Revised Reflections

Principles of Sustainability to create viable systems

The principles of sustainability are necessary for a work environment to do its part in ensuring there they create viable systems for their business. At my internship, with fresh start up Income Energy, their business aimed to solve electrical sustainability. The problem posed was most modern-day electricity comes from fossil fuelled plants. This was of course, not sustainable.

The business solution proposed was to give homeowners free solar panels and charge them for the electricity used at a discounted price. This would remove the upfront costs of entire solar systems installed in the home or commercial property. They also would undercut fossil fuel generated electricity rates. This seemed to be a win-win solution.

However, after analysing their business and producing some mathematical models such as projected breakeven point and other financials, I concluded the business would not succeed at scale.

The problem was that by offering reduced rates of electricity, as well as debts incurred to install solar panel systems, the business had to have exceptional customer conversion rates. Client acquisition had to rapidly grow, or the company would be under severe debt. Currently, new clients were handled manually and took a long time to onboard. I thus proposed to build a software system with attractive, streamlined features that contained graphical representations as well as automatic bills being sent to clients to accelerate client onboarding.

I then codeveloped a website with a fellow intern built with JavaScript, HTML and CSS and implementing some plugins and libraries. The program connected with WattWatchers, an API to gauge electricity usage that followed government MODBUS standards.

When reflecting on the experience, I realise that it is not easy to achieve win-win solutions without large adoption or funding. I think if something is going to work, it must be one sided. It must be consumer focused, in this scenario the consumer received very little other than monetarily (but unreliably) cheaper electricity. One alternative is to target areas which they can have the greatest impact. Also, for the financing, it must be relatively cheap. After my reflection, I would propose focusing on a continent such as Africa where low investment cost is required using solar thermal water pumps (Mohammed Wazed et al., 2022).

Professional Practice within intercultural and global contexts

My current workplace is a software company based in Indonesia. Almost every colleague besides the Australian CEO, is of Indonesian descent. Before I began working here, my recruiter warned me that there will be a clear language barrier. As my role is a software engineer, I must collaborate closely with other colleagues. Especially because I was an intern, I require extra guidance in understanding code, system architecture and more.

Daily work consists of a daily stand-up meeting and a product meeting that I attend. This is to tell the team what I have done the previous day and what I plan to do the current day. During my first day, I saw that my mentor had good English proficiency, but the rest of my colleagues had broken English. I

realised that when the English speaking CEO attended the meetings, everyone would only speak English and would speak Indonesian when he would leave.

Luckily most of the documentation is done by my mentor, and thus written in English. In order to curb the English barrier, I began reading and learning system specifics, UML diagrams and code repositories by myself in order no to hinder the other members with constant questions they have difficulty answering due to me not knowing their native tongue. During a meeting, the CEO was not present so all 20+ members in the call were speaking Indonesian. I noticed my name being mentioned several times followed by a product designer saying, “sorry Jacob, we’ll speak in Indonesian so you can understand”. I felt it was not my place to make an entire company speak English just because I was present, I then told them to please continue speaking their native tongue. It seemed they were relieved to hear this.

I learnt during my experience at Astronaut that for intercultural synergy, you must exercise empathy and understand that not everyone is comfortable with English or western culture. I learnt that sometimes, extra work is necessary in order to make intercultural workflow possible. As it stands now, my mentor tells me everyone has a positive attitude towards me now, which further confirms my analysis on intercultural and global cooperability.

Cover Letter

RE: Graduate Engineers Required by Industrus

To whom it may concern,

My name is Jacob Elali and I write to you today in relation to my interest in applying for an internship. As a collaborative, autonomous and highly organised individual, I can bring value and a hardworking attitude to this role. I enjoy challenging tasks which allow me to grow and expand my knowledge and I believe this role will give me nothing less.

I truly believe working here will help me develop my skills tremendously and I can be of great use. I am willing to face complex problems, focus on tasks assigned to me and learn as much as I can.

