**Leading megaprojects: The power of life-stories**

**Abstract:**

While there have been papers and books presented and published about megaprojects, using historical accounts and case studies, very little attention has been paid to lessons learnt from the life-stories of megaproject managers in the project management literature. This paper aims to address this gap by analyzing two recently published life-stories of contemporary megaproject managers and uses a narrative inquiry with thematic narrative analysis to explain what we can learn from their stories with a focus on leading and managing megaprojects. The author reflects on the use of life stories to collect and analyze data for a narrative-based approach to research in the project management field.

Keywords: megaprojects; project leadership; life-stories; narrative inquiry; narrative analysis; power and politics

**Introduction**

The aim of this paper is to gain insights into the management of megaprojects from contemporary life-stories published about two megaproject managers in the Asia-Pacific Region, who led large infrastructure development projects. The two books that were used for analysis in this paper are:

*Karmayogi: A biography of E. Sreedharan* by M.S. Ashokan, about the Indian megaproject manager who delivered the Konkan Railway and the Delhi Metro in India and came to be known as Metro Man.

*Clarinets, pipelines and unforeseen places: The evolution of an engineer* by Grahame Campbell, who started his career building pipelines for the oil and gas industry and led the building of the M4 Motorway project in Sydney and the CityLink Project in Melbourne, Australia.

It is hoped that the narrative analysis method used in this paper will motivate project management researchers to explore the use of this method in their research. While narrative analysis has been used in organizational research (Boje 2008; Czarniawska 1998; Czarniawska-joerges and de Montheux 1994), it has not been used extensively by project management researchers.

This paper contributes to the EURAM Project Organizing SIG’s call for papers covering ‘novel research approaches to studying major/megaprojects’ for the special topic ‘Managing Major and Mega Projects: Opening up new research Eras’. It is also expected to contribute to the growing literature on megaprojects.

The paper is set out as follows:

It starts with a brief literature review to explain why this study was undertaken and the research question(s) addressed. This is followed by an explanation of the methodology used, including philosophical underpinnings, method used, and how data was collected and analyzed. Next, the life-stories of two contemporary megaproject managers are summarized, highlighting key events in projects that they managed. This is followed by a discussion on the key strategies adopted by these managers, with a view to learning about leading and managing megaprojects from practice. The paper concludes with some reflections on the limitations of the method used with some suggestions on how these can be overcome.

**Literature Review**

Life-stories of leaders are often used as way of understanding leadership in practice and to facilitate leadership development in organizations. Recent examples of some contemporary life-stories that have served as inspiration for managers and leaders are: Steve Jobs (Isaacson 2011); Branson (Branson 2011); Paul Allen (Allen 2011); and Martha Stewart (Stewart 2005).

They have also resulted in the development of some new leadership theories such as authentic leadership (George 2003) and servant leadership (Greenleaf). Narratives and stories have been recognized as a way of learning about leadership (Taylor et al. 2002), dealing with complexity (Boal and Schultsz 2007), understanding cross-cultural influences and diversity (James and Grisham 2006; Barker and Gower 2010), helping to develop new leaders (Ready 2002) and leading/managing change (Fleming 2001; Adamson et al. 2006).

Telling inspiring stories has been identified as an important trait of modern leaders, resulting in papers being published on how to develop this capability (Harris and Kim Barnes 2006; Denning 2006; Sinclair 2009). However, leadership stories have also been criticized as manipulative and unethical (Auvinen et al 2013) and a masculine form of leadership archetype (Olsson 2006) even though life-stories of women as leaders have started appearing recently at the bookshops (e.g. Sandberg and Scovell 2013; Stewart 2005).

Thus, life-stories have been used to help us to understand what drove leaders to achieve success, their trials and tribulations, the development of new theories of leadership development and reasons why such stories are useful in studies about organizations.

Czarniawska (1998) points out the importance of studying narrative forms of reporting for organization studies, stating that ‘Narrative forms of reporting will enrich organization studies themselves, complementing, illustrating, and scrutinizing logico-scientific forms of reporting’ (p16). She also suggests that such reporting helps us to ‘enter into a dialogical relationship with organizational practice’ (ibid p17).

As projects are considered ‘temporary organizations’ (Lundin and Söderholm 1995, 2013), project management researchers and practitioners could also benefit from the analysis of narrative forms of reporting, such as life-stories. The temporal nature of projects also helps to create stories that can have a clear beginning and an end following the life cycle of a project.

Storytelling has been promoted as a means of project management development in large organizations like NASA that manage multimillion dollar projects (Laufer and Hoffman 2001) and for knowledge management in project-based companies (Koskinen et al. 2008). Storytelling has been used as a valuable tool for capturing lessons learnt from projects (Amtoft 1994; Anbari et al. 2008; Schindler and Eppler 2003; Sense 2007). Recently, storytelling has been used to study the role of narratives in innovation project leadership (Eninga and van der Lut 2016). Thus, the importance of storytelling in project management has been recognized as a means of project manager development, knowledge management, innovation and capturing lessons learnt.

Project histories have been the subject of special issues in leading project management journals (Söderlund and Lenfle 2013). In their editorial for a special issue in the *International Journal of Project Management* on project history,Söderlund and Lenfle (2013: 653) urge more research in this area is needed as ‘project management scholars have something to contribute to the study of history — through gaining a better understanding of the capabilities of project managers, the practices and techniques used in the projects of our past, and the effects those capabilities and practices have had on subsequent projects and, perhaps even their effect on the general societal and industrial development’. Söderlund and Geraldi (2012) also guest-edited a special issue on ‘classics in project management’ where they suggest that ‘Telling the stories of the classics connects us to our collective memory, establishing a link with the “great minds” of the past, awakening interesting and relevant ideas that have been forgotten or overlooked over the years’ (p560). This paper is a continuation of the valuable work started by Söderlund and his colleagues but with a focus on life-stories and on megaprojects. It is specifically focused on life-stories of megaprojects with a view to study project leadership, as this is an area of special interest to the author.

The overall research question that this paper addresses is:

*‘What can we learn about managing and leading megaprojects from the life-stories of successful megaproject managers?’*

In addition, this paper also demonstrates how thematic narrative analysis can be used in project management research.

