

# Innovation for Integration: School-VET Pathways to a Learning Culture

Jillian Blight and Darryl Dymock

Australia does not have a strong tradition of value-addition linkages between education and industry. Yet such collaborations can result in changes to the perceptions of both groups. In particular, teachers' views of learning can change radically - the workplace can be the classroom and practical workplace skills can link with the 3Rs. Industry can actively contribute to social capital through such goals as corporate citizenship and training options. At the same time companies can contribute to building the skill capacity of communities – both potential workers and current employees - to meet the labour market and economic needs of Australia.

As described in the case study presented here, an innovative partnership model in South Australia, *Manufacturing Learning Centres*, has been developed to facilitate not only the school-to-work transition in manufacturing enterprises, but also to enhance the development of a learning culture within the organisations.

## Background

The evolution of *Manufacturing Learning Centres* has taken place within two other significant developments: the national training agenda and an increasing interest in learning in the workplace. Training reform has gathered momentum in the past decade under successive Federal governments, and has been substantially in the hands of the Australian National Training Authority (ANTA). Major features of the national training program include:

- Training which integrates industry, enterprise, and individual needs, and supports lifelong learning
- Competency-based training, achieving national industry and enterprise standards
- More flexible pathways and delivery
- Increased access and improved outcomes for groups of people who have missed out on training opportunities in the past
- Complementary roles for on-and-off-the job training
- Nationally recognised qualifications which are portable across industries and States and Territories
- A broader range of providers who cooperate and compete to meet national and international training demands (ANTA 1994,1, quoted in Hager, P. 1998, 30).

These objectives have been complemented by the establishment of the Australian Qualifications Framework (AQF), which provides national accreditation pathways, from a Vocational Education and Training (VET) certificate to university postgraduate qualification. One of the most recent significant developments has been the integration of individual learning 'modules' into training packages, designed in conjunction with industry and offered through Registered Training Organisations (RTOs). As will be seen, the Manufacturing Learning Centres model is particularly consistent with the first five points in the list above. However, the model also picks up on the increasing focus on the workplace as a site for learning and the development of a culture of learning (Boud and Garrick, 1999, Hager, 1998). A learning culture has been defined as one where 'the conditions for workplace learning are part of a work group's experience and history; where learning opportunities are valued to the extent that they are actively discovered, invented and developed; and, are structured into the organisation's functioning so that opportunities for new learning could continue' (Owen and Williamson, 1994, 76). The MLCs model actively encourages the development of such a culture in the manufacturing companies which belong to the MLC network.

The manufacturing industry is the largest employer of Australians in full-time occupations but it is facing increasing competition and an ageing workforce. To meet the challenges it is

continually investing in new technology, new skills and quality systems. Companies constantly revise work practices to foster ongoing training and development of their workforce. Yet not all companies are familiar with the 'finer points' of the national training reform agenda. They do not understand training packages, on-the-job assessment and how to combine career pathways and options for young people with school, work and study. It is also true to say that not all education workers understand the skills and qualities industry needs in its current and future employees.

Equally, the industry recognises the need to attract the best young people to secure its future. The manufacturing sector has suffered from a poor image, with students, parents and teachers lacking understanding of the opportunities that the sector offers. Young people need encouragement to choose careers within the manufacturing sector. Manufacturing Learning Centres have taken up the challenge to build collaboratively the cultures of companies and education organisations through learning based on common language and understandings.

### **Manufacturing Learning Centres**

Manufacturing Learning Centres (MLCs) grew from a collaborative project that commenced in 1991 between Mitsubishi Motors Australia Ltd (MMAL) and six local schools aimed at raising the profile of manufacturing in the community. The MMAL/Department for Employment, Training and Education (DETE) Joint Venture was structured so that students could complete on-the-job learning programs. Students develop industry-specific competencies and generic work skills in communication, teamwork, problem solving, and planning and organising while at the same time contributing to the output of the host organisation. Entry is competitive so that the overall process reflects real-life recruitment practices. The program is based on mutual ownership and Mitsubishi, now with other companies, have embraced the partnerships within their HR strategies.

