Future Plan



preserve
what we have
in this
community

"The forward plan is to preserve what we have in this community and grow it. It's the community's job to try and sell the ideas to big business and set up here.

BRAD CROMPTON / STAC MEMBER

Figure 9. Dysart Community Forum Priorities

Skills & Training	Opportunities	<ul style="list-style-type: none"> • Connectivity – digital is a must • Multipurpose facility (training) • Attract skills trainers and teachers • Develop and run training
	Challenges	<ul style="list-style-type: none"> • Training for the workforce in the transition • Access to uni courses in technology • Not many options for older people • Training facilities for jobs in the Fourth Industrial Revolution
Business Opportunities	Opportunities	<ul style="list-style-type: none"> • Govt centres of excellence and training • Business opportunities – shops • Industrial land availability, industry support – supply of equipment • Purposeful technology - infrastructure
	Challenges	<ul style="list-style-type: none"> • Digital connectivity – Internet connectivity • Digital infrastructure and accessibility • Financial support for business • Competition • Local expertise – using and valuing • Attraction of staff and opportunity for your people • Shopping centre upgrade
Community Wellbeing	Opportunities	<ul style="list-style-type: none"> • Collective advocacy for improving town facilities • Collaboration across business and services • Promotion of and advocacy for our town and the perception of it • Utilising health services and community organisations • Recognising, overcoming and supporting anxiety of change
	Challenges	<ul style="list-style-type: none"> • Involvement, commitment within the community, to the community • Lack of resources – people, financial, physical • Lack of activities for young people • Lack of funding • Conflicting perspectives • Some voices are not listened to, others too much • Change in people's perspectives

In Dysart, stakeholders prioritised and focussed on the Wellbeing stream, with some of the ideas classified under business opportunities also closely related to community liveability. Potentially, addressing these actual or perceived gaps that impact residents' everyday life would help close the gap in the perception and attitude between the two towns and would help Dysart be similarly repaired for the transformation required ahead.

In Moranbah, most of the considerations from participants were also around community wellbeing, however the suggestions seemed to be more future-focused, possibly due to the comparatively higher level of community infrastructure in the town (both physical and social).

The complete list of all initiatives from the Community Forums can be found in Appendix 3.

Figure 10. Moranbah Community Forum Priorities

Skills & Training	Opportunities	<ul style="list-style-type: none"> • Enhance education partnerships • New education technology • Upskilling, new pathways • Youth – Future You skills curriculum • Opportunities for future generations
	Challenges	<ul style="list-style-type: none"> • Community centre – skills & training offering across the demographics • Staff resourcing - skills for sustainability • People who are able to inspire for skills and training • Opportunities for work in placements to build awareness of new skills • Vision is needed (good, pathways)
Business Opportunities	Opportunities	<ul style="list-style-type: none"> • Education – TAFE, new skills • Supporting brand "local" • New business opportunities • Business collaboration + new start up support • Promote, leverage opportunities, (i.e. industrial tourism, access to politician visiting,) • Reassessing things that come to the town
	Challenges	<ul style="list-style-type: none"> • Skills - right people in the right time and place • Infrastructure • Acceptance and adaptability of people • Cost of doing business in the regions
Community Wellbeing	Opportunities	<ul style="list-style-type: none"> • Personnel resourcing • Physical resourcing • Flexible work in childcare • Community forum/round table about opportunities • Using/growing community knowledge
	Challenges	<ul style="list-style-type: none"> • Lack of services / recruitment • Connectivity of city groups • Housing - availability and affordability • Lack of services (PT, childcare,

Summary

The three priority action areas and their supporting initiatives from both the STACs and Community Forum participants provide a foundation from which to build a Smart Transformation Roadmap which can be used as input into a regional visioning process.

It is important to note that such a process, should seek to deliver the community awareness and extensive engagement necessary for the towns of Dysart and Moranbah. This will enable the residents to make the transformation demanded by the 4IR, building confidence in the opportunities available, and actively supporting the communities' ability to access and implement these necessary changes. The Smart Transformation Roadmap is presented in the next section.



