Bahrain Polytechnic Research Booklet

2018/2019

Research 2018-2019 activities at Bahrain Polytechnic

Bahrain Polytechnic was established to address the need for a skilled Bahraini labor force, aiming to support the Kingdom with economic growth and diversification. We deliver applied and technical qualifications to ensure our graduates are groomed to be work-ready, confident, and trained for a professional industrial environment.

As a learning organization, we are continuously updating our academic practices through engagement and conducting research with industries and stakeholders. Therefore, we are keen to be involved in applied research and innovation activities to provide the best human and technical solutions to industrial institutions and enterprises.

We would like to showcase our research activities by publishing our first Research Booklet, featuring a variety of faculty and student research activities for the year 2018-2019.

We would like to thank our faculty members and students for their hard work and dedication towards their research efforts, as we strive to collaborate with organizations in the Kingdom of Bahrain and the region for more research and innovation activities in the coming future.

Research 2018-2019
activities at Bahrain Polytechnic

Faculty of Engineering, Design, Information and Communication Technology (EDICT)

Journal papers by EDICT

Dr. Odyssefs Effraimidis

Tutor of Web Media at Bahrain Polytechnic Odyssefs Effraimidis is a tutor of Bachelor of Web Media at Bahrain Polytechnic. His current research interests are in the areas of machine learning and computer vision.

Detection of Seam Carving in Uncompressed Images using eXtreme Gradient Boosting, International Journal of Computer Science and Information Security, vol. 16, no. 5, pp. 1–5, 2018. 2

A digital image forensic approach to detect whether an image has been seam carved or not is investigated herein. Seam carving is a content-aware image retargeting technique which preserves the semantically important content of an image while resizing it. The same technique, however, can be used for malicious tampering of an image. 18 energy, seam, and noise related features defined by Ryu are produced using Sobel's gradient filter and Rubinstein's forward energy criterion enhanced with image gradients. An extreme gradient boosting classifier is trained to make the final decision. Experimental results show that the proposed approach improves the detection accuracy from 5 to 10% for seam carved images with different scaling ratios when compared with other state-of- the-art methods.

Dr Vasileios Palktzoglou

Vasileios is an ICT tutor at Bahrain Polytechnic

Microblogging as an assisted learning tool in Problem-Based Learning (PBL) in Bahrain: The Edmodo case
In I. Management Association (Ed.), Online Course Management: Concepts, Methodologies, Tools, and Applications (pp. 837-855). Hershey, PA: IGI Global. doi:10.4018/978-1-5225-54721.ch043

The study is part of a series of studies related to the use of social media tools in higher education. In particular, the authors investigate the students' level of familiarity, engagement, and frequency of use of social media technologies. They analyze the experiences of using the Edmodo tool to support PBL, and they relate participants' opinions regarding the use of the tool. The data was collected using two questionnaires and a focus group interview at the end of the course. The main findings of this study are comparable and somehow familiar to their previous study (Paliktzoglou & Suhonen, 2014). Moreover, with regards to the adoption of Edmodo as a learning tool to support PBL, although literature argues that cultural differences play an important role in the acceptance of learning tools (i.e., Cheung, Chiu, & Lee, 2011), the results indicate that Edmodo has a positive reception as learning tool in blended learning to support PBL.

Dr. Owen Gallagher

Academic Tutor of Web Media at Bahrain Polytechnic. Dr. Gallagher is specialized in audio and video post-production, 3D modeling and animation, motion graphics and interactive application development

Journal Book Review: This is Not a Remix: Piracy Authenticity and Popular Music by Margie Borschke. Reviewed by Owen Gallagher. USA: Media Theory Journal, December 2018

This is Not a Remix is a densely-packed academic monograph based on Margie Borschke's research into the changing meaning of remix in the context of music culture.
[Borschke offers perspectives on questions regarding the nature of remix and the role of copies in how we understand media. He read This is Not a Remix twice for this review, first as an ebook on an iPad, swiping right to reveal more of Borschke's thesis, and then as a paperback—an altogether more tactile experience, due to the smell of fresh ink on paper, the physical act of turning the pages and the eye-catching cover. The content of both versions was exactly the same, yet the experience of reading each book was fundamentally different. Following Borschke's argument, each is a copy but also a different instance of the source material. In this case, the form of the content is also different, even though the arrangement of words, sentences, paragraphs and chapters is precisely the same.

Dr. Christina G. Georgantopoulou

Academic Tutor of Mechanical Engineering at Bahrain Polytechnic. Dr. Georgantopoulou is a Mechanical Engineer with PhD in Computational Fluid Dynamics from National Technical University of Athens

Mr. Nikolaos S. Vasilikos
Academic Tutor of Mechanical Engineering at Bahrain Polytechnic
Mr. Vasilikos is a Mechanical Engineer (BEng), with MSc in Environment and Safety, while he has also received his BEd with specialization in teaching methodologies in engineering courses

Recirculating flows analysis and estimation inside channels
George Georgantopoulos, Matec web of conf, vol. 172, pp. 0100101009.

The recirculation which is developed during the flows inside pipes present a high interest in many industrial applications. In the present paper, a Cartesian grid method is presented which can be applied in pipes geometry approximation, even if the solid bounds are not lying on grid lines. A refinement technique using rectangular nested sub-girds is applied in order to avoid the unnecessary grid cells in the areas with no particular flow interest and cluster the grid when is needed. Important and useful for the industries results are extracted by these numerical simulations and estimations regarding the exact position and extend of the recirculation zones and the relating points. The estimation is taking placefor incompressible laminar, viscous flows inside inclined step channelsfor a range of inclination angles and Reynolds numbers values. The Navier – Stokes equations are solved using the artificial compressibility method according to the necessary boundary conditions arrangement. Flow results are presented for several grid sizes and Reynolds numbers focused on the recirculationzones length, in upper and lower channel' walls. Accepted accuracy of the flow results is produced using the aforementioned refinement algorithm, while the flow zones can be located according to the inlet flow rate, in order to avoid possible problems in the industries -as corrosion or energy losses.

Dr. Ahmed Abdelrhman
Academic Tutor of Mechanical Engineering at Bahrain Polytechnic
Dr Abdelrhman primary research interests are being in the field of Vibration Analysis, Machinery Condition Monitoring, Machine Faults Detection & Diagnosis, Acoustic Emission and Signal Processing. He published numerous research papers and journal articles within his fields of interest.

A Comparative Experimental Study on the Use of Machine Learning Approaches for Automated Valve Monitoring Based on Acoustic Emission Parameters

Acoustic emission (AE) analysis has become a vital tool for initiating the maintenance tasks in many industries. However, the analysis process and interpretation has been found to be highly dependent on the experts. Therefore, an automated monitoring method would be required to reduce the cost and time consumed in the interpretation of AE signal. This paper investigates the application of two of the most common machine learning approaches namely artificial neural network (ANN) and support vector machine (SVM) to automate the diagnosis of valve faults in reciprocating compressor based on AE signal parameters. Since the accuracy is an essential factor in any automated diagnostic system, this paper also provides a comparative study based on predictive performance of ANN and SVM. AE parameters data was acquired from single stage reciprocating air compressor with different operational and valve conditions. ANN and SVM diagnosis models were subsequently devised by combining AE parameters of different conditions. Results demonstrate that ANN and SVM models have the same results in term of prediction accuracy. However, SVM model is recommended to automate diagnose the valve condition in due to the ability of handling a high number of input features with low sampling data sets.