The skills of the core partners are harnessed and employees and teachers work together to prepare students to apply (in writing) for positions. Short-listed applicants attend an interview and, for the production area, are given a medical examination. Prior to commencement, MMAL industry trainers deliver sessions to improve work skills and key competencies. During the program employees' mentoring and supervisory skills are fine-tuned, developed and improved as they work with the young people. At the end of the placement, students' communication and presentation skills are demonstrated and assessed in an oral presentation to other students, industry mentors and managers, parents, school and TAFE staff. Students describe their workplace experiences, learnings and reflections. Presentations provide the workplace mentors and school teachers with opportunities to share the learning strategies and assessment activities of other mentors and to reflect and review their own practices. The process provides teachers with a broadened understanding of the learning and experiences that can occur in the enterprise and helps them to see how students benefit from being involved.

This partnership concept has been broadened into what is now known as Manufacturing Learning Centres. It builds on the model already being implemented at Mitsubishi Motors, and encourages suppliers, dealers and other manufacturing companies to see the benefits for themselves and for the young people involved. Students from an expanded number of secondary schools across the state have real-world experiences in a greater number of manufacturing companies. "What sets MLCs apart is the specialised nature of the training and the emphasis on understanding the skill needs, standards and culture of a particular manufacturing business," said Dr Ross Bensley, Manager, Organisational Development, Schefenacker Vision Systems, one of the manufacturing companies involved (pers comm, Feb. 2002).

### **Collaborative Learning Clusters**

The strategic plan for MLCs is in line with the national priorities and directions as outlined in *'The New Framework for Vocational Education in Schools'*. The mission is to develop innovative partnerships that provide on-the-job learning, qualifications and employment for a skilled manufacturing workforce. The plan has four main goals:

- **Partnerships** – create new (and improve existing) partnerships which build manufacturing, employment and education groups into a state wide network
- **Skills in Demand and Business Confidence in Education and Training** – enhance the development of the learning culture in manufacturing enterprises based on market driven competencies, innovation and life long learning
- **Customer Focus & Career Pathways for Students and Employees** – contribute to a skilled workforce for the manufacturing sector through career choices, on-the-job learning and traineeships
- **Leadership** – that the manufacturing learning centres model is valued at regional, state, national and international levels.

The new learning programs or career streams are related to engineering (CAD), trades, information technology, polymer technology, automotive manufacture (engine parts machining, engine and car assembly) automotive retail service and repair (tyre fitting, wheel aligning, detailing, general servicing), business services and hospitality. There are also plans for new career streams in general manufacturing (metals), warehousing and logistics and electronics.