**Methodology**

The philosophical underpinning of this study is based on the epistemology of *constructivism* as the investigation is ‘constructed through discourse in the context of individual histories’ (Beazely 2013:3). The ontology is *interpretivism* as it is based on historically situated interpretation of the world by life-historians (Gray 2014:23) and the methodology is *phenomenology,* which is the worldview that reality is ‘grounded in the people’s experiences of social reality’ (Gray 2014:24). The method selected is *narrative inquiry*. Life-stories can be investigated using biographical methods (Roberts 2002) or narrative inquiry (Czarniawska 2004) but narrative inquiry was chosen as it is a useful method in organization studies (Czarniawska 1998; 2004) and public administration research (Ospina and Dodge 2005).

The data used in this paper is *qualitative* as the data sources are *life-histories* published as books or in book chapters. Some literature was also used to reinforce the findings from the life-stories. The study uses *narrative analysis* based on the how narrative approaches are used in organization and management studies (Czarniawska 2004; Maitlis 2013; Andrews et al. 2007).

According to Maitlis (2013: 494), narrative analysis can be conducted using thematic, structural and dialogic performance techniques, of which thematic analysis is most common. The aim of thematic analysis is to identify key themes from a narrative or set of narratives. This form of analysis was selected for this paper as ‘structural analysis prioritizes the way in which story is told’ (ibid p. 497) and the author did not collect the stories but relied on secondary sources. Dialogic/performance analysis was considered unsuitable as it requires ‘exploring how narratives are co-constructed between teller and listener’ (ibid p. 498). While there are postmodern approaches to narrative inquiry (Czarniawska 2004; Boje 2001), the author considered a more traditional approach to narrative analysis and thematic analysis fitted the purpose as it is ‘a valuable approach when a researcher wants to understand the content conveyed in the narrative, and particularly when they wish to highlight the key content elements that give the narrative its power’ (Maitlis 2013: 496). The aim of this study was to investigate the power of stories in megaproject research as well as to identify and compare key themes from multiple stories. Thus, thematic analysis fitted with this intent.

Stories are essentially individual constructs of human experiences, and have limitations that may affect objectivity in presentation (Mitchell & Egudo 2003). Findings from narratives are also not easy to generalize and may need another form of corroboration.

Despite its limitations, narrative analysis is a method we can borrow from the social sciences to capture lessons from practice. The author would like to suggest that project management researchers could find ways to collect narratives directly from megaproject managers, instead of relying on published life-stories, to enable the other forms of analysis to increase the rigor of this approach.

**Life-stories from books**

The paper starts with a description of key points gleaned from the two contemporary life stories of megaproject managers — those of ElattuvalapilSreedharan and Grahame Campbell.

The author is an academic working at the University of Technology Sydney in Australia in a research team focusing on megaprojects at his University. His research team collaborates with international researchers studying megaprojects which includes academics at IIT Madras in Chennai in India. The author now lives and works in in Australia but started his career as an engineer working in project teams in India. He came to know about the success of the Delhi Metro Project and was curious to know how a retired public servant could successfully complete the Delhi Metro Project in India while the Commonwealth Games that were organized in New Delhi at the same proved to be a disaster. (<http://www.telegraph.co.uk/sport/othersports/commonwealthgames/8016654/Commonwealth-Games-2010-disastrous-build-up-has-killed-off-Indias-Olympic-dream.html>). While looking for information about this famous Metro Man in India he came across the life story of Elattuvalapil Sreedharan. On reading the impressive life story of Sreedharan the idea of using life-stories to write a paper began to form. He was also curious to know whether any megaproject managers in Australia have written about their experiences. At this time he met Grahame Campbell at his University in connection with megaproject research and came to know about the autobiography written by him. He then decided to compare the life stories of the two megaproject managers to see what can be learnt from their stories.

*Elattuvalapil Sreedharan*

The book that was used to summarize key points is a biography of Sreedharan (Ashokan 2015). While the life-story describes several projects in which Sreedharan was involved, three stand out as examples of his leadership, ingenuity and how he dealt with power and politics: the reconstruction of the Pampan Bridge; the building of the Konkan Railway; and the Delhi Metro.

**The three projects**

The Pampan Bridge ([http://myrameswaram.com/pamban-railway-bridge)](http://myrameswaram.com/pamban-railway-bridge%29) connects the town of Rameswaram located at the southern tip of India to Pampan Island from where ferry services were once undertaken to Sri Lanka. In 1964, a massive 240 Km/Hour cyclone destroyed one end of the bridge, causing huge loss of life as a result of a train travelling on the bridge being washed away. This disaster required a major reconstruction of the bridge, which also brought Sreedharan into national prominence. While the Pampan Bridge cannot be classified as a megaproject, it is included in this paper as an example of how Sreedharan demonstrated his capability to ‘think outside the box’, which became one of the trademarks of his management style in later projects.

The second project, The Konkan Railway ([www.konkanrailway.com](http://www.konkanrailway.com)), is a 741 KM line that connects Mangalore and Mumbai. It was a very difficult and risky project due to the many hurdles faced in laying lines through a treacherous landscape that included swamps, rapids over rivers and jungle. The line required 2000 bridges (the longest being over 22 KM over the Sharavati River) and 92 tunnels (the longest being nearly 65 KM with the tallest viaduct of 64 meters in height). The project posed several technical, financial, emotional and psychological challenges and was plagued by floods, evacuations, public protests and accidents resulting in loss of life (<http://www.konkanrailway.com/pages/viewpage/construction_challenge>).

The project commenced in late 1990 and was completed in 1998 to coincide with India’s 50th anniversary of independence. The overall cost of the project is stated as 2048.13 crores (379.31 million US dollars). From a global megaproject perspective it may not qualify as a megaproject in terms of cost, but it does do so in terms of its scope, and meets the characteristics of a megaproject defined by Flyvbjerg (2017), as ‘a major infrastructure project that attracts a high level of public attention or political interest because of substantial direct and indirect impacts on the community, environment, and budgets.’ (http://flyvbjerg.plan.aau.dk/whatisamegaproject.php). Zhai et al. (2009) add that ‘megaprojects exhibit extreme complexity, substantial risks, long duration, and extensive impact on the community, economy, technological development, and environment of the region or even the whole country’. This project certainly had many of these characteristics even though it did not cost over a billion US dollars.

The third project, the Delhi Metro (<http://www.delhimetrorail.com/about_us.aspx>), is a metro rail network of 213 KM in the Indian capital, and has 160 stations. The first phase of the construction finished in two years and nine months, ahead of time, in 2005, and the second phase in four and a half years in 2011. This phase also included an airport link, and the Metro has now has crossed the boundaries of Delhi into neighbouring Haryana and Uttar Pradesh states. Phase 3 is expected to be completed in 2017. The cost of Phases 1 and 2 are estimated from various sources (as published figures could not be obtained) as 64 million and 80 million rupees, a total of 2.1 billion US dollars. Phase 3 is estimated to cost 5.2 billion US dollars. A fourth phase is also planned.