Observations of changes in acoustic emission parameters for varying corrosion defect in Reciprocating compressor valves, Ain Shams Engineering Journal, 2019

Acoustic Emission (AE) technology is probably one of the most recent entries in the field of machinery condition monitoring. This paper investigates the application of AE parameters for valve faults detection in reciprocating compressor. The defective valves were designed by emulating the actual valve corrosion with varying sizes such that defects could be applied onto the reciprocating compressor. A set of experiments was performed to acquire the AE signal. The primary source of AE signal was verified using waveform analysis. The AE parameters versus different operational and valve condition were illustrated individually. In addition, the significance of the change and sensitivity of

AE parameters versus different experimental conditions was verified using MANOVA and coefficient of variance analysis. It is concluded that the AE signal parameters can be used to detect the valve faults in the reciprocating compressor with the consideration of the variation in the AE parameters sensitivity. Keywords: Reciprocating compressor, Valve fault detection, Acoustic emission parameters, MANOVA, Coefficient of variance
https://www.sciencedirect.com/science/article/pii/S2090447919300103

Automated Valve Fault Detection Based on Acoustic Emission Parameters and Artificial Neural Network, MATEC Web of Conferences 255, 02013, 2019

Reciprocating compressor is one of the most popular classes of machines use with wide applications in the industry. However, valve failures in this machine often results unplanned shutdown. Therefore, the effective valve fault detection technique is very necessary to ensure safe operation and to reduce the unplanned shutdown. This paper proposes an artificial intelligence (AI) model to detect valve condition in reciprocating compressor based on acoustic emission (AE) parameters measurement and artificial neural network (ANN). A set of experiments were conducted on an industrial reciprocating air compressor with several operational conditions including good valve and faulty valve to acquire AE signal. A fault detection model was then developed from the combination of healthy-faulty data using ANN tool box available in MATLAB. The results of the model validation demonstrated accuracy of valves condition classification exceeding 97%. Eventually, the authors intend to do more efforts for programming this model in smart portable device which can be one of the innovative engineering technologies in the field of machinery condition monitoring in the near future.
https://www.sciencedirect.com/science/article/pii/S2090447919300103

Adapted Wavelet Transform for Twisted Blade Diagnosis in Multi Stage Rotor MATEC Web of Conferences 255, 02011, 2019

This paper studies the diagnosis of twisted blade in a multi stages rotor system using adapted wavelet transform and casing vibration. The common detection method (FFT) is effective only if sever blade faults occurred while the minor faults usually remain undetected. Wavelet analysis as alternative technique is still unable to fulfill the fault detection and diagnosis accurately due to its inadequate time-frequency resolution. In this paper, wavelet is adapted and its time-frequency is improved. Experimental study was undertaken to simulate multi stages rotor system. Results showed that the adapted wavelet analysis is effective in twisted blade diagnosis compared to the conventional one.

https://www.matecconferences.org/articles/matecconf/abs/2019/04/matecconf_eaaic2018_02011/matecconf_eaaic2018_02011.html

Dr. Alan Oxley
Academic Tutor of Information Communication Technology at Bahrain Polytechnic

Oxley, A., (2018) "Estimating the Power of Wind Turbines, Revisited", Mathematics Today, vol. 54, no. 4.

There are various design considerations including the design of the blades and the control of the turbine. Fig. 1 shows the hub and blades of a wind turbine. A turbine blade's cross-section is an aerofoil. The turbine rotates because of the lift force on the blades. The wind speed at the turbine is v. Where the cross-section has been taken, the blade moves perpendicular to the direction of the wind with speed Ωr, where Ω is the rotational speed of the turbine. Fig. 2 shows the component velocities acting on a point of the cross-section. Resolving the velocities gives the direction that the wind force is actually having on the point. The resultant is not perpendicular to the xy-plane. The angular difference between the nominal wind direction and the resultant direction is called the 'angle of attack.' Its value is given by $\tan^{-1}\frac{\Omega r}{v}$. The blade is twisted along its length so as to reduce the angles of attack. The amount of twist increases as one moves from the hub to the tip of the blade. The angles of attack are typically just a few degrees. With wind turbines, a value that is often cited is the 'tip speed ratio' (λ): $\lambda = \frac{\Omega R_T}{v}$ where Ω is the rotational speed of the turbine, RT is the radius of the turbine blade, and v is wind speed at the turbine. The 'tip' referred to in 'tip speed ratio' is the outer edge of the blade that is tangential to the circle of radius RT.

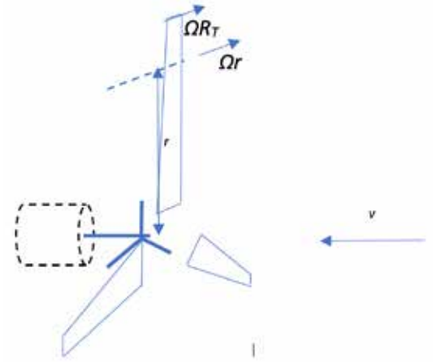

Figure 1. Hub and blades of wind turbine.

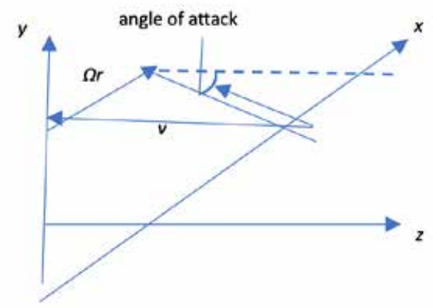

Figure 2. Forces acting on a point of the blade's cross-section, distance r from the hub's axis.

Another feature of a wind turbine is that it is controlled. One of the ways of doing this is to rotate the blades when there is high-speed wind, so as not to damage the turbine.

Alan Oxley, "Simple empirical models of classifying patients from microarray data", Kuwait Journal of Science, January 2019

"There have been tremendous advances in bioinformatics in recent years. One of these is the use of microarrays for collecting Big Data. This paper reports on the work carried out by the author in devising models to classify patients by conducting microarray data analyses. The problem is to determine, for each patient, which class he/she belongs to. For example, one class may be 'has the disease' whilst the other class is 'does not have the disease.' Membership of a class can aid in giving a patient a prognosis. Often only a small number of genes are significantly affected by the presence of a disease and so it is possible to classify a patient by looking at this small number of genes. Two models for classifying atients from gene expression microarray data were developed. One model involves an existing algorithm whilst the other involves a new algorithm. The models involve some simple mathematical techniques – the two sample student's t-test, Diagonal Linear Discriminant Analysis – and a newly developed technique which shall be called Multiplicative Probabilistic Discriminant Analysis. Each model has been implemented as a computer program. The research restricted itself to one dataset. Prior to using the models, the raw data must be pre-processed."