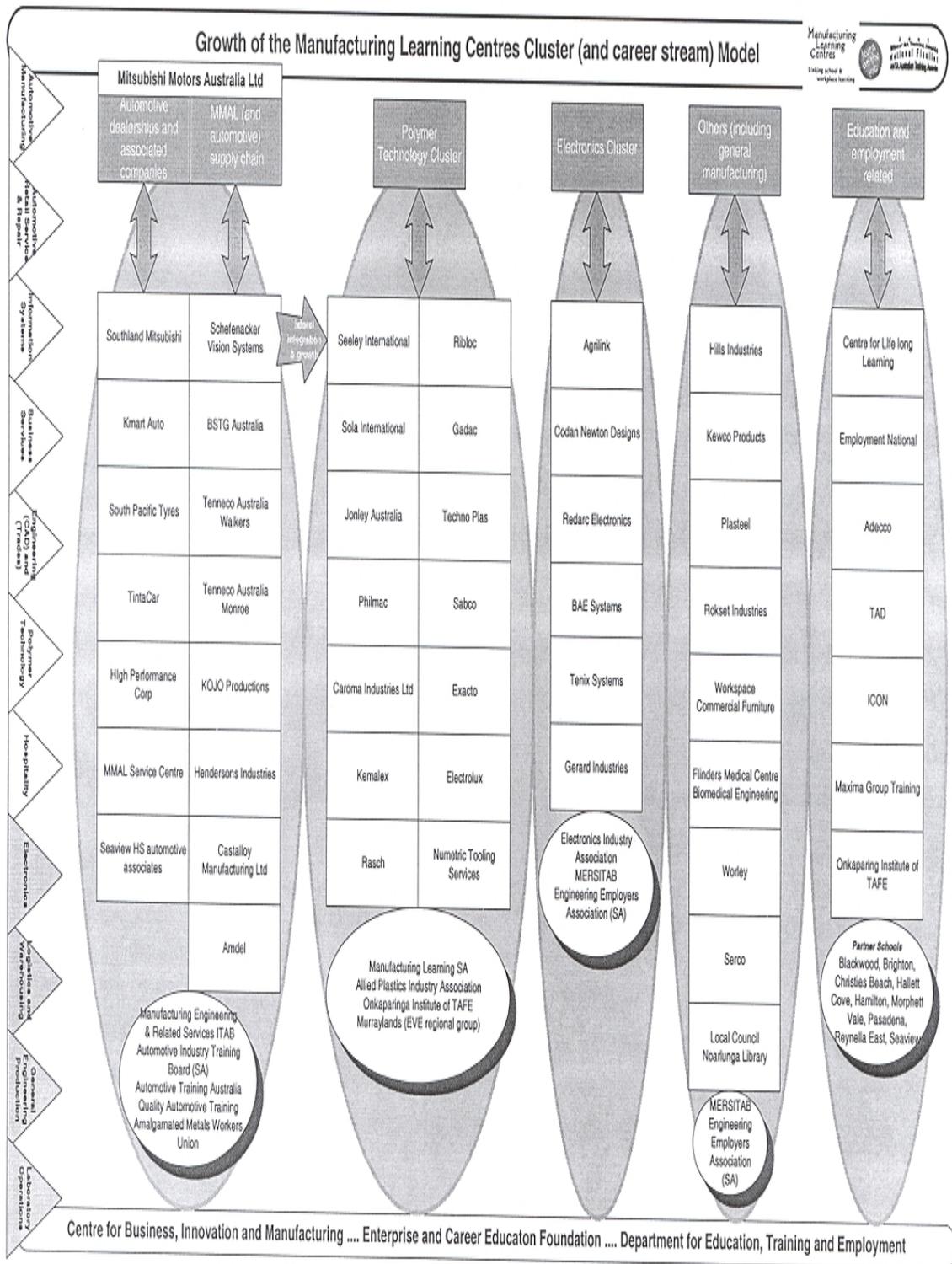
The Manufacturing Learning Centres project is pioneering a forward thinking, integrated industry approach to education and industry partnerships. What starts out as an education-industry relationship results in growth of industry-to-industry partnership. Leaders from different companies working together towards a common goal for youth, find further opportunities to collaborate in adding value to other aspects of their company operations.

More than 50 networked manufacturing enterprises, education and community organisations form the ever-growing ‘collaborative learning cluster.’ The partnership is growing using a supply chain and lateral growth model as per the diagram shown in Figure 1 (see below). Some of the companies shown are still negotiating their involvement, and are included only to show the range of manufacturing companies potentially participating.

## Outcomes

The MLCs model builds capabilities and skills through ensuring that:

- Client centred/demand driven training programs are developed (as opposed to the traditional supply driven approaches) with student selection mirroring human resource practices
- A positive image of the manufacturing industry develops which attracts young people into training and employment programs that are delivered and assessed on-the-job in manufacturing companies. (The programs are designed collaboratively (using action learning and professional development change models) to address the range and mix of skills needs identified by companies.)
- On-the-job training is customised and tailored to industry needs and becomes part of the overall recognised seamless human resource training function of the participating companies from VET in Schools to leadership and technical pathways and MBAs. (see figure 2 below)
- Manufacturing career and training opportunities promoted through MLCs to young people in schools and TAFEs result in students (a) having access to labour market and course information, (b) gaining greater understanding and access to the pathways from school to traineeships and employment either directly into the companies or through labour hire arrangements, (c) acquiring job seeking skills relevant to the labour market of the 21<sup>st</sup> century, and (d) seeing the relevance of lifelong workplace learning within a training and career pathway.
- Generic and specific work skills required by current and potential employees are linked to the company training strategy and so the learning culture of manufacturing enterprises improves. Employee leadership skills improve, with emphasis on front line management and assessor training qualifications.