6 Smart Transformation Roadmap: Dysart & Moranbah


Objective	Critical Component	Action
Future-proofing the region by providing key foundational projects.	Build a coalition of public and private sector partners to develop and implement projects to build strategic competitive advantage for the Isaac region.	Design up to 5 Smart Transformation projects that can be supported by multiple industries (mining, agriculture, aerospace, aquaculture etc) with the SME sector and technology as well as government to contribute to improvements in skills, logistics and supply chain, energy and water security and connectivity.
Community Wellbeing		
We need our community to have confidence in its 4IR future and build its capability and preparedness for change.	Build awareness in the community of 4IR so that it can understand challenges and opportunities.	Maintain Smart Transformation website or alternative platform that focuses on technology, training programs and Smart Transformation Advisory Council engagement.
		Develop and implement an on-line engagement platform regarding regional transformation across industries.
		Conduct 4IR Expo for residents and local businesses to increase understanding and awareness.
		Increase dialogue and communications regarding climate and policy implications and opportunities within the region.
	We need the community to actively participate in determining its own future.	Conduct Regional Visioning Project aimed at building a future state that the community can align towards, giving consideration to all voices.
We need access to better government services in health and community services.	We need to understand the current government resources available for health and community services compared to the need.	Review of the regional funding of State and Federal governments for this region compared with others.
		Assess public or private transport options for those seeking to access government services outside of the local communities.
		Develop a program to advocate to Government regarding community and health services.
		Facilitate a roundtable to examine the potential for a community services strategic plan.
	We need to have better services to support families returning to work.	Conduct review of childcare services, and gap analysis to provide to attract potential proponents.
We need to create a greater sense of "community" through increased connection with the towns themselves.	We need to ensure our local clubs and social infrastructure have the people and resources they need to function and prosper.	Conduct Volunteering Review and provide opportunities for participation to major industry for distribution to workforces.
	We need to provide improved pathways for new/existing residents to connect with the community.	Enhance funding to programs which support and provide connection within the community.
We need to provide greater affordable housing opportunities.	We need to ensure that affordable housing options are improved for people on different levels of income.	Assess the opportunity to enhance existing affordable housing models to increase access for people on different levels of income.

The Roadmap aims to enable smart transformation in Dysart and Moranbah through an assessment of the region's strategic comparative advantages in the Fourth Industrial Revolution. Engagement around the community's concerns and priorities through stakeholder interviews, the Youth Advisory Council and community forums, has enabled the Smart Transformation Advisory Councils in Dysart and Moranbah to develop this Roadmap for consultation with the community at large.

The aim of this document is to provide a starting platform upon which the community can shift its perceptions and its capability to enable future-proofing of these towns.

Smart Transformation Roadmap: Dysart & Moranbah (Continued)

Objective	Critical Component	Action
Skills & Training		
We need to ensure our community has the ability to fully participate in the 4IR business ecosystem and the roles of the future.	We need to identify and understand the skills required in the 4IR.	Conduct Future Employment Study with local industry and SMEs and engage community on existing skills base.
	We need to understand what training is currently available and where the gaps are against the skills required.	Following Future Employment Study develop a Regional 4IR Training Program and resource requirement plan
	We need to move towards a more innovative mindset.	Bring "Owning your Future Work" style courses to local residents/businesses to bring business and workforce preparedness. Bring "Future You" style training courses to local residents/businesses to increase individual preparedness.
Business Opportunities		
We need to attract new businesses to the Isaac Region which will enable existing industries to grow in the 4IR.	We need to ensure we have the support structures in place for development, particularly around water, energy, logistics and connectivity.	Formal engagement with freight and logistics companies and local business to investigate enhancing the regional import/export.
		Formal engagement with energy providers and local business to investigate opportunities in the Bowen Basin to reduce energy costs and move towards a net zero carbon pathway.
		Investigate implementation of outcomes from recently completed Digital Infrastructure study.
		Investigate and develop an Industrial Land Strategy, to explore reduced costs/ rates for business development.
		Develop the MIW Regional Regional Water Strategy to focus on best use existing regional water assets and new water infrastructure to stimulate economic development outcomes for the entire MIW region.
		Following the industrial land strategy, create a Business Development Plan to include: <ul style="list-style-type: none"> • Availability of industrial land. • Infrastructure availability. • Government support opportunities including financial • Consideration of business start-up and maintenance costs
We need to build on our existing sectors to ensure we are maximising the opportunities they hold for existing and new businesses.	We need to ensure local businesses are equipped to manage the transformation required for the 4IR	Increase awareness of regional professional development programs.
	We need to investigate and implement opportunities for collaboration between the mining and agricultural sectors, particularly around the identification and awareness of future technologies.	Increase awareness of existing Innovation and Entrepreneurial programs with regional players to demonstrate pilot concepts. Initiate mining and agriculture roundtable on emerging technology players locally and existing providers of technology to these sectors
	We need to ensure local businesses are being given opportunities in local procurement.	Conduct review of current local buying of corporates. Increase reporting on it. Apply recommendations of Queensland Local Content Leaders Network Better Practice Local Content Review.



"It's our home and our home is about having the basic needs — and I find I'm constantly fighting to ensure we have those basic needs. Most importantly, it's what happens from here."

CHERIE MILLER / RESIDENT

7. Conclusion

Endorsements + Testimonials

Smart Transformation Advisory Council

"This has been a valuable experience. I think this is a good start - I think it's been excellent - a lot of work has been put in by a lot of people. We know what the community needs and believes they want. But this is only the tip of the iceberg and it needs to go further to implement the roadmap. Without effort, the work will stagnate - Dysart needs to have a louder voice. We need to have the communities agenda at heart, pushing..."