**Key issues and strategies used in the three projects**

*Pampan Bridge*

The Pampan Bridge required the replacement of 125 steel girders that were destroyed from the bridge by the cyclone. The expectation from Sreedharan’s superiors was that the bridge would be rebuilt in six months. The original plan was to have the replacement girders built offsite in fabrication facilities located Gujrat or Assam, far away from Madras (now Chennai), and shipped to Rameswaram. The six-month timeline was a political decision made without consultation with the people tasked with rebuilding the bridge. In addition, when Sreedharan met the general manager of Southern Railways, he was told that the timeline had now been reduced further to three months without consulting Sreedharan. Sreedharan knew that it was impossible to rebuild in three months using new girders built offsite and transported to the construction site. ‘Sreedharan scrambled for alternative solutions, while ideas and instructions came thick and fast from the administration’ (ibid p. 61).

At this time, it emerged that some local fishermen had found some of the washed away girders close to the coastline. Sreedharan decided to go on an expedition to find more girders with the fishermen. They found several girders which had not been damaged badly. Sreedharan then decided to use the salvaged girders. He designed and built a crane locally along with a sturdy barge to pull the girders out of the water. He also found a group of local people from a community who were experts in hauling big objects. While the first girder took a week to be installed, productivity improved and subsequent girders took less time. In the end, all 126 girders were repaired and repositioned. ‘All this was accomplished with the help of machinery designed and developed (locally) during the course of reconstruction, for the sole purpose of meeting the unique needs and circumstances of the project’ (ibid p4). The bridge was completed in 44 days, beating the reduced deadline of three months and as the last girder was being raised the minister of railways was making a statement in parliament that the bridge was making good progress unaware that it was nearing completion.

This clearly shows Sreedharan’s capacity to use innovative means to solve unanticipated problems in projects. In addition to finding solutions locally, he identified the right people to do the hauling job, even if they were not technically qualified, demonstrating a willingness to take risks to achieve the goals of the project.

*Konkan Railway*

The Konkan Railway project involved four states (Maharashtra, Goa, Karnataka and Kerala) with conflicting political environments, which made uniform agreements difficult. It was financed as a Build, Operate and Transfer (BOT) project and faced several financial problems during its execution. The government had also stipulated an aggressive deadline which seemed impossible at first.

The idea for the Konkan Railway originated in the 1890s, during the British Rule but detailed plans were drafted only in 1977. It was finally expedited by George Fernandes who was railways minister in 1980s. Sreedharan had also joined the railway board. The railways, on the other hand, were not very supportive as they did not think that the project would be successful. Sreedharan had to rely on the support of Fernandes, the project sponsor, who was determined to get the project done under his watch.

Sreedharan then had to convince Fernandes that the Konkan Railway would not be successful if conventional financing through the government’s annual rail budget was the only source of funding. He suggested finding a new way of financing and setting up a Special Purpose Vehicle (SPV) to manage the BOT project. Fernandes supported the idea and got the Prime Minister’s support for it. However, the situation was not the same with ministers and officials in the state governments as some of them were governed by parties not aligned with the Central Government and their support was critical.

Fernandes was able to convince the chief ministers of Maharashtra and Goa to support the project, but Sreedharan felt that it would be difficult to get the approval from Kerala and Karnataka. He decided to take on this responsibility, telling Fernandes ‘It would be hard to get them to join the projects because of their political allegiance. Instead let me make some moves at Officers’ level’ (ibid p.122). Sreedharan’s strategy worked and all four states were finally behind the project. Before starting the project Sreedharan took an undertaking from Fernandes that ‘there would be not be any external intervention or influence during the mission’s planning and delivery. The mission must be completely empowered politically and administratively’ (ibid p125).

 Sreedharan was then appointed chairman and managing director (CMD) of the newly formed Konkan Railway Corporation (KLRC). As one of the first important tasks, he commissioned a new survey for alignment of the proposed rail line as he was skeptical about the accuracy of the previous alignment completed by Southern Railway. This task proved to be dangerous due to accessibility issues to conduct the survey using normal modes of transport. ‘Into this situation rode the Kawasaki bikers. Around 400 youth, fresh out of engineering colleges, took up the challenge of [carrying out the survey] with the support of Kawasaki’. These Kawasaki motorbikes were specially equipped to work in difficult terrains. The task was completed earlier than expected, saving time and overcoming the shortcomings of earlier surveys and was more acceptable to the local population. It also saved cost by routing the line in areas that were easier to access.

Sreedharan’s focus then turned to get the right people who he could rely on to complete the project. Sreedharan personally vetted applications based on qualifications, skills and job experience – all appointments were strictly based on merit.

Once the people were in, Sreedharan and his team decided that they would explore the appropriate technology to speed up the project. Sreedharan also met experienced contractors and asked them to start the work even though the paperwork would take some time. They did so as he had built trust with them in previous projects.

While preparations were underway, the central government lost its majority and Sreedharan lost the support of his project sponsor Fernandes. However, the new railway minister, Jaffer Sharief, also supported the project. But he announced in the parliament that it would be completed in five years (even before the surveys had been completed and the relocation of 43,000 families was yet to start).

Land acquisition was identified as a critical issue and team members personally approached the families to be relocated to sell the benefits of the project and address their concerns individually. People were told ‘Give us your land and relocate to a place you’d like to move to. Build another house and live in a rented home until it’s done. Whatever might be the expense the Konkan team will recompense you within a year and half’ (ibid p134). Several other measures were taken to take the sting out of having to relocate. The project team always ensured that local people affected by the project were given accurate information during the project execution. In Goa, youngsters were again sent on motorcycles to spread positive outcomes from the new line to the community.

Land acquisition for infrastructure projects is a tedious process in India administered by local government authorities who were not known for their speedy action. ‘The reason why land acquisition was speedily accomplished on the Konkan and Delhi Metro projects was not because the state governments pushed harder, but because of Sreedharan’s policy of transparent and direct contact which yielded the desired results’ (Ibid p135).

Although some critics deemed Sreedharan’s processes as bordering on the illegal, there were others who believed that time was important and agreed that waiting did not help. Despite all his efforts, Sreedharan ran into difficulties when the government in Kerala changed hands. This triggered community resistance and the project had to be suspended for ten months.