**Figure 1: Growth of the Manufacturing Learning Centres Cluster (and Career Stream) Model**

As new companies join the cluster new career streams are identified and developed – based on the specific enterprise skill demands - and developed in consultation with, and engaging the involvement of, the enterprise staff. This collaborative learning cluster enables its members to:

- Improve the learning culture of their enterprises, particularly in relation to careers and training pathways into and within the organisations
- Develop employee leadership, with emphasis on front line management and assessor training qualifications
- Develop generic and specific work skills for existing and potential employees.

Ian Ward, former MMAL Manager Corporate Training and Development, says that the program supports company training needs:

One particular aspect is the growth and personal development of our own participating employees. By becoming involved as program mentors, our staff have an excellent opportunity to develop such important skills as coaching and mentoring, communication, planning and organising workloads and public speaking. It has been our experience that the development of these skills in the actual workplace setting as a result of the program, is as good as, if not better, than the more traditional off-the-job approach to interpersonal skills training. It is certainly more cost effective! By then applying those acquired skills in the broader work situation and in their interaction with co-workers, our employees are able to contribute more effectively to their departments and the company overall.

## **Process**

Change management strategies built on work-based learning principles have been the basis for the success of the Manufacturing Learning Centres. The methodology facilitates dialogue and develops trust and collaboration between the new learning communities as Manufacturing Learning Centres develop and grow. Bringing together the expertise of different sectors enables working parties to address the cultural differences between sectors while ensuring the best solutions are found to planning and implementation issues. Such healthy partnerships serve the community and in particular, the youth, very well, as the example below shows:

In 1998 it was decided to develop new program streams relevant to new areas of manufacturing. Areas of MMAL that could possibly host students were analysed, and working parties of school, TAFE and manufacturing employees were set up, one in each of five possible stream areas – business, trades, engineering (CAD), automotive manufacturing and information systems. Each of the teams was given a task that related to the development of on-the-job learning opportunities for students. Each group interprets, for example, workers' job roles (for example, engineers and production team members) in the light of training packages and provides the input necessary to write the resources and assessment materials essential to implement the certificate on-the-job. Teachers provide the school certificate picture and work to ensure that school commitments and timing constraints are accommodated. The result – the introduction of 5 program streams – accredited 'modules' with VET in SACE arrangements delivered and assessed completely on the job and reflecting industry standards and recruitment practices.

Students now make V6 Magna and Verada engine parts and assemble engines at the MMAL Lonsdale Manufacturing Plant while completing competencies relating to the Vehicle Industry Certificate and two units of SACE Stage One Integrated Studies. In 2002 students work in the Tonsley Park Assembly Plant building cars. ANTA will have ratified the draft training package competencies and students will get a nationally accredited Certificate 1 in Automotive Manufacturing.

Education-industry-community partnerships succeed best because ownership and responsibility are shared (including financial commitment), and the agreed goals relate to the needs of young people in a business environment. Businesses can also be committed to corporate citizenship

ideas that contribute to social capital and the fabric of society. The process cements closer cooperation between the partner organisations, as the following example illustrates:

In 1999 with the introduction of training packages and with 'modules becoming competencies', MLCs introduced complete certificate courses based on the new arrangements. Again, using the cross-sectoral partnership model, five teams were set up, (each consisting of a business education teacher from each of the stakeholder schools, a TAFE business services lecturer and manufacturing employees), to develop an industry-focused, on-the-job implementation model for Certificate 2 Business (Office Administration).