A commitment to ethical conduct and the highest standards of professional accountability

I take an active role in ensuring ethical and professional standards are consistently met with the work I contribute to. When it comes to my previous experiences, I have taken an advocative position on ensuring data is secured through encryption and compression when building databases. I have recently contributed achieving an ISO security certificate for my workplace. Great importance should be placed in ethical standards, such as keeping data private or building sustainable and safe designs. Detailed documentation and using version control promotes professional accountability in my work. I make sure every library and open-source work is credited and documented. In one instance, I was required to handle client data that contained sensitive information. The most cost-effective method was to just store the data temporarily on the client side; however, this had many vulnerable implications. I thus advocated to store client information to a cloud based, end-to-end encrypted database to ensure security, even if this would increase costs. I continue to adhere to high ethical and professional guidelines set by Engineers Australia and International Security Standards.

Demonstrated ability to effectively communicate both with other engineers and with stakeholders from different fields.

In my current workplace, I am engaged with both the engineering teams and the product teams. I also have regular updates with the CEO on the progress of my internship. Through my experience at my previous internships, I have learnt to communicate technical and non-technical ideas. I understand that everyone has different personalities and methods of approaching problem solving. I have become quite adept at adapting to the environment and people I work with because of this. Information must be communicated differently depending on where the stakeholders' interests lay. I have learnt to be very effective in communicating to varying fields and departments in order to achieve the overarching goal.

The ability to engage with a creative, innovative, and proactive environment.

Working in startups as an intern has allowed me to explore my creativity while being humbled by the creativity of my seniors. I have seen first-hand the constant implementation of various technologies major problems or use cases brought by clients to these companies. An example of this, at my current workplace, a large client using our API requested data analytics for to observe the behaviour of its users. I collaborated on presenting this data to administrative users, my senior engineers allowed me the freedom of using whatever tools necessary to get the job complete as the system is isolated, which therefore wouldn't affect the rest of the program. The catch was that the task was due within 48 hours of it being introduced. This allowed me a stressful but rewarding experience of back-and-forth creative solutions between me and fellow engineers to get the job done. I have thereafter attained experience in creative and proactive environments with companies continuously innovating in an agile environment.

Demonstrated ability to use and manage information

When it comes to solving problems, most of my knowledge comes from self-teaching. I discipline myself to first reading required texts and documentation on technologies and tools before I use them. I have a system to first read what's available and then to productively request assistance from colleagues or external methods. When it comes to peer to peer, I can effectively communicate information in a manner that suits the context. For instance, a more detailed discussion of the project for technical colleagues and more high-level discussions with non-technical colleagues.

The ability to manage your own performance in a professional environment

I request performance feedback from my peers and superiors in order to ensure I remain working to a higher standard. This also helps me understand my strengths and weaknesses. I maintain a humble attitude to criticism and feedback as I understand a project focused mindset. I also understand it is critical in managing my performance within my profession. My favourite saying is he more I learn the less I know. I am always learning and holding my work to the highest standard I can achieve and thrive in raising the bar with every project.

A demonstrated ability to work as part of a team and to show leadership when required

All my past projects have been in a team environment. I have taken the role of member and leader in many instances. As I'm required to work in an agile environment, I am constantly learning and improving among a team of engineers. I have no preference of being a team leader or not, I rather let the consensus of the team dictate the structure while considering relevant experience between members.

Please don’t hesitate to contact me if you have any further questions. I would be honoured to be apart of the team at Industrus. My skills, experience and passion would make me a great candidate. I hope to hear from you in due course.

Kind regards,

Jacob Elali

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Bibliography

Mohammed Wazed, Hughes, B. R., O’Connor, D., & Kaiser Calautit, J. (2018). A review of sustainable solar irrigation systems for Sub-Saharan Africa. *Renewable & Sustainable Energy Reviews*, *81*, 1206–1225. https://doi.org/10.1016/j.rser.2017.08.039