Mr. Iftikhar Ahmed

Iftikhar Ahmad is a Tutor in Mechanical Engineering at Bahrain Polytechnic. He received his Bachelor's and Master's degrees in Mechatronics Engineering from University of Engineering and Technology, Peshawar, Pakistan in 2015 and 2017 respectively. His current field of interest comprises Energy Harvesting from Vibration, Acoustic and Fluid Flow for IoT Sensors and Bio- medical devices, MicroElectro Mechanical System (MEMS), Performance Enhancement of Photovoltaic cell and Structural Health Monitoring

A. M. Abdelrhman, M. S. Leong, Y. H. Ali, I. Ahmad, C. G. Georgantopoulou and S. M. Ali, (2019), Adapted Wavelet Transform for Twisted Blade Diagnosis in Multi Stage Rotor, In MATEC Web of Conferences (Vol. 255, p. 02011). EDP Sciences. https://doi.org/10.1051/matecconf/201925502011

This paper studies the diagnosis of twisted blade in a multi stages rotor system using adapted wavelet transform and casing vibration. The common detection method (FFT) is effective only if sever blade faults occurred while the minor faults usually remain undetected. Wavelet analysis as alternative technique is still unable to fulfill the fault detection and diagnosis accurately due to its inadequate time-frequency resolution. In this paper, wavelet is adapted and its time-frequency is improved. Experimental study was undertaken to simulate multi stages rotor system. Results showed that the adapted wavelet analysis is effective in twisted blade diagnosis compared to the conventional one.

G. Hussain, W. A. Khan, H. Anas Ashraf, H. Ahmad, H Ahmad, I. Ahmad, K. Rahman, G. Abbas (2019), Design and development of a lightweight SLS 3D printer with a controlled heating mechanism: Part A, International Journal of Lightweight Materials and Manufacture (IJLMM), Elsevier,

Selective laser sintering (SLS) is one of the hot topics in the manufacturing research community. The SLS printers developed by the researchers have shown a great potential, however, it needs a lot of improvements to be considered for commercial usage. Here, we report an improved design of the SLS printer with a unique heating mechanism to ensure enhanced mechanical properties of the final part. These improvements came in the form of enhanced heating mechanism for the printer once the reverse engineering concepts were put together to come up with an innovative yet scalable design. The design included two axes movement of the laser via computer numerical control (CNC) router as opposed to traditional complex controlled reflecting mirrors. Complete mathematical models were developed regarding the laser power, motor torque and determining the specific layer height for layer by layer sintering based on the nylon powder as the raw material. Static structural analysis was carried out on the printer to identify the material to be used for required strength. Complete electrical control of the printer was developed using Raspberry Pi which was coded via python to control the motors of each axis in the printer. Successful testing of the electronic and control system of the proposed SLS printer is also illustrated in this work.

Book Publications by EDICT

Dr. Christina G. Georgantopoulou
Academic Tutor of Mechanical Engineering at Bahrain Polytechnic
Dr. Georgantopoulou is a Mechanical Engineer with PhD in Computational Fluid Dynamics from National Technical University of Athens

“Fluid Mechanics in channel, pipe and aerodynamic design geometries, Vol. I & II, Christina Georgantopoulou, G. Georgantopoulos, WILEY and ISTE, London, 2018

Fluid mechanics is an important scientific field with various industrial applications for flows or energy consumption and efficiency issues. This book has as main aim to be a textbook of applied knowledge in real fluids as well as to the Hydraulic systems components and operation, with emphasis to the industrial or real life problems for piping and aerodynamic design geometries. Various problems will be presented and analyzed through this book.

Conference Papers/ Presentations by EDICT

Dr. Christina G. Georgantopoulou
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Dr. Georgantopoulou is a Mechanical Engineer with PhD in Computational Fluid Dynamics from National Technical University of Athens

1- Block nested cartesian refinement and numerical solution for recirculating flows, Christina Georgantopoulou, Keynote speech - article, Proc. ICDAMS 2018, Chennai, India, April 2018.
2- Boundary Lawyer and applications”, Georgantopoulos G., Georgantopoulou C, Proc. ICDAMS 2018, Chennai, India, April 2018.

Mr. Nikolaos S. Vasilikos
Academic Tutor of Mechanical Engineering at Bahrain Polytechnic
Mr. Vasilikos is a Mechanical Engineer (BEng), with MSc in Environment and Safety, while he has also received his BEd with specialization in teaching methodologies in engineering courses

Renewable resources of energy and PV panels efficiency optimization for GCC countries”, Nikolaos Vasilikos, Christina Georgantopoulou, Proc. ICDAMS 2018, Chennai, India, April 2018.

Dr. Christina G. Georgantopoulou
Assistant professor of Mechanical Engineering at Bahrain Polytechnic
Dr. Georgantopoulou is a Mechanical Engineer with PhD in Computational Fluid Dynamics from National Technical University of Athens

Dr. Ahmed Abdelrhman
Assistant professor of Mechanical Engineering at Bahrain Polytechnic
Dr Abdelrhman primary research interests are being in the field of Vibration Analysis, Machinery Condition Monitoring, Machine Faults Detection & Diagnosis, Acoustic Emission and Signal Processing. He published numerous research papers and journal articles within his fields of interest.

Dr. Saam Najat
Dr Sam Najat is a Tutor in Mechanical Engineering at Bahrain Polytechnic. He holds PhD in Automatic Control & Systems Engineering from the University of Sheffield. His PhD research contributions were predominantly based on the development of novel automated multi-aircraft conflict resolution algorithms and multi trajectory disorder estimation under a novel collaborative free flight concept.

Mr. Syed Asad Imam
Syed Asad Imam is Tutor of Mechanical Engineering at Bahrain Polytechnic. His expertise is in the areas of CAD and Structural Analysis. He is actively involved in teaching as well as course development for bachelor's level. He is also working to get Bahrain Polytechnic established as a certified center for Solid works and Auto Cad.

Wearable vibration based hybrid energy harvester for wearable devices
Ahmad, A. Abdelrhman, C. Georgantopoulou, S. A. Imam and S. Najat. (2019).
the 8th International Conference on Modeling, Simulation and Applied Optimization (ICMSAO'2019), Isa Town, Bahrain, Presented on 17th April 2019

Wearable devices are used in human health monitoring and their demand is increasing day by day. The limited shelf life of the batteries in these devices is one of the main problems. Research is going on either to increase the battery life or to replace the battery with some alternatives. In this research, a vibration based hybrid energy harvester has been illustrated to overcome the power problem of the wearable devices. The piezoelectric and electromagnetic transduction mechanisms are used to develop a hybrid mechanism for the enhanced output voltage. Two piezoelectric beams with wound coils have been fixed in 3D printed spacers to yields a prototype having the total volume of 10.8 cm3. The prototype can generate a maximum open circuit voltage of 1640 mV at a very low vibration level of 1.5 g which proves that the device is suitable for low vibration environment such as human body vibration.

Journal papers by Business

Ms. Fahdia Khalid
Academic Tutor of Business at Bahrain Polytechnic
Fahdia Khalid is professor of human resource management, programme manager for Year 1 and 2, and a member of Programme Committee in the Business School at Bahrain Polytechnic.