Another strategy adopted by Sreedharan to avoid legal battles during land acquisition, was also effective. ‘The Konkan team’s solution was to get signed documents from the land owners pledging the transfer of their assets in the presence of revenue authorities’ (ibid p137). While this may seem unusual, several steps taken by the Konkan team showed their concern for people-related issues during the land acquisition process. New wells were dug when access to the old ones were lost, fruit trees lost were suitably compensated, materials from houses that had to be demolished that could be reused were given away free to those who needed them, places of worship were avoided, cemeteries were relocated and relocation assistance was generous.

Another innovation used to make the project team conscious of schedule was the use of ‘reverse clocks’. Sreedharan borrowed this idea from the Kudremukh Iron Ore Project. These were clocks that ran backwards and ‘were brought in as part of a conscious decision to get the construction works done according to a predetermined schedule’ (Ibid p139.) They were installed in all offices and sites to instill a consciousness about time passing among all who worked on the project.

Several steps were taken during construction to keep the project moving to be on schedule and of good quality avoiding any rework. Petrol bunks were installed when fuel shortage occurred during the Iraq–Kuwait war. Plants were installed at various, locations to expedite the building of tunnels and bridges. Stocks of steel and cement were kept onsite to avoid shortage. An independent agency was hired to assure the quality of work. Systems for medical care and vigilance were carefully planned. When it became necessary, Sreedharan and his team hopped on a plane and travelled overseas to secure the appropriate equipment and machinery. When contractors lacked the appropriate machinery, they were given company machinery on the understanding that they would keep to the schedule. The project team also helped contractors to choose appropriate machinery.

As the work progressed and obstacles arose, other innovative solutions had to be found. Techniques such as ‘incremental launching’ to hoist large structures, ‘ballast-less track’ to secure tracks without frames that also helped reduce maintenance, ‘speed turnouts’ to help trains are some examples. Konkan rail also used welded rails, which was not in common practice, and skilled workers were sent to Japan for training. This helped in the prefabrication of rails to install them more easily when the terrain was difficult. Cost was also reduced considerably through this innovation. Worker comfort was also paid attention to by allowing workers to work in an air-conditioned environment to dig comfortably. When ventilation of very long tunnels proved to be a problem, experts were again sent abroad to help import world-class ventilation systems.

Despite all these measures, the project was delayed by two years partly due to ten months of fierce opposition initiated by groups with political, religious and communal support demanding the realignment of the track that had been approved previously with community consultation. These protests grew to become a national issue and eventually resulted in the Prime Minister halting the project. Reasons stated by protesting groups were environmental issues, the effect the track would have on heritage and culture and on its effect on real estate prices. The protest movement was further fueled by differences between the Goan and central government. While the struggles in Goa affected the project, the project team continued working on areas not affected by the protests and some lines were opened for train travel. A judge was commissioned by the central government to investigate the issues and recommended that the original alignment was still the best choice. However, the commission imposed certain conditions in continuing the work to allay the fears of the community. Construction then resumed with some specific precautions to be taken to reduce ecological impact.

Another major problem that delayed the project was difficulties with the financing. The state governments had floated bonds, which then had to be sold at a lower price due to a financial scandal that that rocked the Indian stock market at that time. There were also instances of rework of construction work due to unanticipated geo-technical issues. The floods of 1994 in the Mahd region in Maharashtra added to the difficulty of transport and worker movement, slowing down the project.

Despite all these unexpected challenges the project was finally completed and gained international recognition and served as a model for future rail projects in India.

Sreedharan attributed the success of the project to ‘the freedom he had enjoyed and the authority he was able to wield while in the top post of KRCl, which was a new entity and remarkably different from the Railways’ (ibid p175).

The lessons learnt for Sreedharan’s strategies in the Konkan project were:

1. Ensuring sponsorship of the project from governments and using various channels to garner this support.
2. Identifying key bottlenecks of land release and making sure contractors were on schedule through innovative ways of dealing with these issues.
3. The use of reverse clocks to build a sense of urgency within the project team.
4. Making himself available to resolve problems in the field as they arose.

*Delhi Metro*

When the plans for the Delhi Metro started gathering momentum, Sreedharan’s name came up again to be appointed as the project manager. He was now already past sixty-five and ready to retire at the end of the Konkan project. Sreedharan’s advice was sought to find a suitable manager to lead the project but, in the end, found himself appointed as the founding managing director of the Delhi Metro Rail Corporation (DMRC). Sreedharan had continued to work for the Konkan project after retirement, but a legal statute prevented him from being appointed to lead DMRC as it was partly owned by the Indian government. The panel had to find a way to circumvent this obstacle. A physical fitness test was ordered, which he passed. Finally, the cabinet secretary took a bold decision. He recommended that ‘If this country could be governed by a seventy-five-year-old, why could not a sixty-five year-old Sreedharan run an organization such as DMRC?’ (Ibid p181-2). As before, Sreedharan demanded complete freedom in delivering the project and selecting his team before undertaking the project

Sreedharan again personally oversaw the hiring process, recruiting over 100 employees. They were mostly young people between the ages of eighteen and thirty, a majority from the railways. The hiring took some time, which provoked criticism from the media, but Sreedharan felt getting the right people was critical.

Ethics and personal integrity were always important to Sreedharan and the new recruits had to sign a declaration that included a nine-point code of conduct including a commitment to ethics. He himself provided an example by thwarting early attempts in the project to influence appointments, and by not yielding to vested interests.

One of the important steps Sreedharan took was to investigate the latest technologies adopted in metros around the world. Two teams of twenty of newly recruited staff were sent to eight countries in Asia and Europe to learn all aspects of metro systems. Engineers were also sent for training overseas as DMRC did not have its own training facility.

The administration was kept lean and officers were given authority to carry out the multiple tasks allocated to them and resolve complex issues, with a high priority on quick decision making. Decision making on the same day was encouraged. Weekly meetings were held but no minutes were taken.

Laying a metro in a crowded city generated many problems as the first phase started with three lines called red, yellow and blue. Plans were challenged as soon as they were made public, resulting in changes supported by backroom pressure groups. This resulted in doubts about the timely completion of the project among the public.

DMRC made a strategic move to offset the noise, by starting on a line that had minimum objections. DMRC held open forums with the police, water authorities and related government offices, in addition to the general public, which gave it an early indication of troubles to come later and smoothened the progress.