— Royce Bailey

"There is always a bit of scepticism about this sort of change, and the first train of thought when there is talk of automation and the future is job losses - we know now that that may or may not be the case. The forward plan is to preserve what we have in this community and grow it - it's now the community's job to try and sell the ideas to big business to set up here."

— Brad Crompton

"As far as the Smart Transformation process goes it has been useful, though we still have to do more communication with the community, on how things are changing and what we can do. You've got to get the majority looking forward rather than looking back, because they all need to get behind it, to be able to make the opportunities reality."

— John Crooks

"The Smart Transformation process helps the community and its children prepare for the next era of technology. The company's investment in the Bright Minds initiative is a significant demonstration of its commitment for the 6000 kids in the Bowen Basin to learn about technology."

— Anthony Edwards

"The consultation phase was good. It enabled me to plan, and work out what's possible, get the details in order, however I feel that perhaps we need to put one foot in front of the other and take the next logical step which should be an action, taking into account the resources, infrastructure and people we have to make it happen. We should get on with it."

— Teena Elliott

"To build a stronger future in Moranbah, it's really important that we have our communities and kids involved in planning for the fourth industrial revolution. The Smart Transformation process has helped us understand and prepare better. Now we need to progress some of the Roadmap projects."

— Richard Engel

"As a town, Dysart has the housing, the roads, the sporting clubs – and now we have to bring the "heart". As a community, we are responsible for our own fate, our own future and we need to rally together as we continue this Smart Transformation journey."

— Liz Fox

"We need to learn from those that have already gone ahead to ensure we don't make the same mistakes and we don't contribute to small businesses closing because they can't compete. We need to support locals and their businesses to keep the Resource sector moving forward with the community beside them."

— Carolyn Fritz

"At BMA, we recognise that everyone who has a stake in the future of the Dysart community needs a seat at the table, whether it's employees, contractors, the supply chain or local communities, to make sure the path forward will take us to a shared future. The community is crying out for Smart Transformation – they want to be heard and they want a say."

— Dan Iliffe

"Technological change is coming. We can make many of the adjustments beforehand so that the negatives are few and the positives are plenty. The Smart Transformation roadmap assists in providing us in the right direction. It's up to all of us to get engaged and make this an active community process to take on the digital transformation that has kicked off in our region with the recent announcement of automated haulage at Goonyella Riverside."

— Sean Milfull

"I've thoroughly enjoyed the Smart Transformation Project - I've enjoyed discussing it with people and engaging with them breaking it down and sharing the information. There is a lot of people in town at the moment, who are fearful. But we are capable of doing this as a community, of making the changes necessary - the more we can get the messages out and grow it the better. We'll get there..."

— Sandy Moffatt

"Smart Transformation has given people the opportunity to have a voice - it's brought all the people together in the same room at the right time. We need to broaden our communications to make sure all organisations who should be inputting are, so that we can develop the community will and effort."

— Richelle Toshack

RSDC is proud to be asked to partner with Futureye to help facilitate the Smart Transformation Community Wellbeing Forums in Dysart and Moranbah.

As the regional Community Development organisation we support ordinary Community members to have a voice about this coming industry change.

The Futureye Forums provided Community with this opportunity.

— Dorne Wallace

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¹⁰² In targeting new industry as an objective for the Moranbah STAC, BMA's development of an on-site control room at Goonyella Riverside Mine for automation was viewed positively.

"I think the community should be banding together, being informed, being collaborative."

CAROLYN FRITZ / STAC MEMBER

The community should be banding together

Appendix One: 4IR Audit Measures

1. Pre-4IR Status Quo	2. Low Transition	3. Moderate Transition
<ul style="list-style-type: none"> Promotes or confirms minimal adjustments to 'status quo' practices/models Maintains a parochial approach to regional opportunities Maintains a co-dependent relationship with industry (patriarchal) Fails to identify and/or engage with sustainable technological opportunities Does not contribute to regional, strategic, comparative advantage Characterised by undeveloped issues that do not engage with the 4IR agenda 'Light' or no engagement with or information provision to stakeholders Defensive/dismissive approach to critics Opaque process where stakeholder responses are delayed or non-existent Expert assessment of risk (infrastructure-centric; technology-centric; sustainability-centric) Technical assessment of success 	<ul style="list-style-type: none"> Basic formal system and processes Rationalise problems – emphasize positives, ignore/gloss over negatives Improvements are implemented but overall minimal adjustments to status quo business practice 'One-way' engagement with stakeholders Awareness but no acknowledgement of critics or criticism No intention to change Maintains a largely parochial approach to regional opportunities with low-level understanding of, or action on, broader cross-regional/global opportunities Minimal engagement with technological opportunities or contributing to building a regional, strategic, comparative advantage Low level understanding of perception risk (managed by benefit-selling) and largely confirms technical understanding of risk and technical assessment of success 	<ul style="list-style-type: none"> Evidence of a formal system and processes but inconsistent or ineffective Regular issue tracking and quantifying Ad hoc implementation of strategy Low-level two-way engagement with stakeholders and some evidence of acknowledging and engaging critics Despite engagement with critics only limited capacity to change position Aspire to transparency but knowledge/understanding remains within institutional realm An understanding of innovation within a broader domestic and international context, but limited action/implementation Engagement with technological opportunities but siloed to immediate project needs (rather than building regional strategic comparative advantage) Technical assessment of risk with perception risk managed through benefit-selling approach

