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WEST OF MELBOURNE ECONOMIC DEVELOPMENT ALLIANCE

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Expanding Scienceworks

EXPANDING & UPGRADING SCIENCEWORKS

TOO BIG AN OPPORTUNITY TO MISS

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Key points

Introduction

- Scienceworks is one of Australia's leading science museums
- It was built to accommodate 250,000 visitors but pre-pandemic was attracting 500,000 visitors annually
- A major investment would give Scienceworks a new lease of life, expand its footprint, raise the quality of its offering and broaden its appeal
- The current model is focussed on STEM education for children and results in limited interstate and international tourists
- An enhanced model has the potential to create an internationally renowned tourism attraction

Economic Impact Analysis

Economic impact analysis by leading Victoria University economist, Professor Rod Maddock, has found that the economic impact of investment in the doubling of Scienceworks' size, would be, at a minimum 200 new jobs during the construction phase and after construction about 100 new jobs due to increased tourism. Along with the Werribee Zoo, Scienceworks is one of two major cultural assets of the West of Melbourne, one of the fastest growing regions in Australia, approaching a population of a million.

Scienceworks was built to accommodate 250,000 visitors per annum but pre-pandemic was attracting 500,000 visitors annually. It has been a very successful museum with large numbers of visitors, especially families with children and school visits. A major investment would give Scienceworks a new lease of life, expand its footprint, raise the quality of its offering, and broaden its appeal. This includes the ability to host blockbuster exhibitions, thereby encouraging more tourists to the destination.

In the medium to longer term, parallel investment in the development of a West of Melbourne visitor economy strategy, would closely examine Scienceworks proximity to the planned Maritime Precinct in Williamstown. The development of enhanced tourism amenities in Spotswood and Williamstown and optimising the coastline of Hobsons Bay, could create significantly more jobs in the tourism sector of the order of an additional 400 jobs.

This would put Scienceworks firmly on the world stage and make it a major national asset for Australia as well as an asset of major state and local significance.

Hobsons Bay's close proximity to the city, by road, rail or on the water, combined with its closeness to the growing population of the West of Melbourne, gives it a critical role in future development from an educational, ecotourism, and visitor economy point of view.

Background

Scienceworks and Werribee Zoo are the only two significant State-owned cultural assets located in the West of Melbourne. Given their scarcity, upgrading these important assets will increase access to and enjoyment of high quality, social amenity.

The current Scienceworks site and facilities are an important component of Melbourne's history. It was the heart of the Melbourne sewerage system and illustrating the pumping technology of that time. The pumping station made possible the trebling of Melbourne's population between 1900 and 1950. The complex became part of the Museum of Victoria in 1989.

Prior to the outbreak of COVID-19, Scienceworks had reached its capacity constraint in its existing facilities. A major investment will give Scienceworks a new lease of life, expand its footprint, raise the quality of the offering, and broaden its appeal.

The science museum is important for education. Scienceworks attracts over 500,000 people visiting on average and will grow to 1,000,000 under alternative scenarios – about the same number as currently visit the Melbourne Museum. (Note that this paper uses 2018-9 figures where possible so as to avoid Covid distortions).

Scienceworks is particularly important to the West. About one-third of all visitors reside in our region (vs about one-sixth of Victoria's population). The people of Wyndham make best use of the facility, comprising over 10% of the total attendance, with Hobsons Bay, Maribyrnong and Moonee Valley residents also being frequent visitors.

The West is also growing quickly and attendance at the local cultural attractions is certain to rise strongly as a consequence. The West will comprise 21.3% of Melbourne's population by the mid-2030s. Even after the post-COVID revisions to the data, this means it will be home to 1.5 million people – half a million more people than at present. *Serving the West of Melbourne*

LGA	Share %
Wyndham	12
Hobsons Bay	9
Melbourne	9
Maribyrnong	7
Moonee Valley	5
Other	48

Source: Museums Victoria

The current business model is very effective at attracting locals, but less than five percent of visitors are from interstate and less than two percent are internationals. The economic impact to Victoria and the West of Melbourne would be greater if more tourists were to attend.

By contrast. "Melbourne Museum is one Victoria's top attractions for international tourists, with an average of 9.3 per cent of daily visitors coming from overseas"[3] - this means that 102,300 international visitors enjoy it, whereas just over 8,000 visit Scienceworks.