Mr. Darren Morris
Academic Tutor of Marketing in Business Programme at Bahrain Polytechnic

Teaching and Learning for Employability: triangulating three perspectives. A case of Bahrain Polytechnic

Even though many efforts have been reported worldwide on the matter, the complexity surrounding how to integrate the goal of graduate employability into current Higher Education practices is a recurring theme of discussion (EUA, 2013; Green et al, 2013; Pegg et al, 2012; Tomlinson, 2012; Drăgan et al., 2012; Lowden et al, 2011; BIS, 2011). Several Teaching and Learning (T&L) practices have been identified and discussed as conducive to employability (BIS, 2011; Pegg et al, 2012). Bahrain Polytechnic, a Higher Education Institution (HEI) in the Arabian Gulf, presents an innovative approach to HE compared to common HE practice in the region with a specific focus on the development of employability in its students driven by the Bahrain Vision 2030. In order to evidence its claim of producing work ready graduates, the institution searches for ways to showcase its practices and results in relation to graduate employability. In light of the fairly recent formal inclusion of employability indicators in national and international accreditation frameworks, HEI's need to present mechanisms to review and report on their fitness for purpose inclusive of employability (DEEWR, 2010; Miller & Leske 2005; Gonzales & Wagenaar, 2005, 2008). This study aims to report on T&L practices for employability deployed at the Marketing Major of the Bachelor of Business programme at Bahrain Polytechnic and industry's feedback on the employability of final year Marketing students. In recognition of the existence of more comprehensive validation frameworks in relation to HEI's' fit for purpose, the authors of this study attempt to validate the T&L practices evidenced at Bahrain Polytechnic only in terms of its fitness for purpose towards graduate employability. This validation attempt is built upon triangulating the findings of course documentation evaluation for employability, faculty perception on their intentions in courses towards employability and industry's feedback on final year students' employability. Employer's perception on the employability of soon -to-be graduates are an important and valid yardstick for the quality of output a HEI produces in relation to the validation of HEI's intentions towards employability (Vande Wiele et al, 2014; Cai, 2013; Tomlinson, 2012; Jackson, 2013). This study is part of the development of a more comprehensive diagnostic mechanism to evaluate a HEI' s address towards employability

Dr Layla Al halwachi
Academic Tutor of Business at Bahrain Polytechnic
Dr. Layla is Professor of Business at Bahrain Polytechnic since August 2017. She is the first Bahraini PhD holder from Brunel University in Gender and Management Studies.

Alhalwachi L. F.(2018),Conceptualising Empowerment, Gender and Quota: The Implications of women's Leadership Styles at Managerial Positions, International Journal of Advances in Management and Economics (IJAME).

Empowerment is a topic which has been subject to a considerable amount of debate in recent years. Not only is there discussion surrounding what empowerment means and encompasses (Cox et al., 2006), there is also discussion as to how it should be applied effectively (Denham-Lincoln, 2002). Research in this area indicates that numerous factors impact upon perceptions of empowerment, and it would appear that a combination of intrinsic and extrinsic factors influences the extent to which an individual perceives they are empowered, and even the way in which an individual perceives they are empowered (Cooney, 2004). This work concentrates on perceptions of female empowerment in senior leadership roles and determines that the most critical factors influencing perceptions of female empowerment are derived from individual approaches to leadership and the

extent to which a female is supported in their position. Unfortunately, the research demonstrates that the actual situation facing female leaders in the workplace and the extent to which they are empowered is significantly less than the ideal state might wish. Attempts to redress the balance have included discussions surrounding the use of quotas to help empower women (Colney, 2011), and also alternative forms of training and mentoring to help provide women with the necessary techniques and skills to achieve parity in the workplace. Overall the research establishes that there is no single solution to the problem of empowerment. This situation is exacerbated by the chasm between perception

http://www.managementjournal.info/index.php/IJAME/issue/view/56

Alhalwachi L. F., Alqubaiti.E, Hassan.N, Ahmed.Fatema. (2018), Challenges Facing Women Entrepreneurs In The Kingdom Of Bahrain, International Journal of Advances in Management, Economics and Entrepreneurship.

The purpose of this study is to identify the challenges Bahraini women entrepreneurs face in Bahrain, to improve the understanding of these challenges and promote an environment where both female and male entrepreneurs can thrive. The problem is that there is a knowledge gap due to the scarcity of studies. Previous research has been done about this topic in different contextual settings, but none of them is contemporary and done in Bahrain only. Therefore, this research will attempt to fill the knowledge gap by studying the challenges faced by today's Bahraini women entrepreneurs in Bahrain only. Hence, the research question is what are the challenges faced by women entrepreneurs in the Kingdom of Bahrain? The researchers chose the topic of women entrepreneurship because it contributes to the development of individuals, societies and the country's economy. It aids in utilizing the talents and skills of half of the population. This is why it is important that Bahrain identifies the challenges today's Bahraini women entrepreneurs face in order to be able to eliminate them and allow women to succeed and thrive. It is evident that improvements have been made, but much still need to be done to help women entrepreneurs succeed in their fields. Yet, there is a knowledge gap in research about the topic and therefore this paper suggests a method composed of interviews, surveys and a comprehensive review of existing literature to fill the gap. However, the suggested method does not include asking the participants for recommendations and it would be suitable to hire the same professionals to interview and analyse the interview responses.

http://www.ijamee.info/index.php/IJAMEE/issue/view/63

Alhalwachi L. F., Sabt.H, Almajed.H, (2018),Women Manager in Bahrain: positive steps towards gender equality and Successful Careers , International Journal of Advanced Research and Publications (IJARP).

The purpose of this research is to explore the career success of women managers in the Kingdom of Bahrain. The paper examines the interplay of cultural, national, and organizational factors in explaining individuals' experience of career success. The underlying reason for this research is that there is a gap in the knowledge, regarding the context of the Arab region as such issues are rarely tackled in this region, this paper hopes to fill the gap in the literature regarding the women managers careers experience and success in addition to the underlying reason for their experience. The method recommended for this research is semi-structured interviews that should be conducted with women from a multitude of echelons in management such as junior, senior and high management the interviews may last for 30 minutes to 90 minutes, moreover the interviews should be conduct in locations that are private or in accordance with the interviews preference to allow the interviews to speak freely about their experiences, interviews should be recoded and coded for research purposes. The findings of this paper indicate that women are likely to perceive themselves as successful in non-monetary terms such as balance between family and work in addition to colleague's respect and appreciation, furthermore, findings indicate that cultural, national, and organizational have an influential impact on women careers success and behaviors. This research hopes to augment this study as a platform for future researches, furthermore this research seeks to appeal for decision makers in the region in contemplation of realizing women potential in the workforce by eliminating cultural, national, and organizational that subliminally halt women progression and society development

http://www.ijarp.org/published-research-papers/aug2018/Women-Manager-In-Bahrain-Positive-Steps-Towards-Gender-Equality-And-Successful-Careers.pdf

Alhalwachi L. F., (2018) Alansara. S, Alhalwachi.R, Factors Affecting Women Maintain Their Weight and Relapse in Obesity, International Journal of Ayurveda

This paper focuses on Bahraini obese women who has lost weight either by pharmacological or physical treatment, it explores the psychological reasons that leads them to re-gain their lost weight over time, in contrast with those who are able to maintain their weight after the treatment journey. However, this research paper tries to eliminate and make people aware of obesity effects in the country. Through a review of the research, the aim is to fulfill the gap due to the scarcity of knowledge for this study. A significant amount of studies has been done previously about obesity in different contextual settings. However, a lot of has been done also in Bahrain, but none of them has focused on women and none of them showed the importance of

psychological factors in any context. Thus, the research question is as followed ‘What are the psychological factors associated with successfully prolonging the new weight, in contrary with weight regain?’

http://ija.kibanresearchpublications.com/index.php/IJA/issue/view/20

Al-Halwachi, L. F. (2018). Female Leadership Style: Evolving Paradox. International Journal of Academic Research in Business and Social Sciences, 8(6), 773–794.