Measures	1. Pre-4IR Status Quo	2. Low Transition	3. Moderate Transition	4. Pre-Transformation	5. Smart Transformation Ready
Community resilience / Self-perception					
Just transition / Climate change / Jobs					
Technology use / 4IR					
Community vision					



4. Pre-Transformation	5. Smart Transformation Ready
<ul style="list-style-type: none"> Change in identify and trend to believe in the opportunity 4IR provides Embedded systems and processes for engagement, skills uplift and collaboration Constructive, credible, balanced defensiveness Some initiative to discuss dilemmas from multiple viewpoints including critics Responds constructively to stakeholder/community outrage Transparent and open about skills/capabilities of organisation now and in the future Formalised and regular issue-tracking and responses Awareness of the issues and capacity to engage Some understanding of skills transformation linked to infrastructure/sustainability or technology-centric approaches A level of investigation and possible investment in regional and/or broader value chain opportunities Fits initiatives into existing governance models Links innovation and seeks partnerships with different sectors (some new, possible 'sustainable') – but not linked to identified 4IR growth sectors Evaluation of success is collaborative but largely technical 	<ul style="list-style-type: none"> Has created a mindset shift from 'business as usual' to innovation 'in depth' Mature dialogue with stakeholders, seeks and responds to negative feedback Resilient and adapted community feeling future-fit Felt mutuality between resource sector, its supply chain and businesses that support its communities Uses a transparent process/ accessible information that increases stakeholder knowledge of aims and outcomes and earns trust Evidence of understanding that issues are about facts and perceptions Strong management processes and proactive assessment of public expectations on key issues and perceptions of management performance Innovation triggers are mapped against current and future societal expectations Actively prepares stakeholders (skills, capability, opportunity) for the 4IR transformation Actively links innovation with sustainable, technological development/4IR growth sectors Seeks out value-chain collaboration domestically and globally Seeks new and responsible governance models as relevant Actively contributes to building regional strategic comparative advantage Introduces partnership options to solve significant issues (e.g., connectivity) Evaluation of success includes social acceptance

Appendix Two: Smart Transformation Advisory Council Terms of Reference — November 2019

In the coming year and for the next decade, the Fourth Industrial Revolution (4IR) will lead to rapid and significant change due to transition and technological advancements. To support the local community and businesses understand the impacts and opportunities associated with the 4IR, BMA has commissioned Futureye which has a long history of facilitating industrial communities, to prepare for a more sustainable and empowered future.

Futureye is exploring the opportunities the Dysart and Moranbah communities have to transition effectively through an assessment of readiness, a baseline community assessment and an impact and opportunity analysis. To do this Futureye will form and facilitate Smart Transformation Advisory Councils (STACs), undertake public engagement to build awareness and validate the needs/opportunities that the 4IR and a Smart Transformation offers.

The STACs will initially operate through May 2020, after which the process will be reviewed, and a decision made on their continuation.

Role of the Councils

The primary role of the STACs is to provide ongoing participatory forums to identify social impacts and opportunities of the 4IR as defined by the communities of Dysart and Moranbah.

Meetings

The STACs are proposed to meet in November, December, February and March for a two-hour meeting. Meetings would:

- Exchange information between members about the 4IR and social impacts and opportunities on the communities
- Review themes identified in SIOA and validate if agreed by STACs, or update as required, to reflect issues of relevance to 4IR as well as identify potential mitigations and opportunities including those related to:
 1. Skills and training
 2. Community wellbeing
 3. Business opportunities
- Review existing BHP/BMA partnerships and recommend ways to enhance engagement with the community.
- Raise awareness and understanding of the community within the agreed information release protocols.

Representation on the Advisory Council

The composition of the Group is designed to represent a broad spectrum of the community, including representation from the following:

- Local business owners
- Community leaders
- Education and training sector
- Medical, allied health and community services sector
- Youth representatives
- Employee representatives

Roles

The role of Council members is to:

- Represent the community and business interests as members of the Moranbah and Dysart community.
- Report on issues, impacts and opportunities of 4IR as identified by the community.
- Provide an advocacy role for the community and engage with the community at two community forums in November / December and February.