Land acquisition was conducted in the same way as the Konkan project by directly contacting land or house owners to assess their needs. They were told that the alignment was fixed but they would be offered fair compensation and help to relocate. DMRC received the full support of the Delhi Government and the backing of the chief minister.

One of the major hurdles for the project was the presence of religious places that had to be relocated at DMRC’s expense. ‘Although the government was responsible for taking these measures, DMRC stepped in, realizing the government’s lackadaisical business as usual attitude, and themselves reached out to the traders’ (Ibid p195). Japan International Cooperation Agency (JICA) were the main funders for the project but their loan became doubtful when India started nuclear tests in Pokhral. However, the project team was optimistic and continued with the project, and the funds eventually arrived.

Contractors were deemed important to completing the project. Therefore ‘the tender process, selection of contractors, and award of contracts were within the powers of the managing director’ (Ibid p196), which helped the project pick up pace. All high-level contracts were reviewed personally by Sreedharan and swift decisions were taken with the consent of the board.

Sreedharan paid particular attention to legal issues and proceedings as several hundred issues arose due to land acquisition, tax issues and contracts, which were resolved with speed. He insisted he was kept informed of the status of all the cases that were being handled.

The project also had good media support, which helped. This was achieved by the project team by building rapport with the media and having an energetic and motivated public relations team from the start. The public relations department developed several communication strategies to maintain positive public support. Despite all these precautions, public anger tended to boil over, from time to time, and angry mobs vented their frustrations by locking up public officials in one instance, issuing death threats and throwing rocks at senior managers.

Building the rail line in a busy city turned out to be a nightmare that involved dealing with everyday traffic, reducing effects on buildings close to the line, and taking care of underground pipes and cables. There were also several court cases filed against the alignment and a Delhi Metro Railway (Operations and Maintenance) Act had to be passed in 2002 to contain these issues.

The strategy of looking after contractors was repeated, as in Konkan, and payments were made on time so that work could progress. Top management even proactively inquired about pending bills with contractors. The finance department was involved in the project detail so that they could have a grasp of what was going on and be ready to help overcome financial constraints.

Sreedharan ensured that the public’s concerns were addressed by ‘making the common man part of the grand scheme and giving him a clear vision of the ultimate benefits that would come his way’ (ibid p202).

The reverse clocks that worked effectively in the Konkan project were also used in the Delhi metro to build consciousness about the project schedule.

Sreedharan’s personal, simple style of working acted as a model to others and helped improve productivity. He would, in general, keep to eight hours of work but he used this time productively without wasting it. He would pay a visit to construction sites on Saturdays to review work in progress and redress any issues.

There was one incident that nearly caused Sreedharan to resign his position. This had to do with the choice of gauge for the Delhi metro. The Indian railway’s policy was to use broad gauge but metros worldwide were using standard gauge. The type of gauge used would have a trickle-down effect on the procurement of railway carriages, and the decision was escalated to the Cabinet and the Home Minister was asked to intervene. When the decision was announced that broad gauge would be used, Sreedharan was prepared to resign, but was persuaded by the Lieutenant Governor of Delhi to stay on. The issue was then raised to the Prime Minister by the Delhi Chief Minister but the Railway Board’s decision prevailed and the first phase of the metro used broad gauge, a decision that was later regretted. It was changed to the standard gauge from the second phase. Sreedharan commented that ‘the decision to go with the broad gauge was the most severe blow he had endured in his entire career spanning half a century’ (Ibid p209).

During the second phase of the project an accident which cost seven lives forced Sreedharan to resign as he took moral responsibility for the accident. This was because he had taken measures to improve workplace safety after a previous incident. But the government was not prepared to let Sreedharan go and senior ministers from the central and state governments pleaded with him to stay on at least until the end of Phase 2 which he agreed to do.

Sreedharan was also unhappy about the use of the Public Private Partnership (PPP) model for the airport express line of the metro and the deal finally turned sour. The contractor tried to wriggle out of the contract but was forced to reopen the line. However, the performance was not up to the mark, resulting in a drop of passenger traffic. Sreedharan was a staunch believer of public ownership of the metro as these projects are not likely make a profit in the short term, which is the focus of the private sector.

After delivering the first two phases of the Delhi Metro, Sreedharan stepped down in 2011. The success of the Delhi metro has revived interest in other Indian cities to build metros and the DMRC has been asked to be advisory consultants for many of these projects.

The lessons we can learn from Sreedharan’s strategies in the Delhi metro in addition to what was observed in the Konkan railway are:

1. Putting in place a code of conduct to keep the project squeaky clean.
2. Ready to be saddled with the responsibility when issues arose and even offering to resign, clearly indicating that ‘the buck stops with him’.
3. Setting a personal model for working efficiently as well as effectively.
4. Looking out for new technologies that will speed up and enhance the project.
5. Ensuring that stakeholder communication was managed well so that the media was supportive of the project.
6. Arguing for decisions that he believed in, such as the use of standard gauge and reluctance to use PPP contracts.

***Grahame Campbell***

The autobiography of Campbell is not focused on megaprojects that he led but on his life as an engineer and his love for music. Therefore, the following description includes extracts from his earlier projects that helped him to become a mega project manager. The author also decided to interview Campbell specifically about his experience in the two megaprojects, which has been added to the data collected from his autobiography.

Like Sreedharan, Campbell also grew up with an appreciation for hard work. Reflecting on his childhood he states ‘Years later, I would reflect on the community in which I grew up. The stoic Protestant ethic of hard work brings its own rewards was stamped on my DNA’ (Ibid p18).

Campbell’s book starts with finding himself in the midst of a war in Northern Iraq, where he was working on a project. ‘When I finished my university studies in civil engineering ten years earlier, I never anticipated, much less imagined, that I would find myself in these far-flung outposts of the world, sometime in the middle of a war zone trying to make sense of the brief and complete the project’ (Campbell 2016: p xiv). Campbell’s career, unlike Sreedharan’s, took him all over the world working on projects in a variety of countries. Campbell also worked mostly in the private sector and, unlike Sreedharan, his role in megaprojects was that of a contractor delivering the projects.

Campbell, like Sreedharan, also worked in the railways in his early career. He started work at the NSW Railways as a junior designer in Sydney, working on construction projects for an electrification project. This is when he became interested in project management and enrolled in a Master of Engineering Science degree. His Master’s thesis was related to managing major projects, which was put in practice by his supervisor who became the chairman of Shell Australia.