Certainly there is plentiful evidence to demonstrate that female leaders are as, if not more, capable than their male counterparts. Reasons for this include their natural leadership style being collaborative and cooperative, leading to an engaged workforce. They are also risk-averse and take a strategic or holistic view in regard to business decisions, leading to a more balanced level of organisational growth. There is some limited evidence to suggest that there are physiological reasons to support this (principally the ability of most women to manage and monitor multiple streams of information simultaneously), which is clearly a desirable trait in a leadership situation. However the statistical evidence shows that time and again women are either denied leadership positions or choose not to pursue them beyond a particular managerial level. There is debate surrounding this as to whether women choose to opt out or are forced to do so by extrinsic and intrinsic societal pressures. Some research has shown that women who do opt out of senior roles by choice often choose to pursue personal interests and are highly successful. Given the scarcity of research in this area, the article presents an overview of women leadership style which is stereotyped as feminine.

http://hrmars.com/index.php/journals/archive_detail/IJARBSS/211

Alkhater, N., Alhalwachi,L. Development of HRM Training Practice under Saudi Arabia’s Vision 2030. International Journal of Academic Research in Business and Social Sciences

This paper studies the development in the human resources management training of domestic enterprises (DEs) Vs. multinational subsidiaries (MNSs) under Saudi Vision 2030 was formed in 25 April 2016 by Crown Prince Mohammad bin Salman. Based on the literature MNSs are more rigorous in their training practices. So, the hypotheses were predicted from literature as MNSs are more interested in their training. Findings were confirmed that predicted hypotheses were statistically significant. MNSs utilized more sophisticated training practice. Also, this paper considered the comparative in terms of local Saudi workforce. When MNSs have more local force were found to place more significance on training development . The literature was explored in order to confirm this study is only one in the context of Saudi Arabia. This study was added to understand of HRM practices between two different types of organizations. Furthermore, this study had suggestion for future research.

http://hrmars.com/index.php/papers/detail/IJARBSS/4705

Alkhater, N., Alhalwachi,L. Naser,A., (2018), Development of HRM Appraisal Practice in Saudi Arabia. Journal of Higher Education Service Science and Management (JoHESSM)

The study was undertaken with the objective to understand Strategic Human Resource Management (SHRM) practice in domestic enterprises (DEs) and multinational enterprises (MNEs) in the country context of the Kingdom of Saudi Arabia (KSA). The literature suggested that there would be a number of important differences in core HR appraisal practice when it comes to executing these within the domestic and multinational work environment of business enterprise. Four (4) testable hypotheses were drafted after scanning the literature on the subject; these were then put to test with the help of primary data collected from 255 firms, two-thirds of which were DEs whilst the remaining one
-third were MNEs. Data that were analyzed with the help of parametric and non-parametric tests revealed several interesting facts. The results confirmed that MNEs followed better HR performance appraisal than DEs, and more structured incentives and rewards system. This is one of a few studies conducted in the context of a non-Western environment and points out a number of policy implications and future avenues of research.

https://www.joherd.com/journals/index.php/JoHESSM/issue/view/1
https://www.joherd.com/journals/index.php/JoHESSM/article/view/4

Eman Ebrahim Askar
Academic Tutor of Business at Bahrain Polytechnic
Eman Askar is the Program Manager for Year 1&2 at the Faculty of Business.
She is a member of the Entrepreneurship Committee at Bahrain Polytechnic, Quality Improvement Plan and Procurement Board.

Asker, E (2018), Attitude & Motivation towards Learning: A Study from Bahrain Polytechnic. International Journal of Advances in Management and Economics
Abstract: The purpose of this study is to identify the factors that impact students' attitude and motivation towards learning. The current study was conducted to improve the understanding of the factors that contribute towards academic progress of a student. The problem is that there is a knowledge gap due to limited studies related to students at risk. Previous research has focused on attitude and motivation in different contextual settings, but none of them really focused on the attitude and motivation of students that are identified at risk. Additionally, this research will fill the knowledge gap by studying how attitude and motivation can minimize the number of students at risk. Hence, the research question is what are the challenges faced by students at risk in learning? What factors contribute and lead the students to be identified at risk? This topic has been selected because it contributes towards the development of the learners, it will enhance the understanding of the academics on what attributes and factors will impact the students that are at risk of failure or withdraw, as it is a phenomenal that all the academic institutions are facing. Yet, there is a knowledge gap in research about the topic, furthermore this paper suggests a method composed of surveys and a comprehensive review of existing literature to fill the gap. Studies reveal that attitude is one of the central elements along with motivation in determining success in learning. To guide this study, attention will be directed toward the factors and attributes responsible for attitude and motivation

http://www.managementjournal.info/index.php/IJAME/issue/view/61

Dr. Fatema Wali
Dr. Fatima Wali is a Senior English Language Tutor in the Foundation Programme Programme at Bahrain Polytechnic.
Dr. Fatima's current research interests include on-line language learning, English as a Second Language, Computer Assisted Language Learning, Interdisciplinary Education, Entrepreneurship Education and Problem Based Learning

Exploring the impact of an online game-based learning platform on Bahraini students' learning
The development of syntactic and semantic accuracy plays a vital role in the writing of learners of English as a Second Language (ESL). While explicitly teaching grammatical structures has always been debatable in ESL teaching, ESL teachers and researchers in Applied Linguistics and Second Language Acquisition (SLA) continue applying new strategies to improve learners' writing. While a vast body of research has examined grammar and vocabulary accuracy in students' writing, few studies have focused on the development of syntactic and semantic accuracy among Arabic speaking learners of English using online game-based learning tools.
This case-study examined firstly the level of grammatical and lexical accuracy of Bahraini learners of English in their foundation year at a higher education institute. The investigation then explored the impact that gamification or online game-based tools had on learners' written productions in English as a foreign language, tracking development over the course of two academic years. The intervention applied to improve learners' grammatical and lexical development involved a significant online game-based component. Students' perceptions were analysed to identify the usefulness of the online game-based platforms in teaching English as a Second Language.