BHP/BMA will:

- Use the STACs as a Consultation Process that engages the community over and above required statutory obligations to ensure an effective interface with the community.
- Represent BHP/BMA's position in response to issues raised. BHP/BMA will be represented by local Management as well as Community Relations staff.

Facilitator

Futureye Managing Director, Katherine Teh, will participate as the inaugural Chair and Facilitator, to ensure that a fair and reasonable exchange of ideas and views occurs, and that all members have a chance to contribute.

Representation to the Council

It is intended to have the meetings for the membership only.

Individuals or organisations may also be invited to attend as visitors. Invited visitors will have no automatic speaking rights. They would be expected to make contributions through the Chair. If there has not been time to inform the Group of a visitor attending, then the Chair must introduce the visitor and ask the Group if the visitor can stay.

Appointment of Members and Filling of Vacancies

Members

It is intended that the Group have flexibility in the way it appoints members. Members can be appointed either by:

- i) a public advertising process; or
- ii) invitation of persons with particular expertise which is of relevance to the Group.

New members can be put forward by the group for discussion.

Membership terms are through May 2020 with an option for each member to nominate for up to two years. Turnover in membership must be staggered to ensure consistency between the incoming and remaining members (a rolling turnover).

Meeting and Communication Protocols

Internal —

- Celebrate successful outcomes – acknowledge when something has worked.
- Council members are encouraged to bring issues to the group, to enable a frank discussion of the causes and address negative outcomes.
- Presentations at meetings to be negotiated around issues as they arise and be as efficient as possible.
- A Futureye representative will take the Minutes and be responsible for their distribution.

External —

- All public comment relating to the business of the STAC must be made through the Chair or through their nominee. An individual representative's view may differ and needs to be expressed as such, i.e. as an individual view, and not that of the STAC.
- Council members are free to speak as individuals, but as a show of respect to the group, are requested to first bring it to the group, to determine if it can be addressed.
- Effective communication to the community is important.

Values and Principles of the STAC

- Trust and a spirit of cooperation is to be developed between members.
- Teamwork, timeliness, perseverance and patience will be expected.
- Some issues may need a confidential discussion, and, at the completion of the discussion, the Group identifies the information for release and any notes to be recorded.
- Members are entitled to discuss their views in a frank discussion that is respectful.
- It is intended that members will develop a sense of belonging to the Group and value their involvement in the Group.
- Accountability: BHP/BMA will accurately represent the company's position and communicate their intent to the STAC.
- Comments made to and from political interests to be factually correct.
- Provide the opportunity for the Council to adopt these principles and values in the first meeting.