He continued working while studying for his Masters, which also gave him an opportunity to apply what he learnt to his work. This is quite common in Australia compared with India, where you completed your education before taking work on. After his initial experience with the railways, Campbell joined McDonald Construction in Mascot and realized that life in the private sector was very different from the public sector. ‘I’ve just left a job where I had an office, car, driver and secretary. A couple of thousand people were under my control. Now I have a desk among a dozen others’ (Ibid p 106). The private sector was also a revelation on how contractors were treated in projects. When he submitted a project cost estimate to his superior he was asked to cut down the prices quoted by sub-contractors.

‘Keep finding ways to shave their prices. They have to think that you’re the winning contractor and want to be on the winning team. This is a big deal for them, and you can tell them it’s a long-term relationship’ (Ibid p109).

He was learning how projects worked. ‘I was beginning to understand the roles of various participants in project development. The owners employed engineers to design the works and, in turn, contracted suppliers of equipment and materials in different combinations for constructors to build the project. Finance arrangements sometimes influenced the legal documents which brought everything together’ (ibid p114). He then moved on to work for CMPS, a consulting firm in Sydney and was sent to Melbourne to be a project control engineer where he was warned not to get too close to the contractors when he tried to resolve issues collaboratively. He was frustrated with the elitist attitude of his firm and decided to focus on the ‘relationship between design and construction activities’ in a project for his Masters’, which later changed to ‘the integration of design functions into major projects’ and was to have a big influence on how he worked on major projects.

The work with CMPS took him to several projects around the world, starting with a mining project in Indonesia and then back to Australia on a pipeline project carrying gas from Victoria to Sydney. His experience with commercial aspects of projects gave him an insight into how projects start and how they are managed; why cost and time needed close attention; how to work well with contractors; and understanding construction methodologies to be able to use new techniques.

At CMPS he started working on large oil and gas pipeline projects, and their foray into a gas project by AGL (Australian Gas Light Company) taught him how politics have a big influence on project decisions. The Victorian Government was trying to protect the local industry from competition with Sydney, which made them give up on a Victorian-based project and switch to South Australia. It also brought him into contact with American partners. He learnt that American and Australian engineers were trained differently. ‘In Australia we had standard disciplines – civil, mechanical etc. – but the Americans had pipeline engineers who combined various aspects of these areas’ (Ibid p. 164). Further work on the pipeline involved crossing over the Blue Mountains and this is where he found that laying a pipeline along, what seemed like large tracts of unused land, resulted in clashes with environmental groups opposing the project with media support. Aboriginal people were afraid of their sacred sites being at risk. This led to delays in the project as the government commissioned an inquiry. Campbell became frustrated with all the turbulence. He learnt that ‘Engineering was not about physics, chemistry and calculations. There are many forces bearing on the problem: some of them, it must be said, were imagined, but all were considered and dealt with. We had used sophisticated computer modelling which had finally been swamped by tariff rules and political pipe dreams’ (Ibid p 178).

He then worked on projects for Huffco (a major player in the oil and gas industry around the world), working on projects in Trinidad, Bangladesh and the US. After ten years working overseas on various oil and gas projects Campbell returned to Sydney and rejoined CMPS.

In the meantime, oil prices crashed, affecting the oil and gas business and CMPS suffered. Campbell joined the company’s board and realized that they needed to develop a new suite of services to be viable. The jobs they were winning had only 20% engineering content while project services had increased to 80%. The growth of CMPS was being neglected by its management, and Campbell was then appointed as the CEO and managing director.

This led to a review of the CMPS business to weed out non-performing parts so that the company could be more focused and collegiate. Soon, he found that the consulting engineering business was becoming lucrative. ‘Construction companies and equipment suppliers were attempting to take the lead role in projects and the traditional clients were attracted to the apparent lower risk’ (Ibid p. 440). He realized that while it was risky taking equity positions on projects that would bring them into bigger projects, he felt his international exposure had prepared him to undertake the higher risk. This move brought new projects in Indonesia, including projects with Japanese partners who funded the project.

The new strategy eventually led CMPS into the private road business when the new Liberal Government in New South Wales announced a plan for private toll roads around Sydney. He formed a company called State Wide Roads to bid for toll roads, and they were successful with the first project. It was the 12.2 KM leg of the 64 KM-long M4 Western Motorway running from East to West through the western suburbs of Sydney. This was a big leap for CMPS that opened the doors to later megaprojects.

The M4 project was awarded as a Build, Own, Operate and Transfer (BOOT) project. The estimated cost of the overall project in 2008 dollars is $458 million or US$354 million (Audit Office Report 2009). Success with the toll road brought new challenges but also prestige as such an asset that had not been owned and managed by an engineering company anywhere in the world. ‘The greatest day in the 75 years history of CMPS was upon us’ (Ibid p457). By winning this contract, Campbell felt that they had crossed a boundary. He also felt that CMPS’s strength ‘lay on our professionalism and [we] fought hard to convince our clients that their welfare was our principal objective’ (Ibid p. 457).

Through participation in the M4 project Campbell realized that most engineering companies in Australia lacked management skills and this was an opportunity to change. The company had to have financial skills, if they were to be a leader in project management. They also needed independent board members who could give them impartial and objective commercial advice.

The M4 project was going well and interest rates were falling and the project was increasing in value. The project also finished nine months early. Campbell explained to the media why they were successful in building and operating the M, ‘we were a small united team focused on a simple premise: nobody was paid a fee or a dividend until we generated revenue and at such a time the shareholders will be the first in line’ (ibid 465). He also felt proud that they had moved on to take an engineering and management role at an appropriate time in the market.

The success of the M4 project led to the winning of the 22KM Melbourne CityLink in a consortium put together by Transurban. The highway included new freeways, tunnels and a 30-meter bridge at a cost of A$2.2 billion.

These projects led Campbell to believe that ‘Engineering as a career was not a technical journey but a learning curve including cultural, social and management situations’ (ibid p479), that knowledge of procurement, contracts and inspection are key aspects to manage a project business and ‘projects are delivered by teams that have leaders and specialists from a wide spectrum of skills’ (Ibid p479).

Working as a board member in CMPS had provided Campbell with additional knowledge on improving the commercial approach to project development. He felt that ‘having a strong risk approach to contracting allowed all forms of engagement from the earliest stage of the concept [and] the evolution of the project would be flexible, according to emerging circumstances’ (Ibid p481).