[3] Museums Victoria, *Melbourne Museum at the centre of cultural tourism boom in the Creative State*, media release 12 October 2018

High value tourist visitation is low

LGA	Number	Percent
Metro	330,687	80.3
Regional	52,830	12.8
Interstate	19,551	4.7
International	8,249	2.0
Unknown	95,908	N/A
Total	507,225	100

Source: Museums Victoria. Percentage calculations exclude Unknown origin visitors

The museum is an important educational facility. Some 84,000 students visit every year as part of educational excursions. When we add in the number of children who come as normal visitors, children make up 45% of the people who attend. As such, Scienceworks makes a contribution to our STEM education initiatives.

About 70% of visitors have been before. About 80% also visit the Melbourne Museum and 39% the Immigration Museum. Most people attend with their own children 66% and relatively few children go with grandparents. Visitor satisfaction is high (net promoter score +63).

Very child / STEM oriented

Attendance	%	
Adult alone	1	
Adult with a group of adults	11	
With Museum member	23	
Adult oriented		35
Family	48	
Visiting with educational group	17	
Child oriented		65

Source: Museums Victoria

Global trends in museums

Museums once had 'look and don't touch' philosophies. This has changed in recent decades towards an experiential model, where clients interact more actively with exhibits

Science museums initially acted as repositories of industrial objects, where objects were treated with an almost religious awe. The more recent phase has been more hands on. People, and especially kids, have been encouraged to interact with objects and to understand some of scientific principles which underlie their behaviour. In the last decade or so, this process has become more detached from objects and encouraged thinking about scientific processes, the role of science in society, and the impacts of technologies.

In parallel, countries and regions have increasingly realised the potential of their cultural assets. Many have upgraded existing museums, often featuring exciting new architecture, as helping increase foreign tourism and export earnings. Liverpool, Marseilles, Bilbao, Dubai, Sao Paolo, Singapore and Glasgow amongst many others have gone down this path.

There are other museums which have been developed mainly to enhance the cultural life of local citizens. Medellin, Colombia, is the paradigmatic example of local museums being used to develop a sense of social solidarity in previously precarious neighbourhoods. The Lowry in Salford, UK, provides another classic example of the use of an arts facility to rejuvenate an old industrial area. While the "Bilbao effect" is disputed, the benefits of integrating of local arts communities into the process of redevelopment around galleries and museums is not.

Many museums have accelerated the process of interacting more actively with the local community during this Covid period. On-line forums, meet the expert sessions, meet the curator, and zoomed lectures have become more common. While there is more competition in this space, museums tend to be trusted sources of information and have taken advantage of this, to share their knowledge.

The digital footprint is increasingly important but hard to evaluate since information today is virtually free. People can access the British Museum or the Metropolitan Museum just as easily as they can local museums.

Economic value of Scienceworks

Establishing a value of the Scienceworks museum is not straightforward. Many of the benefits are indirect, large numbers of people attend without charge, and tourists generate indirect spill-over benefits.

The principal economic value of Scienceworks museum flows to visitors who gain direct benefit in the form of knowledge which may be useful at some time in their futures, as well as through entertainment. As is clear from the attendance figures, most of this benefit accrues to local residents many of whom are in the West.

Since there is a price for attendance, we can establish a lower bound to the value by considering the amount people have actually paid.

Scienceworks has about 108,000 members who pay $99 each for membership, generating a direct payment of about $10.8m. The 102,000 other adult visitors pay a maximum fee of $15, and hence add about another $1.5m to the revenue of Scienceworks. The direct payment received by Scienceworks for admission thus adds up to about $12.3m annually.

Many of the attendees are children who attend for free. The State subsidises Scienceworks by about $20m per year, largely justifying the subsidy on the grounds that it is an important educational facility. This boosts the annual inflow to about $32.5m.

Valued as a perpetuity this suggest Scienceworks is worth over $1 billion to Victoria (assuming 7% cost of capital, 4% growth).

This is still a floor value since:

(i) local residents and businesses can capture privately some value uplift as a result of their location,

(ii) there will also be some value derived by Victorians who do not visit but derive satisfaction from the knowledge that Victoria does have such a museum, and

(iii) tourists provide another important source of benefit to Victoria.

Upgrading the Museum

In developing a plan to invest in the expansion of the museum it is important to think about ways in which its impact can be upgraded. Here we discuss three strategies: engaging corporate partners; improving the branding; and engaging more tourists.

By engaging corporates

Victoria is home to some of the world's important firms and to many significant Australian companies. Having showcases of the latest technologies developed and employed by BHP and CSL alone would be major drawcards.