Appendix Three: Community Forum Input

Dysart

Community Wellbeing		Skills and Training		Business	
OPPORTUNITIES	CHALLENGES	OPPORTUNITIES	CHALLENGES	OPPORTUNITIES	CHALLENGES
<ul style="list-style-type: none"> Collective advocacy for improving town facilities Collaboration across business and services Promotion of and advocacy for our town and the perception of it Utilising health services and community organisations 	<ul style="list-style-type: none"> Involvement, commitment within the community, to the communities Lack of resources - people, fin, physical Lack of activities for young people Lack of funding Conflicting perspectives Some voices are not listened to, others too much Change in people's perspectives 	<ul style="list-style-type: none"> Connectivity – digital is a must Multipurpose facility (training) Attract skills trainers and teachers Develop and run training 	<ul style="list-style-type: none"> Training for the workforce in the transition Internet connectivity Access to uni courses in technology Not many options for older people Training facilities for jobs in the fourth industrial revolution 	<ul style="list-style-type: none"> Recognising, overcoming and supporting anxiety of change Govt centres of excellence and training Business opportunities – shops Industrial land availability, industry support - supply of equipment Purposeful technology - infrastructure 	<ul style="list-style-type: none"> Digital connectivity Digital infrastructure and accessibility Financial support for business Competition Local expertise — using and valuing Attraction of staff and opportunity for your people Shopping centre upgrade
Residential land availability	Look at what type of shifts and consequences to communities	Retraining for new professions	Training for workforce during transition of changes	Community supporter	IT connectivity
	<ul style="list-style-type: none"> Fatigue community members 	<ul style="list-style-type: none"> Dysart as central training hub for future in mining 	<ul style="list-style-type: none"> Internet connectivity Access to university courses in technology Not much options/help for older/disabled people 	<ul style="list-style-type: none"> Counselling Transportation (local taxi) 	<ul style="list-style-type: none"> Start up support infrastructure hard wave accessibility
Advocacy – support each other	Resources	More facilities for training	Training facilities for jobs of the 4IR	Developing centres of excellence	Financial support
	<ul style="list-style-type: none"> Long term commitment to town 	<ul style="list-style-type: none"> Local training centre Skilled teachers Local expertise Future for kids – employment School programs 		<ul style="list-style-type: none"> Online coaching Employment opportunities The world becomes your oyster 	<ul style="list-style-type: none"> Access to grants and financial help
Leverage resource	Conflicting perspectives	Autonomous control centre in D	Mindfulness training	Industrial land availability	Competition
	<ul style="list-style-type: none"> Some voices louder than others (not necessarily more important) Hearing quiet voices Managing different ideas, views of the moved, expected outcomes Working together to be heard Not being listened to – the needs of unique communities 	<ul style="list-style-type: none"> Support industries for 4IR. Set up Dysart 	<ul style="list-style-type: none"> Working with the changes Government moves too slow to be ahead of developments 	<ul style="list-style-type: none"> New shops (2nd hand stores, takeaways, bookstores) IT tech Collective action around improving quality of facilities (shopping centres, etc) New vendors to town KFC A lot of individual tradespeople, artisans, etc. Co op. Supplying product and trades locally whilst teaching trades, etc., locally. Money stays within community Local business opportunities. 	<ul style="list-style-type: none"> Not utilising or valuing local expertise
Connection	Disengaged, apathetic community members	Counsellor		Expertise	
<ul style="list-style-type: none"> Find out where your power is (and who holds it) Building strong networks Working together to be heard Strengthen networks – improve communication 	<ul style="list-style-type: none"> Negativity (nothing will change) Community does not believe they can make a difference Continuous community events within whole community not just certain clubs or associations. Music, arts, luncheons, cabarets, concerts, fun days. 	<ul style="list-style-type: none"> Connectivity bandwidth availability Online opportunities open up endless possibilities (not restricted by what's available) 	<ul style="list-style-type: none"> Positive thinking and outlook training 		<ul style="list-style-type: none"> Attraction of staff Opportunities for young teens to get jobs or start jobs

Dysart

Community Wellbeing		Skills and Training		Business	
OPPORTUNITIES	CHALLENGES	OPPORTUNITIES	CHALLENGES	OPPORTUNITIES	CHALLENGES
Build a strong and resilient community <ul style="list-style-type: none"> Clean ups around Dysart: rubbish, gardens, parks. Raise the positive profile of the community Create a positive perception about living in a small/rural community 	Involvement <ul style="list-style-type: none"> Wanting people to be a part of the community and give their input on committee 	You have a future <ul style="list-style-type: none"> Adult tradespeople/craft people invite children to learn 		Online marketing <ul style="list-style-type: none"> Online selling products What's trending to create ideas 	Shopping centre <ul style="list-style-type: none"> Shopping centre needs upgrading
Compassion <ul style="list-style-type: none"> Support people when vulnerable – community unity Government listening to their people and making changes 	Funding <ul style="list-style-type: none"> Sustainable funding Lack of funding State government not recognising part time resident workforce No equestrian community – mines own 360° of Moranbah. No racehorse trainers. High paddock rent Visiting/access to medical professionals/services 			Purpose built technology labs and infrastructure	Upgrade airport to accommodate central hub of Dysart
Strengthen our communities <ul style="list-style-type: none"> There is growing interest and obligation to listen to communities from big corporation, local, state and federal government. It's time for a louder regional voice 	Value system not supported				Transparency of corporate organisations to employees
I am strategist <ul style="list-style-type: none"> Change perceptions about our community – improve livability Celebrate what they (Dysart) have already achieved Support community that they have a future 	People's perspective <ul style="list-style-type: none"> Census population stats. FIFO - etc 				Transient <ul style="list-style-type: none"> Central warehouse facilities Same conversations 5 years on