The result is a business model that now operates in more than 15 companies with over 50 students per year completing certificate 2 on-the-job. Employees (workplace mentors) identified that some competencies are difficult to deliver and assess in every departments offering placements. To ensure that all students complete all competencies of Certificate 2 special delivery arrangements for FIN201A were devised. Students attend eight two-hour sessions delivered in the training rooms at MMAL by a business education teacher from one of the partner schools. The model has become the basis for restructuring all stream offerings into complete certificates.

The project resulted in a model that now continues to operate successfully in approximately twenty companies. Participants completed nationally accredited workplace assessor training competencies as part of the learning process and, for MMAL employees, these also contributed to the MMAL leadership qualification. Additionally, evaluation revealed that participants became more aware of their learning styles, understood the constraints of the other members' sectors and were more comfortable in sharing and working across the sectors.

### **Diversifying the Partnership to New Companies**

In 2000-2001 the partnership was expanded to include training packages relevant to new companies and to provide students with more vocational learning and career opportunities in manufacturing. Staff from the new companies (Schefenacker Vision Systems, an auto supplier of MMAL, and Seeley International, a manufacturer of air conditioners) were mentored, focusing on their skill gaps, working with the training packages and with the associated industry training advisory boards and industry associations. The importance of traineeship arrangements and labour hire companies was recognised. The working party members came from polymer companies, technology teachers, RTO (TAFE) and an ITAB - Manufacturing Learning SA. Working together this group came to understand the differences in the cultures of education and industry. The process enabled participants to address the complexity of different organisations – both polymer but distinctively different. They shared their processes and practices while working together to select students. They compared training standards and shared resources and materials.

Staff of Mitsubishi Motors acted as mentors to members of the action learning group who were introduced to the task through a site visit and presentation about the automotive manufacturing program being successfully implemented at the Lonsdale Plant. The result is an AQF Certificate 1 in Polymer Injection Moulding Operations delivered in both MMAL suppliers and other manufacturing companies. The certificate, trialled by four students in 2000, involved eight students in 2001, and the model is now being replicated in the north west of Adelaide using Electrolux Home Products as the hub learning enterprise. (see figure 1 - polymer technology cluster)

The number of companies and students continues to grow as the product is marketed to the management of prospective companies, as Figure 1 shows. The model has been extended to the 'quality professional development program', in which teachers and students work with polymer quality specialists, operators and TAFE personnel to explore the notion of quality in the two enterprises. The teachers learn through such structured professional development programs and,

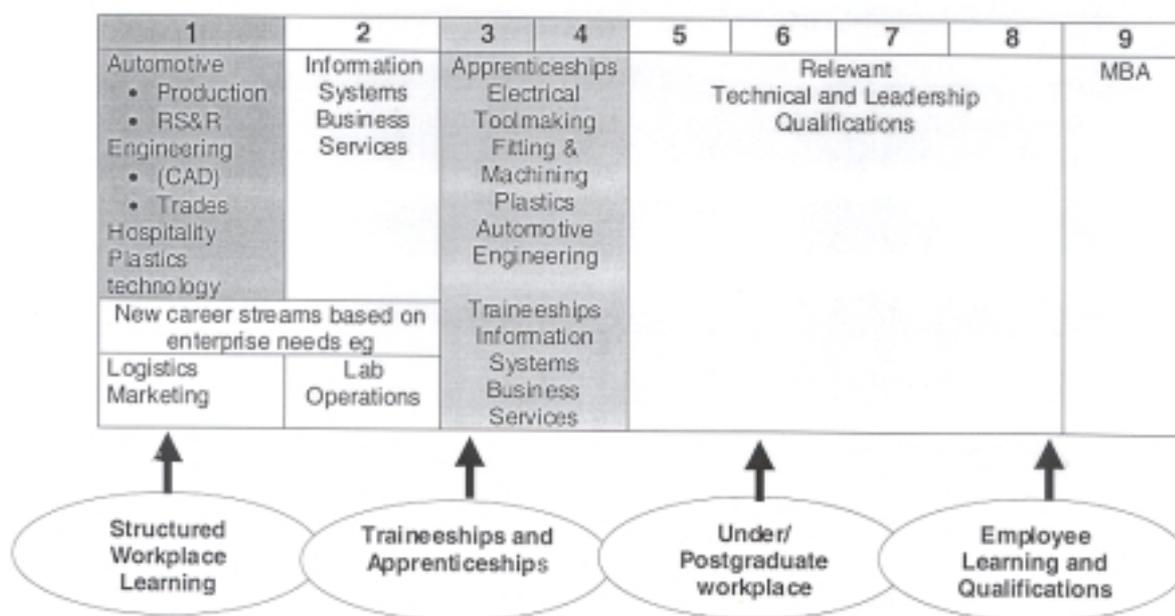
incidentally, increase skills and understanding of the manufacturing notions of quality, safety, getting-it-right-the-first time, punctuality, teamwork and workplace communication.