The author met Campbell to gather some more information about his involvement in megaprojects. Campbell explained that when CMPS entered the project management business he was frustrated by the way in which tenders were prepared in Australia, with little room for innovation. So he started thinking about ways in which he could create an environment where he had more control of the process which, in turn, led him to bid for toll roads in New South Wales. He had some experience in building toll roads in Queensland, but they were financed by the government. He then joined hands with Alan Livingstone and decided to bid for the M4 project as the New South Wales Government was interested in organizations that could build, own and operate toll roads. Campbell and Livingstone decided to establish a company called State Wide Roads and assembled a team. CMPS had no funds to finance the project. They managed to secure a 100% loan from a prominent Australian bank with some sharing of equity. Campbell also decided that they would not appoint a main contractor but manage all the contractors as they had built a good team who were capable of doing so. From his perspective, having a small dedicated team was a key to manage such a project. He also felt that, as a private company, it was easier for them to negotiate small deals with the public affected by the project so that the project could progress smoothly. He quoted an incident when they had to place a crane in someone’s backyard for some time and, in exchange, built them a swimming pool that they would enjoy for a long time. The M4 was finished nine months early and one of the main reasons was that Campbell and Livingstone were ‘directly making decisions all the time’. The people who were affected by the construction were compensated quickly, minimizing any holdups. Campbell said that while there were overriding issues to take care of, if you did not deal with the small issues that arose daily they would soon become bigger issues. One of the other key strategies was that CMPS proposed a very simple contract for the project, which made it attractive to the government.

The lessons to be learnt from Campbell’s involvement in the M4 project were:

1. His courage to take on the risk of financing the project.
2. Establishing a reliable and effective small team to manage the project.
3. Dealing effectively with affected stakeholders and making spot decisions to look after their interests.
4. Paying attention to seemingly smaller issues and clearing them quickly.

Based on the success of the M4 project in Sydney CMPS, decided to work with Transfield to bid for the Melbourne CityLink project. CMPS also were given a good reference by the New South Wales Government to the Victorian Government. Even though the two projects were in Australia, there were local differences on how projects were implemented in Sydney and Melbourne. So CMPS was careful to select contractors from Melbourne. Although the CityLink faced some issues due to the nature of the soil where excavations had to be done, the problems that arose were sorted out quickly and it was also a successful project. Campbell explained that until you work in a particular location and understand the environment, it is difficult to get the project going. But once the dynamics are established you cannot stop.

The main lesson learnt from the CityLink project was the care and attention paid to localization or the context, and solving problems as they arose.

**Analysis and Discussions**

Here are some themes that emerged from the analysis of the narratives in the life-story that deal with management and leadership issues.

*Selecting the right people* and giving them adequate training as well as challenging tasks and responsibility with authority was a key theme that can be observed from Sreedharan’s life-story. In both the Konkan and Metro projects he took the time to get the right people on board. His reputation as a successful project manager also had benefits in people wanting to work on his projects. In the Delhi Metro, ‘There was relentless attempts early on to influence appointments … Sreedharan stuck to his convictions and decisions, regardless of the consequences of not yielding to vested interests’ [Ashokan 2013: 184]. In the Konkan project, he created zones of responsibility as ‘the intent was to empower employees to take decisions and avoid the culture of dependency on superiors in trivial matters’ (Ashokan 2015: 142]. His belief was that the leadership of the team should be lean and not micromanage. He ensured that the project’s different divisions communicated well and obtained a dedicated communications line to minimize disruptions, for this was at a time when the internet was not working very efficiently in India, and even telephone lines were unreliable.

*Smoothen commercial aspects of the project* by minimizing financial and legal issues. The use of novel methods to acquire land in Konkan and Metro using front-end processes to secure the land and the legal processes that followed was a bold move. Such a strategy may not have worked in other countries but Sreedharan set up a PR machinery to build a positive image of the project to maintain public support. Although land was acquired speedily, people’s needs were always taken into account. Sreedharan had a very high social conscience. While he held firmly to the need to push through the project, believing in its social benefit, he was prepared to listen, and also built up this capacity in his teams. His belief was ‘executing project with least convenience to the public’ (Sreedharan 2008: 7]. The strategy to trust contractors to prepare their invoices using their own measurements and pay them in advance to minimize cash flow problems was another important strategy. ‘We trust the contractor, we give him 80% of the bill within 24 hours. There is no cash flow problem to fight’ (Sreedharan 2008: 7). Finance officers were also made to feel part of the project so that they could assist in resolving financial hurdles.

*Building* trust was another important strategy which was seen in the way he treated contractors as partners rather than as ways to squeeze costs. Having meetings with them on a regular basis to resolve their issues was a proactive way of building and maintaining trust. His view was ‘Our success depends upon the success of the contract’ (Sreedharan 2008: 7]. Contractors were also selected carefully to avoid adverse selection.

*Dealing effectively with power and politics* was one of his major strategies, such that he was the first choice when the Delhi Metro was ready to go. He himself was in a powerful role as a CMD in Delhi Metro and on the Railway Board in Konkan. But he also knew how to influence when he had to deal with power and politics affecting the project. In both the Konkan and Delhi Metro projects, he obtained a commitment to non-interference at the start with the projects’ main sponsors. At times, when it became clear that a different path had to be pursued to overcome obstacles, he was also unafraid do that. As an example, his strategy to find a way to obtain permission for the Konkan project through the administrators rather than the government shows how he knew how to play the political game when needed. His continuing connection with schoolmates who became powerful bureaucrats, networks he created with senior people in the railways and having the ear of central and state ministers are all examples of his capacity to work with power and politics smoothly while keeping an eye on the project itself.

*Being ready to innovate* was another characteristic, which started at the Pampan Bridge with retrieving the girders from the sea to be able to complete the project on time, and developing several innovations to overcome obstacles at both Konkan and Delhi Metro.

One of the questions that comes to mind when you read Sreedharan’s biography is the role he played in the projects. His projects had project managers, so he was not the day-to-day project manager. However, his influence on the management of the project was pervasive. He was certainly at the helm like a project director who looks after all strategic issues. But from time to time he also did not hesitate to get his hands dirty. He was technically competent to design innovations. He regularly visited the construction sites and tried to resolve problems in situ. Do other megaprojects have a similar role? Are such attributes essential for major infrastructure and construction projects that need a good balance of management/leadership skills as well as technical skills? This is worth further investigation.