Book Publications by Business

Dr Layla Al halwachi
Academic Tutor of Business at Bahrain Polytechnic
Dr. Layla is Professor of Business at Bahrain Polytechnic since August 2017. She is the first Bahraini PhD holder from Brunel University in Gender and Management Studies.

Al-Halwachi, L. F. (2018). Female Leadership Style: Evolving Paradox. LAP LAMBERT Academic Publishing.

Certainly there is plentiful evidence to demonstrate that female leaders are as, if not more, capable than their male counterparts. Reasons for this include their natural leadership style being collaborative and cooperative, leading to an engaged workforce. They are also risk-averse and take a strategic or holistic view in regard to business decisions, leading to a more balanced level of organisational growth. There is some limited evidence to suggest that there are physiological reasons to support this (principally the ability of most women to manage and monitor multiple streams of information simultaneously), which is clearly a desirable trait in a leadership situation.

However the statistical evidence shows that time and again women are either denied leadership positions or choose not to pursue them beyond a particular managerial level. There is debate surrounding this as to whether women choose to opt out or are forced to do so by extrinsic and intrinsic societal pressures. Some research has shown that women who do opt out of senior roles by choice often choose to pursue personal interests and are highly successful.

Students Publications

In June, 2018, a paper titled " CHALLENGES FACING WOMEN ENTREPRENEURS IN THE KINGDOM OF BAHRAIN" has been published by three Polytechnic students; Eman Alqubaiti, Noor Hasan , and Fatema Ahmed in the International Journal of Advances in Management, Economics and Entrepreneurship (IJAMEE). This was done under the supervision and guide of Dr Layla Faisal Alhalwachi.

The paper aimed at exploring the different challenges faced by women entrepreneurs in the Kingdom of Bahrain specifically, in order to improve the understanding of these challenges and promote an environment where both female and male entrepreneurs can thrive.

In July, 2018, a paper titled "women managers in Bahrain: positive steps towards gender equality and successful careers "has been published by two students: Hussain Taher, Hussain Ali. In the International journal of advanced research and publications (IJARP). This was done under the supervision and guidance of Layla Faisal Alhalwachi.

The purpose of this research is to explore the career success of women managers in the Kingdom of Bahrain. The paper examines the interplay of cultural, national, and organizational factors in explaining individuals' experience of career success

In July ,2018 a paper titled “FACTORS AFFECTING WOMEN MAINTAIN THEIR WEIGHT AND RELAPSE IN OESITY” has been published by the two polytechnic students; Raya Alhalwachi, and Sana Alansara in international journal of Ayurveda.

This was done under the guide and supervision of Dr Layla Faisal Alhalwachi
The paper focuses on Bahraini obese women who has lost weight either by pharmacological or physical treatment. It explores the psychological reasons that leads them to re-gain their lost weight over time, in contrast with those who are able to maintain their weight after the treatment journey.

Students’ projects

Faculty of Engineering, Design, Information and Communication Technology (EDICT)

School of Information and Communication Technology

Project Title: Campus Information System

Student Name: Reem Neama
Academic Supervisor: Mohamed Abdi Osman

In high-level education institution, there are a lot of important events are happening, and not many of their community are aware of the things that are happening at the moment. There is a different type of events that trigger a different kind of people, or news that is important to the whole community of that institution. This project aims to enhance the announcement process in higher education institution such as Bahrain Polytechnic and ensures that all stakeholders are aware of happenings. The techniques that most of higher educational environment uses are, posting events, sending emails and newsletters, which some of the community may not pay enough attention or forget about the timing of the event. And the newest way to aware the whole city is by considering the latest technologies, and methods that will attract as many people as possible, which is campus information system dashboard or digital signage. Digital signage is the new technology to announce news, events and it is now one of the most crucial roles in the dynamic world. The raspberry pi will be connected to the website through the Internet of Things (IoT), that will connect and communicate with wireless and wired mediums. The administrators will be able to control the raspberry pi to display events at specific times, and particular events and news. This will result in attracting more people participating in events whether or not it is related to their major, and news will spread to the mass of people in mere seconds.

Project Title: Make up Web App and Infrastructure

Student Name: Shaima Almeer
Academic Supervisor: Shahbaz AliShah

The expanse of micro businesses has sprung up in the Kingdom of Bahrain. Managing micro businesses which involves human interaction seems to be challenging due to lack in manpower and technology. This project aims at providing micro business, particularly makeup artists, with a solution that assists in scheduling service appointments. This project follows the System Development Life Cycle (SDLC) methodology which is the most frequently known process for planning, creating, testing and deploying an ICT solution. The proposed solution is a web-based application is entitled the “Makeover”. It facilitates the process of scheduling appointments with makeup artists, who find it difficult to manage their services. The application is built using a Content Management System (CMS), providing a solid infrastructure in terms of system availability, security, scalability and reliability. It is built on Amazon Web Services (AWS) following a multi-tier and highly coherent structure. Based on testing, the “Makeover” has achieved users’ satisfaction through speedy performance, streamlined booking, and convenient registration. This projects has achieved all of its objective and is expected to be well-perceived by the end users.

Project Title: Search for a Meal with Your Money (Web-Based Application)

Student Name: Sayed Hashem Ali
Academic Supervisor: Momir Radicevic

The growth of the restaurant industry is influenced locally and globally by new technology. As both markets expand, consumers and entrepreneurs begin to find the available methods for searching and selecting restaurants lacking convenience. More specifically, student and youth demographics that face constant confliction with budgeting for various reasons when deciding where to eat. Through shifting the focus to the budget element, restaurant guide services can discover a new market instead of just improving their marketability. This project aims to create a format that broadens and twists the options and features utilised by consumers to explore alternatives and make choices when searching for restaurants. The goal is achieved by creating a restaurant guide web-based application that includes a user end and restaurant end. By using a budget variable, the user views a list of meals affordable that can be filtered conveniently. The results are storable and straightforward, encouraging frequent use. Verified restaurants and entrepreneurs of different backgrounds are given a flexible platform to promote their services. They use the application to set up an updatable account and menu. Feedback received from target audiences indicates demand and likely success of this solution. It supports the habit of spending less and considerately encourages local entrepreneurship.

Project Title: Bahrain Central Capital Mobile App

Student Name: Ali AlKhawaja
Academic Supervisor: Christos Gatzoulis

Currently, in the Kingdom of Bahrain, there is no publicly available application for Capital Municipality where citizens can reach out and be involved in many decisions related to them. The use of outdated methods created a gap between Bahraini citizens and the Municipality. This project aims to close such a distance and ensure that citizens can reach to the Capital Municipality with ease and efficiency. Furthermore, to collect the public opinions using advanced technologies. This project employs Rapid Application Development (RAD) in which, prototypes were created with Photoshop, and the actual product was developed using Xcode with Swift programming language. The proposed solution is an IOS mobile app that will provide the ICT department at the Municipality the opportunity to communicate with Bharani citizens with ease. Moreover, the mobile application will store various information such as citizen’s data, complains, surveys and polls into MySQL database. As a result, communicating between the Municipality and the citizens will be modern since it is using the latest technologies.