Moranbah

Community Wellbeing		Skills and Training		Business		Personal Development	
OPPORTUNITIES	CHALLENGES	OPPORTUNITIES	CHALLENGES	OPPORTUNITIES	CHALLENGES	OPPORTUNITIES	CHALLENGES
<ul style="list-style-type: none"> Personnel resourcing Physical resourcing Flexible work in childcare Community forum/round table about opportunities Using/growing community knowledge 	<ul style="list-style-type: none"> Lack of services / recruitment Connectivity of city groups Housing - availability and affordability Lack of services (PT, childcare, accommodation, infrastructure) Lack of government support - local, state, federal 	<ul style="list-style-type: none"> Enhance education partnership New education technology Upskilling, new pathways Youth - Future You skills curriculum Opportunities for future generation 	<ul style="list-style-type: none"> Community centre - skills & training offering across the demographics Staff resourcing - skills for sustainability People who are able to inspire for skills and training Opportunities for work in placements Vision is needed (good, pathways) 	<ul style="list-style-type: none"> Education - TAFE, new skills Supporting brand "local" New business opportunities Business collaboration + new start up support Promote, leverage opportunities, i.e. industrial tourism, access to politician visiting, Reassessing things that come to the town 	<ul style="list-style-type: none"> Skills - right people in the right time and place Infrastructure Acceptance and adaptability of people Cost of doing business in the regions 	<ul style="list-style-type: none"> Flexibility to work differently (from home, dif. hours) Social engagement More flexible educational opportunities Encouragements to set goals (have a vision) Build resilience 	<ul style="list-style-type: none"> Social engagement Isolation, loneliness Limited access to 4IR information Possible unemployment for low-skilled tech worked
Resourcing	Recruitment of medical staff/ healthcare services	Growth pathways	Pathway and endpoint	Education	Right people, right time right place	Value	Isolation being regional
<ul style="list-style-type: none"> Personnel Youth development role More health care support Job growth in aged care Health and wellbeing officer (local) Physical Longer term/view funding models Long term funding – stability, industry collaboration Tapping into available support for economic and social development Shared community funding (community chest) More buy in industry partner Drug rehab centres Building education facilities More housing Aged care facilities 		<ul style="list-style-type: none"> Provide training pathways for jobs of the future Identify pathways to new jobs New career pathways Education i.e. Universities in regional Enhanced education partnerships – inter industry More communication and knowledge (growth) Training for new skills Trade specific opportunity to tailor pathway e.g. more auto electricians for autonomous trucks 	<ul style="list-style-type: none"> Ensuring access to technology for lower-socio-economic Getting accredited training ready in time for new skills 	<ul style="list-style-type: none"> Tafe/uni campus in Moranbah Delivering training for new skills 	<ul style="list-style-type: none"> Not having a stable workforce Retaining staff to support growth in business Skills of SME's to move into 4IR confidently Lack of time to make positive changes 	<ul style="list-style-type: none"> Resilience co. 	
Using and growing community	Connectivity of community groups	Training for young people	Work placement	"Lever local" support local	Infrastructure	Dog parks to encourage personal engagement	Access to 4IR information
<ul style="list-style-type: none"> Building capacity of young leader "Grow your own" More community sessions wider range of people/ groups to increase everyone's knowledge Sense of 'place' for Moranbah community 	<ul style="list-style-type: none"> Corporate volunteers Busy lifestyle Transient population Population – nonresident census Respecting diverse perspectives to enable a way forward Housing – availability and affordability Connecting communities program (settlement program) Accommodation is a major barrier to services in this community Housing affordability for non-mining i.e. services support roles Attractiveness of town to newsletters e.g. services/childcare 	<ul style="list-style-type: none"> Courses/traineeships options within schools to provide and prepare our generation for the 4IR Schools/universities basing courses on likely jobs of future. Offer 'future you' at high school School curriculum reflects future workforce 	<ul style="list-style-type: none"> People usually work best when face to face. Online/self-paced has higher failure rates 	<ul style="list-style-type: none"> In a location where it's happening i.e. ability to test and discuss easily with people when need innovative solution Forced to think strategically due to imminent change. Bigger market due to technology advances. Reduced laborer costs. Value of local knowledge Buy local/rural/handmade/green choices by Australians 	<ul style="list-style-type: none"> Accommodation for SME employees Digital connectivity Transport and poor roads for people to visit Acceptance and adaptability Different ways of looking at the world Resistance to change from employees Appetite to change and adapt 		