The business sector more broadly should be encouraged to use Scienceworks to showcase its products and processes, educating the next generation, and providing a reason for tourists to visit. They might name pavilions and/or provide ongoing display sites which show off their talents.

Corporate philanthropy should help fund any expansion. The global standouts are obviously:

- BHP Billiton
- CSL

But there are also significant technology companies with local headquarters:

- Orica
- Telstra
- NAB
- Transurban
- VISY
- Amcor
- Computershare
- ANZ
- Medibank
- Bluescope

And important companies providing services driven by technologies:

- Melbourne Airport
- Melbourne Water
- Port of Melbourne
- Ausnet

By improving branding: rename as National Science and Technology Museum

A wave of name changes has swept over the museum field in recent years. From a branding perspective, the change and choice of new name in a major tourist city can be understood as an attempt to stand out from the group of museums. Interestingly Scienceworks as a name is ahead of this trend.

By contrast, science museums have tended to keep with descriptive titles: Science Museum in Trento, Alder Planetarium in Chicago, National Science Museum in South Korea, Singapore Artscience Museum etc. This suggests that a moving to a more descriptive title may help increase Scienceworks attraction to visitors.

It seems possible that a more descriptive label, such as National (or Victorian) Science Museum, might promote greater awareness outside the State, and possibly inside the State. The decision to involve the major Melbourne-based corporates would also be more natural is it were called the Victorian Science and Technology Museum.

It is an empirical question but should be tested, not with locals but with tourists. The most important facet of this is which name is most likely to attract foreign and interstate tourists.

Or Australian Smithsonian Museum

A grander vision could involve reconceptualising the museum as part of a collaboration with the US Smithsonian institution.

The Smithsonian is already a collection of (19) museums, all US based. The Institution, established in 1846, is governed by a board of regents which, by law, is composed of the vice president of the United States, the chief justice of the United States, three members of the Senate, three members of the House of Representatives and nine citizen members.

Clearly, a collaboration with a major international museum brand would both strengthen the range, quality and depth of material on show at our museum, but the name would also attract a much bigger visitor base, which takes us onto the third way of upgrading the museum, by attracting more tourists.

By attracting more tourists

There are examples around the world of leading science museums that are major tourist attractions. An excellent example is the Glasgow Science Centre, which is a major tourism attraction on the Clyde waterfront.

Cultural tourism is one of Victoria's and Australia's important industries. Tourism overall is worth some $23.4b – accounting for 5 percent of the economy - and employs over 200,000 people directly or indirectly. Of the total visitors to Melbourne, 15% engaged with a cultural activity, and the most popular activity for all cultural visitors is to visit a museum or art gallery (46%). Cultural visitors who experienced at least three cultural activities spent $2.5 billion in 2019 with international cultural visitors being responsible for the bulk, some $2b.

The more tourists Scienceworks is able to attract to Melbourne, the greater the economic gain.

The typical visitor currently spends about three hours at Scienceworks itself. In what follows I am assuming that a non-Metropolitan visitor to Scienceworks spends six hours in the West as part of the visit, and spends that portion of their daily budget (between $100 and $200, depending on the type of tourist) locally.

Currently Scienceworks attracts over 28,000 international and interstate visitors. If these visitors spent a complete extra day in Melbourne to visit Scienceworks this would add about $4.8m to our

tourism spend (based on Tourism Victoria's spending data). More realistically we can assume tourist spend 25 percent of an extra day in Melbourne, so that the tourism spending associated with a Scienceworks visit is currently about $1.2m per year.

Tourism Victoria suggests that each dollar spent by tourists generates an additional 80 cents in indirect spend, so that the total of interstate and international tourism from Scienceworks is currently only $2.2m per year ($1.2m + $0.96m).

On top of this, we have the direct spending of tourists for entry to the facility of about $500,000 per year.

The total then is about $2.7m which is a small impact for a major asset. There is significant potential for uplift.

Melbourne Museum reported the numbers of tourists who visited its museums in the nine months to March 2020. Extrapolating this to a full year, there would have been 149,485 international tourists and 127,456 interstate systems tourists who visited. Of these we believe that just 9,552 internationals and 22,640 nationals would have made the trip to Scienceworks in the absence of Covid.

This means that Scienceworks is capturing just 6% of the museum-tourist market of internationals and just 18% of the nationals.

A fuller museum with a wider array of attractions is also likely to extend the duration of the visit.

This has two benefits. More tourists are likely to attend and with more attractions they are likely to extend their stay and spend more, generating additional local benefits.