Project Title: Bahrain Central Capital Admin Site

Student Name: AlKhawaja Kameel
Academic Supervisor: Christos Gatzoulis

In the past few years, the focus of e-government concept significantly raised. The developing countries are developing their services to provide batter life to their citizens by shifting their old paper-based system to an e-services system (Åke & Gunnar, 2016). The Capital Municipality of Bahrain is following that lead, and they are looking to improve their current communication system with the citizens by providing an e-solution application that could decrease the barriers between the council and the citizens by providing faster and more modern way of communications. A Rapid application development (RAD) applies in this project by sketching the prototypes using the Photoshop and develops the back-end application using MySQL database, NetBeans, and PHP language. The proposed solution for the current issue is to develop a web-based back-end application that integrates with an existing mobile application to gather data and generate reports based on citizens reviews and feedbacks, also to provide an e-service communicating system for citizens to facilitate the communication process among the two sides. As a result, This system enables the Capital Municipality to take advantage of reports generated based on the data gathering

and decrease the communication gap between the citizens and Bahrain Capital Municipality by establishing a new communication channel for the citizens. According to test phases, this project met the primary aim of the client requirements.

Project Title Claim Processing Mobile App

Student Name Fatema Moosa Husain Baqer Hasan
Work Placement Arima
Academic Supervisor John Ross

The motor insurance claim process is a complicated and lengthy process. A Tunisian Insurance company entitled “Assurances BIAT” sends out surveyors to assess the damage of vehicles after placing claims. This is an inefficient manual process that is prone to fraud and far from optimal. This project provides a digitised automated tool to optimise and accelerate the insurance claim process, increase efficiency and reduce the likelihood of fraud. This is achieved through the introduction of a mobile application into the motor insurance claim process. The application allows surveyors to view claim and mission information, take photo evidence, estimate loss amounts, utilise QR technology and forward claim documents. The application uses a cross-platform mobile development framework in conjunction with a native wrapper to provide a digitisation tool for surveyors to improve the vehicle assessment phase of the insurance claim process. These technologies allow the app to retain the native design of the deployment platform making the application usable regardless of platform.

Project Title Mobile Communication and Intervention App

Student Name Hamed Abdulla Ebrahim Abdulkarim
Work Placement Alia
Academic Supervisor Paul Farrell

The purpose of this project was to help students with special needs. Students with special needs included Autism / ASD, Aspergers, ADHD, ADD, FG syndrome. The project can help the students with special needs to learn essential knowledge that can aid to create a better world for everyone. The project uses Java and MySQL . It can provides the special needs’ students with access to interactive lessons with virtual aids like audio narration, educational videos and interactive learning. The project was unique since it focuses on supports the inclusion and development of those students.

Project Title Industry Portal V2

Student Name Husain Abdulnabi Merza Salman Saeed Alqayem
Work Placement Bahrain Polytechnic
Academic Supervisor Philippe Pringuet, PhD

Integrating work experience within the curriculum is proven to bridge the gap between industry and academia. The collaboration between higher education and industry contributes to producing a work-ready graduates. Since its inception in 2008, Bahrain Polytechnic (BP) have been developing partnerships with Industry. This project is part of BP mission of producing graduates equipped with 21st century skills necessary for the needs of the community. Currently, several departments in BP track Industry Partners’ details and potential projects and placements requests in excel spreadsheets. As such, inconsistent or redundant information created issues. This project aims to facilitate the communication between those departments, students, and industry. The proposed solution is a modular web-based application with a front-end and centralized back-end that serves multiple users and automates the current processes. The solution maintains industry partners and projects information, helps Industry Project Coordinators allocate students to work placements and archive related documents. The first phase of the project has been completed in the previous semester. This is the second phase in which extra functionalities were developed and the code have been restructured to meet Bahrain Polytechnic technical standards.

Project Title Learning Bite Mobile App

Student Name Maleeha Muzafar Ali Zulfiqar Mohammad Ismail
Work Placement Batelco
Academic Supervisor Gus Finucane

This project aims to automate all the processes undertaken for the training sessions by Batelco’s Learning and Development department. The solution will enhance the attendance and evaluation processes associated with conducting training sessions, streamlining the current system used to carry out these processes. It also allows the staff at Batelco to register and track their current, or upcoming training programs. The annual Learning and Development department survey is also available for the staff to complete via the app. The system has been developed as a mobile application, both Android and iOS, with a backend-as-a-service (BaaS) use of Google Firebase and Cloud Firestore. The apps were developed using React Native and Kotlin. The testing of the apps was done using Expo and Expo Client. It has features that allow users to stream video training content through the app and remind the users about their upcoming training sessions through reminders and push notifications. Also, Machine Learning features were used for recognising text and scanning barcodes. The uniqueness of this project is due to the presence of Artificial Intelligence that is available for the admin to automate matching of courses with eligible employees based on their competence and preference.

Project Title Ship Registry Portal Mobile Application

Student Name Omar Khaled Salem Abdulla Buhammood
Work Placement Civil Aviation Authority
Academic Supervisor Gus Finucane

This project aims to create a solution that helps the vessels owners with their payment processes. The proposed solution facilitates tracking the requests they receive from the client and make an online payment. Although there is a current web-based application to fulfil this business logic, most clients and workers prefer using their smartphones. Therefore, a mobile app is developed to meet the users’ needs. The solution is developed using XCode and swift for iOS, JavaScript and restful to with the database with a simple JSON string. The App allows the users to pay their bills and track their services and if there are any changes in the status of their services. Moreover, they will get a notification if there are any changes in the request.

Project Title Signature Detection System

Student Name Sayed Alnajjar
Work Placement Arima
Academic Supervisor John Ross

Insurance companies manage a growing number of documents authorised. Such business process entails selling insurance contracts through brokers or banks. However, some policies or contracts are processed and archived without any formal signatures or authorisation. Bookkeepers validate the authorisation by examining the documents manually. The company has an initial system for document management that has QR Code to detect and trace their documents. The proposed aims at increasing the efficiency of contract and policy processing by automating the signature detection. The usual approval process requires printing, signing and then scanning policies and storing them as PDF documents. This will be followed by converting the PDF files into images and scanning them to validate the approvals.

Project Title Dashboard Design & Development

Student Name Aysha Ali Ebrahim Ali Alharmasi Alhajeri
Work Placement Arima
Academic Supervisor John Ross

The purpose of this project is to provide ARIMA’s client with dashboards that summarise and display all the essential data in visual reports. The main benefits of this project are to automate business processes and provide a way to manage tasks for the system’s users to analyse the performance, accountability and

track the progress in a monthly/yearly basis. The dashboards have been developed on an existing web-based solution that is hosted on ARIMA's local servers using C#, JavaScript, AngularJS and HTML coding languages. Also, Oracle 11g database is also used for data querying and retrieval. The most important feature of the dashboards is that they contain different types of visual reports such as bar charts, pie charts, progress charts and tabular charts. Every kind of charts displays a different set of data which makes the information unique and useful. Moreover, since the project is a real industry project, the client will be able to visualise the critical performance indicators and an overview of the system at a glance. This project is beneficial to the client because it will help them to analyse the market trends, improve their products/offers and facilitate their decision making.