The autobiography of Campbell did not provide similar insights about the management of the M4 and CityLink projects. Moreover, Campbell was on the contractor’s side of the project and did not have to face some of the scrutiny to which Sreedharan was exposed. On the other hand, Campbell bore more financial risk as his company would have become bankrupt if the project failed. This has happened in other motorway projects in Sydney, such as the Cross City Tunnel and Lane Cove Tunnel. Sreedharan was not a project sponsor as the governments were the main sponsors of the Konkan and Delhi Metro projects.

But from Campbell’s autobiography and a subsequent clarifying interview we can unearth some similarities between his approaches and Sreedharan’s.

Campbell also believed in working hard like Sreedharan due to his upbringing and the values he inherited from his early years. He also was innovative as he used concrete pumping in one of his earlier projects to save time and found this was the first major use of concrete pumping in Australia (Campbell 2016 p93). He also realized the value of trust and the importance of risk management when in one of the projects he was pricing he left out the loading required by his superior. Fortunately, they did not win the job. His boss forgave him for the error and then explained how the company had previously been burnt in two projects by not anticipating the risk. ‘That’s why we put the loadings on the big jobs’ (Campbell 2016 P112). Campbell also realized the value of appraising issues himself by going to the site to get a feel for the issues, much like Sreedharan’s site visits, even though he was sunburnt. ‘I still needed to understand the scope of the operations. So I visited the remote camps around the site’ (Campbell 2016: p 147). He also learnt that commercial issues can sometimes override technical issues when making decisions in projects. ‘We had used sophisticated computer modelling, which had finally been swamped by tariff rules and political pipe dreams’ (p. 178).

When CMPS decided to enter the road business by bidding for the M4 project, there were concerns that the project was too risky as they had never ventured into something like that before. Campbell had to stand firm to explain his position at a critical meeting with the chairman, after which he realized that ‘The meeting brought to a head undercurrents created by my new style of leadership and direction’ (Ibid p453). During this time, he also learnt how to deal with banks who wanted to lend money for the project. He learnt how to spread the risk in the project to satisfy the financiers. This helped CMPS to get a good deal with the Commonwealth Bank of Australia. CMPS also felt confident that the road could be built ahead of time at half the cost estimated by their competitor Main Roads, and even though the interest rate was high (17.5%), they predicted it would come down so they would be able to make a profit. While Campbell realized bidding for taking equity in a road project was a turning point for CMPS, he felt that ‘most people in the company had no idea of the importance of the win. In a strange way it attacked the base on which the company was formed’. (Ibid p457). This shows how Campbell was able to take a bold step that paid off. ‘We opened the M4 motorway nine months early, to great acclaim ... A new chapter in privatized infrastructure was emerging’ (Ibid p463). But he was surprised that the media focused on the tolls people had to pay instead of the success story CMPS had created. ‘I was learning that politics is about perception and facts are incidental’ (Ibid 465).

Campbell’s role in megaprojects also crossed over between business management and project management. In this way, his role was also somewhat similar to Sreedharan’s that he did not look after the daily running of the project but his role was different from Sreedharan’s as he was a contractor and not owner of the project.

If we compare Sreedharan’s journey and Campbell’s’ they came to become megaproject managers following different paths but each in their own way exhibited leadership in different ways even though they started their journey as engineers. As a public servant Sreedharan learnt his ropes in ports and railways and came to manage megaproject commercially in organizations in which the public sector still had a great deal of influence. In most projects Sreedharan was appointed as the project manager by the Government. Whereas Campbell was in government service only for a very short time but spent most of his life working in the private sector and came to lead megaprojects as a business strategy to reinvigorate an excellent engineering firm to lead it into a new business sector by assuming some risk. Both had to take personal risks to become leaders in their own way. Both learnt that projects were more than engineering jobs and megaproject managers have to develop their own understanding of risks, commercial, social and political aspects. Both learnt from experience to be successful in their own endeavors. ‘At each turn in the evolution of my thinking, I was conscious of the learning process and the need to build on opportunities that presented themselves’. (Campbell 2016:479).

There was one difference in their attitude.

Sreedharan would allow for a lot of time at the start of the project to listen to everyone but once the project starts he would stick to the plan as much as possible. ‘His thoughtful views on development projects had always been that suggestions and opinion have value and their rightful place during the planning phase. Developed countries throughout the world follow such an approach. They would take a long time to plan such projects, especially in the case of infrastructure development projects such as alignment for railway lines. Opinions and suggestions from the public would be solicited at this time. When the final blueprint has been drawn and construction had begun, there would not be any more changes. The project would have to be carried out, whatever the obstacles’ (Ashokan 2013: 168).

Campbell would prefer to allow for development during the project ‘I had learnt from the American that EPCM [engineering procurement and construction management] allowed development to be progressing through stages without commitment to a final price’ ( Campbell 2016: 477). He believed that fixing the design could kill innovation.

This difference in management styles shows that megaproject managers must adapt to milieu of the project and their own role in it.

While the context in which megaprojects were managed by the two managers could have created differences in style, there are some similarities in their approach. The interview with Campbell revealed the following strategies that led to success in the two megaprojects he was involved in.

1. Establishing a small capable team to look after the project.
2. Dealing effectively with issues, big or small, in a timely way.
3. As a contractor, to think like a businessman while bidding for turnkey projects, and learning about legal and commercial issues, to ensure that the project is financially viable.
4. Understanding the importance of local content in the project — using local companies for projects in Melbourne.

**Conclusions**

The study of life-stories has given some insights into how megaprojects are led in practice. The two life-stories show that there are some commonalities, such as bold decision making, applying knowledge gained from experience, self-reliance, managing stakeholders, selecting appropriate people and giving them responsibility and authority, awareness of commercial, legal and social issues, and being able to innovate, that are the necessary attributes needed to manage megaprojects successfully. However, megaprojects seem to need someone who can act as a leader, in addition to managers who run the daily project activities. Life-stories are useful but since they are already in the format in which they are written, they are more difficult to analyze than case studies where the researcher can ask specific questions. If the author had been able to get the narratives directly from the managers he could have used more sophisticated methods of analysis. The interview with Campbell was very useful to clarify specific issues that were not apparent from his autobiography.

After writing this paper, the author subsequently analyzed life-stories of three landmark megaproject managers — the Roeblings (John and Washington), who built the Brooklyn Bridge and John Stevens, who was one of the chief engineers of the Panama Canal, and found that barring some strategies that had to be adopted due to the time during which these projects were built, there are many commonalities between strategies used in landmark and contemporary projects. The author would like to suggest that project management researchers collect more narratives from megaproject managers around the world to identify common lessons learnt that can help future megaproject managers.

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