The way forward:

Scienceworks has prepared a business case for the further development of its site at Spotswood. The current expansion plans will double the size of Scienceworks and cater for up to 1 million visitors annually. We estimate that this would involve a capital investment of about $200mfrom the State Government.

We think that the proposed expansion would make excellent us of the site over and that some of the key features of the plan are likely to be: a new multipurpose space capable of hosting world class exhibitions ; new exhibition spaces allowing more education groups to attend concurrently; a 500 seat auditorium providing broader reach for educational programs and events; Intergenerational learning experiences encouraging the acquisition of STEM skill; a centre for teacher professional learning; a transformed entry experience for the public and schools that will accommodate the increased visitation; and a smooth path around the facility and links the old and new buildings in a coherent manner.

Student visits are important and are they are expected to increase with the new facilities increasing opportunities to provide STEM learning for students. The expansion features improved teaching and learning facilities increasing the capacity for educational visits.

It would incorporate a major exhibition venue, capable of presenting global blockbuster exhibitions, The proposed upgrade is largely focussed on providing more of the same sort of facilities and attractions, and appealing to largely the same sort of audience. The big improvement will be to reduce queues, to make the site more attractive, and to render the site more practical from an educational point of view.

Expansion of the science museum will boost employment during the construction phase, by employing more people directly at the museum, through direct spill-over effects and potentially additional spill-overs as tourism numbers increase.

Under the proposed expansion plan, the employment boost during the construction phase involves spending about $200mm. This is about one-tenth of the spending on construction of the Footscray Hospital for which we know 2,000 workers will be employed in the peak and involve 177 new jobs (VHBA press release).

The longer-term economics involves basically doubling everything about the Scienceworks museum.

The 140 staff can be expected to double to about 280. In 2019-20, Museums Victoria employed 551 FTEs overall and served 1,972,786 attendees. Using this ratio of one staff member per 3,580 attendees, the extra 500,000 attendees anticipated as a result of the expansion of Scienceworks will necessitate the employment of another 140 staff. Using ratios from Canadian and US museums suggests this figure may be somewhat low: they imply just over 200 additional employees will be needed.

Spending by visitors further boosts employment. For visitors from within Melbourne this is not a net increase, merely a diversion of spending from one part of the city to another. The key spend is that of tourists. The number of visitors will double to about 1,000,000 annually but they are likely to be roughly the same sort of people who spend the same amount of time at facility.

We already know that increased international and interstate tourism adds about $2m in spending.

Regional day-trippers spend about $100 per trip within Victoria, so assuming half of this value ($50) is due to Scienceworks, the 52,800 non-metropolitan visitors to Scienceworks spend about $2.6m directly. Indirect spending adds another $2m (at 80 cents per dollar spent) so the total from regional spending is $4.6m.

Again, we assume the doubling of attendance at Scienceworks so the total spend will double with the increment being $4.6m. Combining all tourist spending, we can expect that local spending in Melbourne will go up by about $6.6m as a result of the expansion of Scienceworks doubling its current attendance figures. This will result in about 100 additional jobs.

The overall increase in employment as a result of the proposed expansion of Scienceworks will then be about 440 jobs:

Construction phase	200
Museum employment	140
Tourism generated	100

Adding a Tourism Strategy

There are examples around the world of leading science museums that are signifcant tourist attractions. An example is the Glasgow Science Centre, which is a tourism attraction on the Clyde waterfront.

The key to increasing the employment impact of the science museum involves two key aspects:

- Getting more “high value” visitors to attend, and
- Getting them to stay longer

Currently about 30,000 "tourists" (interstate and international tourists) visit the Spotswood site. The proposed expansion will double this. Working on the assumption that tourists spend an additional six hours in Melbourne to accommodate their visits (three hours at the site), we find that Scienceworks-related tourist spending only adds about 100 extra jobs to Melbourne's economy.

Increasing the amount of time that people spend at the museum is then likely to increase overnight stays and result in a wider spread of spending – more time at restaurants and other local facilities. The estimates for the Dundee V&A Museum for example, have day trippers spending £33 while people who stay overnight spend £353 locally: tourists are valuable everywhere.

The combined effect of having more visitors attend, and having them stay longer, would each increase the employment impact on Melbourne. As the table demonstrates, rather than 100 extra jobs, there is the potential to add 400 long term permanent roles.