### Developing a Learning Culture

The Manufacturing Learning Centres model is built on a strong, lifelong learning strategy. Action learning leadership applied on a daily basis empowers the staff of participating enterprises and the many people from the other manufacturing organisations making up the collaborative learning cluster. Professional development activities are aligned to the stakeholders’ organisational goals – improving the learning culture of the organisations. The use of action learning methodology across educational/industry sectors facilitates cultural interaction and achieves agreed outcomes. Through the process of solving common problems understanding and trust are built between sectors. This creates a common language and the cultural climate for change management. Evolutionary change takes time and needs to be owned by stakeholders, and especially by shop-floor employees who are involved in the development and implementation of the vision and the practice.

In order to facilitate the integration of careers in manufacturing with training opportunities, as well as to enhance organisational learning cultures, MLCs is developing a model for structured learning at all Australian Qualifications Framework levels (1-9), which will support career pathways into and within manufacturing companies. Figure 2 shows how the various levels of training are being integrated into the AQF across a number of manufacturing industries.

**Figure 2: Enterprise Based Learning Strategies at all AQF Levels**



The certificate 1 and 2 structured learning programs are not outside the individual enterprise’s domain and responsibility but underpin and link with the company’s skill shortages, recruitment and succession planning requirements. Entry-level programs that build into traineeship, apprenticeships and graduate programs can then become integral to effective human resource practices in manufacturing. The aim is to develop structured learning that supports career options at various AQF levels 1-9 and to ensure seamless transition arrangements from school through the enterprise. By documenting and sharing enterprise examples of these learning pathways, prospective and current manufacturing employees can be encouraged to engage in life long learning. The enterprise also benefits.

Research is built into the ongoing learning cluster development in joint projects with organisations such as the Centre for Lifelong Learning and Development. The 2002 research project aims to ‘map’ the employment and training/learning histories of employees in the

manufacturing industry (shop floor workers, supervisors and managers at Schefenacker Vision Systems) against the pathways of the AQF framework on which the MLCs model is based. It is anticipated that this will provide a realistic account of career progression and the place of learning and training in that process. Research results will be shared with industry, education and community stakeholders in the MLCs. Results will inform the work of vocational education and training teachers in schools and support the MLCs' goal to market manufacturing as a preferred career option. Targeted professional development programs focusing on innovation in science and technology will complement this work.

## **Conclusion**

MLCs won the VET in School Excellence Award in the 2001 South Australia Training Awards – an award for excellence in vocational education and training, and the project was one of three finalists for the 2001 national ANTA award. It is recognised as a leader in vocational education and training provision at state, national and international levels with consultancies and presentations to key groups from Japan, China, Indonesia and Germany. Research is mainstream with projects undertaken with the National Centre for Vocational Education Research, the Enterprise and Career Education Foundation, Team Research, and the Centre for Lifelong Learning and Development.

The Manufacturing Learning Centres approach allows for a prompt response to emerging industry needs in line with the changing vocational agenda. Teams of shop floor workers, manufacturing employees, schoolteachers and VET lecturers for each stream work together with industry training advisory boards to initiate, plan, document and deliver the certificate programs. The strategy results in improved learning cultures of the participating companies, and school communities and training providers become more aware of learning, careers and work practices as they relate to manufacturing.

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