Moranbah

Community Wellbeing		Skills and Training		Business		Personal Development	
OPPORTUNITIES	CHALLENGES	OPPORTUNITIES	CHALLENGES	OPPORTUNITIES	CHALLENGES	OPPORTUNITIES	CHALLENGES
Flexible work and childcare	Lack of services	Re-training opportunities for the older generations	Staffing resources	New business	Cost of doing business in regions	Goals	Loneliness, difficulty making connections
<ul style="list-style-type: none"> • More childcare facilities • Flexible working hubs – eliminate childcare challenges 	<ul style="list-style-type: none"> • Lack of public transport • Community services/ infrastructure (childcare, health services, accommodation and availability – service roles) • Safer roads • Adequate tech infrastructure? • Land development 		<ul style="list-style-type: none"> • Retainment and sustainability 	<ul style="list-style-type: none"> • Keeping local spend where possible • Identify new business and potential opportunities • Opening business location (can be based anywhere) • Business incubator to create meaningful and adds value business 	<ul style="list-style-type: none"> • Cost of rural (inflated prices) • Instability of local economy. Rent goes up due to mining demand. Retail goes down! • Cost of production for SME's in rural locations competing with chain stores • Must support local business – livability for the town! 		
Ongoing community forum or roundtable for all interested groups	Lack of support on all levels	Self determined	Heads of education/schools sticking with 'old school' subjects.	Business collaboration		Tailor my education to take advantage of changes to the industry e.g. more knowledge of what autonomy entails	Possible unemployment for low skilled/non tech workforce
<ul style="list-style-type: none"> • Connected communities resource reinstated with collaborative industry funding support • Community action group • Invite council to group meeting • Form a community group • Community roundtable • A whole of community group "coordinating team". Community reference group • Community ideas and resources hub • Further community/collaboration across organisations • Facilitate increased community collaboration 	<ul style="list-style-type: none"> • People/groups/orgs working together to effect change • Local, state, federal government understanding of challenges • Funding • Youth development officer • Connectivity to access external resources • Resource community groups • Communities to work together and connect • More buy in from all industry partners 		<ul style="list-style-type: none"> • Learning pit • Spoke and Hub Community Centre of Excellence (not just school) 	<ul style="list-style-type: none"> • Share "hard to resource" resources e.g. professionals, shared office spaces 			
			Recognising new skills	Promote and lever focus		Creating community support groups	
			<ul style="list-style-type: none"> • Want to be a better person • Will skills I have now benefit me in finding work in the future • Social determinants • Funding access. Money. 	<ul style="list-style-type: none"> • Lever focus on Moranbah that Automation will attract • Tourism to our area, promote • Advertising local area • Be the first in the area/community 		<ul style="list-style-type: none"> • Flexibility to work differently (hours, home, remote) • Steer my kids (as much as possible) into relevant pathways that increase likelihood of stable employment • Social engagement 	

Appendix Four: Smart Transformation Readiness Assessment Consultation Process

Following the completion of the first draft of the Smart Transformation Readiness Assessment (STRA) report, an online consultation process took place whereby stakeholders were invited to provide feedback on the report.

Objective

As the Readiness Assessment involved work by Dysart and Moranbah community members with the aim of providing a platform and roadmap to guide the future development of these towns, the objective of the consultation process was to allow community members to review the draft document and provide feedback for consideration.

Methodology

BHP promoted the consultation process for the STRA and Community Roadmap through their social media channels. Targeted Facebook advertisements were sent to members of the Dysart and Moranbah communities. BHP also utilised their internal communication channels to request feedback on the report.

In total, 133 stakeholders, including residents, local business owners and members of community organisations were invited to the consultation process directly via Electronic Direct Mail (EDM) by Futureye. Futureye also promoted the consultation process on their Facebook page.

Additionally, Futureye's Managing Director, Katherine Teh, promoted the Smart Transformation project and the consultation process for the STRA and Community Roadmap during an interview on radio station 4RFM on 29 April 2020.

Finally, the STAC members further promoted the STRA report and Community Roadmap through their own networks.

The consultation process commenced on 14 April 2020 and concluded on 15 May 2020.

The process was designed for ease and accessibility to increase the likelihood of participation. All stakeholders were notified via email and were provided a link to the document on the Smart Transformation website (smartransformation.com.au).

Interested stakeholders could provide their feedback via email or an anonymous survey on the Smart Transformation website. The survey consisted of seven questions that were scored on a 5-point Likert scale (1 "strong disagree", 2 "disagree", 3 "neutral", 4 "agree" and 5 "strongly agree") with two additional questions allowing participants to provide further detail.

The questions featured in the survey are included at the end of Appendix Four.

Outcome

A total of seven stakeholders completed the survey. The average score was 3.97, indicating a general perception from respondents that the Smart Transformation project is positive for the community and that it had identified important initiatives. Where given the opportunity to comment, two respondents provided comments to further clarify their opinion.

One community member submitted their feedback via email.

No changes were recommended through the consultation process to either the STRA or the Community Roadmap. The Roadmap will now inform planning for the continuation of Smart Transformation in Dysart and Moranbah.

Survey questions

The survey consisted of seven multiple choice and two further questions requesting further explanation of the respondents' opinion.

1. I value the work that residents, businesses and community leaders of Dysart and Moranbah have done in the Smart Transformation Project.
2. The Smart Transformation Project has identified the key challenges for our community related to the fourth industrial revolution.
3. The Smart Transformation Project has identified the key opportunities for our community related to the fourth industrial revolution.
4. If the respondent answered 'Strongly Disagree' or 'Agree' to Question 3, they were asked 'What would you like included?'.
5. I believe we should focus attention on community wellbeing initiatives as outlined in the Community Roadmap.
6. I believe we should focus attention on skills and training initiatives as outlined in the Community Roadmap.
7. I believe we should focus attention on business opportunity initiatives as outlined in the Community Roadmap.
8. I believe better internet connectivity in my town is vital to delivering access to skills/ training and healthcare, along with new business opportunities, and should be a priority.
9. Any other comments?



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