More tourists will increase employment impact significantly

		Longer stays	
		Quarter day	Half day
More tourists	30,000 increase	100 extra jobs	200 extra jobs
	60,000 increase	200 extra jobs	400 extra jobs

Source: as discussed in text

So, rather than the proposed expansion lifting the national and international tourist visits by 30,000, a bigger and fuller museum could have a much bigger impact. This seems practical, we should be able to do significantly better: the 60,000 extra tourists does not seem unreasonable.

There seem to be three main areas where the decision to invest in Scienceworks could be rethought in order to generate greater value for Victoria and the West:

- Boost offering
- Improve branding.
- Develop a tourism strategy for Scienceworks

Notes:

(i) This Tourism Victoria estimates may be a little low: In Liverpool, England, indirect spending was estimated at 1.17 times the direct spending, in Dundee at 1.06, the US study done for the American Alliance of Museums 0.93 times the direct effect and a NSW study put the indirect effect at 0.85.

(ii) From a Victorian point of view regional tourism is mainly an internal transfer of spending within the State not an addition to spending, but it is an increment to spending in the West considered alone.

A tourism strategy linking Scienceworks with the Williamstown foreshore

The Scienceworks site in Spotswood is quite close to Williamstown which already attracts a certain amount of tourism. Attractions such as Seaworks in Williamstown, including Williamstown beach, coastal walks and bike paths, bird sanctuaries, waterfront cafes and restaurants as well as the the Substation in Newport play an important role in attracting visitors to Hobsons Bay and raising the profile of the local tourism industry. It is easily accessible from the City of Melbourne by train or by bus, or indeed by boat. Tourists boats can also go from Williamstown and Spotswood to Port Melbourne and St. Kilda.

State government support and funding has helped in attracting events, promoting local assets and bringing visitors to Melbourne's west. In sum, Hobsons Bay is home to a visitor economy which generates approximately $294 million in output, and supports approximately 1,400 local jobs.

Nevertheless, the local economic development plan notes the need to encourage visitors Scienceworks to stay in Hobsons Bay, and broadly to increase overnight stays on weekends to address high vacancy rates. Most "tourists" come to the region to visit friends or relatives and only 1 in 8 comes on holiday.

The area has two magnificent natural assets. Its historic foreshore and its bay/wetlands seafront. The magnificent view back from towards the Westgate Bridge and the Docks and further down towards Williamstown of the city and Port Philip Bay, provides a very good setting for the museum.

At present there is not a clear strategy in place to present Scienceworks as part of a broader Hobsons Bay, nor the infrastructure to support it. One option would be develop micro-transport connections between Scienceworks and Williamstown on land and sea, in the form of autonomous buses, scooters and also ferries, connecting Scienceworks with the Williamstown Maritime Precinct, taking advantage of the waterfront between the two, the views to the dock and over Hobson's Bay.

Re-locating Scienceworks into the Williamstown Maritime Precinct would be another possibility worthy of exploration for promoting tourism. Developing a new site for Scienceworks on the Williamstown foreshore would have the benefit of making much greater use of Williamstown's other visual and historic assets.

Relocate the Science Museum to the Williamstown Maritime Precinct: a la Hong Kong?

Source: Google screenshot

It is easy to imagine tourists to Melbourne basing themselves in Williamstown, catching a train or boat into the city as needed, and touring down to the Werribee Mansion and Zoo, the Ramsar Wetlands, the south coast and the Bellarine Peninsular as needed. Moving Scienceworks to the Williamstown Maritime Precinct would increase the likelihood that visitors would stay overnight and increase the local jobs and economic impact.

The Victorian government paper (Williamstown Maritime Precinct, Department of Transport (2020)) proposes a significant redevelopment of the foreshore without suggesting the major transformation involved in siting the Museum there. In the space between the Yacht Club Jetty and the Point Gellibrand fuel depot, there is a large tract of foreshore which can be used differently. This includes the site BAE owns but is of limited use to the company in the absence of major shipbuilding operations (and strong usage covenants).

Locating a new National Science and Technology Museum in this precinct might provide an even more magnificent backdrop than the current site, and the close proximity to other attractions such as Seaworks, waterfront restaurants, Williamstown Beach, marine bird sanctuaries, Commonwealth Park and the historic port town of Williamstown, would substantially increase the synergy with it surrounds and the attractiveness to interstate and international visitors.

Part of the area lies in the Point Gellibrand major hazard zone which is likely to impact the design of the space, but as we switch towards electric vehicles the need to import liquid fossil fuels will decline and be phased out before 2050.

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