Project Title Private cloud

Student Name Banan Khaled Adel Khaled Adwan
Work Placement Bahrain Polytechnic
Academic Supervisor Mahmood Al Hamad

The education sector in Bahrain is suffering from ICT budget cuts that affected most of the industries in Bahrain. This project is about developing a cloud environment which allows the end users to perform various activities based on their role in the course. This project aims to create a platform that supports ICT students and academics. The solution will increase the efficiency of learning the practical parts of ICT courses. Moreover, it allows the end users to perform various activities based on their role in the course. The system has been developed as a web application enabling academics to use the system with their needs. Also, allowing students to work in class doing class activities and assessments. It features high performance including load balancing, fault tolerance, shared storage and automated monitoring.

Project Title Object Storage Cloud

Student Name Husain Abdulghani Yusuf Atiya Ali
Work Placement NGN
Academic Supervisor Shahbaz AliShah

This project aims to provide a solution for storing and managing visuals, multi-graphics, and relatively large files for Awal Gulf Manufacturing. They are in need of consolidating their storage to eliminate inconsistency between different versions of the same drawing, stored in different places. They need a system that abstracts the users away from servers and network shares, providing a user-friendly front-end for saving, accessing and sharing files. This project solves this problem by implementing a cloud-based storage solution that serves as single centralised access and management point for data. It utilises AWS services for storage (AWS S3), compute (EC2), and networking is allowing for flexibility and 'Elasticity' of the supporting infrastructure. It integrates with the client's directory service, which enables centralised management of users' accounts. This solution puts together open-source components like the Linux operating system, and Nextcloud file sharing and communication platform on top of the Amazon cloud, making it elastic in sizing and performance, while also maintaining cost-efficiency. The benefit of using Nextcloud as a frontend is that it can be accessed from a wide range of devices. In addition to web browsers, Nextcloud provides client applications for macOS, Linux, Windows, Android and iPhone. The obvious alternative is to use Dropbox, or a similar service like Google Drive and Microsoft OneDrive, those alternatives however substantially limit control over the underlying infrastructure, which may not be desirable in many cases. Also, the deployment options provided of the solution are flexible, making it easier to exclude components that are not required.

Project Title Client Management System

Student Name Jumana Sayed Jaafar Mohamed Jaafar Darwish
Work Placement MarroonFrog
Academic Supervisor Bassam Bokhowa

Companies, no matter how big or small need to have records for all their clients along

services they offer. MaroonFrog team tracks their clients' details and provides post-sales services. However, their client list is growing and they find it difficult to keep track of their commitment. The clients would have to either call or visit the company to order a service. Performing these tasks using traditional methods would be inefficient and inaccurate which would also cause additional problems. The project is a single Client Management System with a ticketing function which is introduced to eliminate the manual method the company uses to track their clients and support them. The system helps the company view and search for their clients easily and reply to their problems. Also, it helps the clients view and update their details and place their orders or tickets. Furthermore, the management team can make the right decisions when it comes to the future developments via generating reports and viewing clients' ratings. Besides the system functionalities, the system offers a stable, organised, reliable and secure infrastructure.

Project Title VII Tech Website

Student Name Zainab Hussain Ghuloom Abbas Hasan
Work Placement VIITech
Academic Supervisor Gus Finucane

This project aims to help VII Tech solutions to scale and grow further by redesigning their current website and developing a new version that follows the latest web development strategies. Their primary aims at enhancing the users' experience, engaging the design team that has no website maintenance expertise, amending the website design by creating a smooth and dynamic process using CMS. The new website will follow the latest design standards to enhance and improve the users and clients experience. Also, the October CMS integration offers a dynamic website maintenance process which is expected to reduce the required time to update the website in the future by employees. The system is designed using Sass, and developed with HTML, Bootstrap, and October CMS. The Web App utilises Laravel backend customisation and third-party integration. To ensure the security and reliability of the website, it is hosted on AWS, and different service was used to provide that the site is highly efficient.

Project Title Dev Ops Solution

Student Name Mohamed A.Hafeez Hafiz Mohamed Ashraf Raikhy
Work Placement VII Tech
Academic Supervisor Mahmood Al Hamad

The purpose of this project is to create a solution that will aid in multiple phases including developing, testing and deploying a project for VII Tech Solutions. The solution will speed up the testing and deployment phases by automating it so that different tasks can be completed without human intervention. The system will integrate a Continuous Integration a tool called Jenkins, that will run automated testing and once finished it will push the application, a website to go live. The proposed solution will also integrate containerization with the use of Docker, that will create testing environments for different projects that are built in different languages and have different requirements without the use of virtual machines. The system will be integrated with GitLab, since that is where most of the developing files are stored. Once there is an update the system will automatically run the testing and send a notification using Slack to let the user if the build was a success or not. The system will create a script that will run the initialisation command that will create the required files and initiate the DevOps systems without the need of having to manually create everything.

Project Title: Client Management System

Student Name: Roaya Bubshait
Work Placement: MaroonFrog
Academic Supervisor: Gus Finucane

The aim of this project is to overcome Maroonfrog's struggle in tracking their clients' information and services. In addition, the company was loaded with many emails and messages through different social media platform by their clients, requesting them

to solve high and low priority issues. Due to that, they faced delays in solving the clients' requests. Currently, they are using Excel sheets to store their clients' details. Also, they are using email and social media platforms to communicate with their clients. The proposed solution assists the company in managing their information. MF CMS provides a centralized location to store their clients' information. In order to keep track of their clients and the provided services. In addition, it provides a ticketing system that helps them in managing their clients' requests. Moreover, MF CMS controls and manages all authorized users to access the system. The system has been developed as a web-application using PHP programming language and Bootstrap to create the front-end, and MySQL to create the back-end. It provides multiple features to different users. The administrator is able to add the clients' details and create accounts for them. This helps the administrator to track the clients and the company services. In addition, clients are able to issue tickets through the system and the company receives them. It provides the user with notification center and receiving notification by email. It features, analytic report generation, rating the support service and HTML help center.

Project Title: Industry Portal V2

Student Name: Walaa Mohamed Husain Salman Radhi
Work Placement: Bahrain Polytechnic
Academic Supervisor: Philippe Pringuet, PhD

Bahrain Polytechnic (BP) has established enduring relationships with companies to achieve its mission of producing work-ready graduates. To fulfil its role, BP took three approaches: implemented problem-based learning (PBL), included industry work placements as a part of the programmes and provided a career and employment centre (CEC). The three approaches employ manual systems. A prototype of a web-based portal has been developed to overcome the inefficiencies and problems caused by the current system. To move the prototype to the production stage, it has to be robust, extensible and secure. As a result, version 2 of the portal has been developed. The Model-View-Controller (MVC) architecture was used to simplify future maintenance of the website. The front-end of the site has been developed using PHP, and the back-end comprises a centralised MySQL database to ensure data integrity. Also, due to the sensitivity of the system's information, authorisation feature has been employed to ensure data security. Back-up and restore have been applied to ensure data availability in the case of database failure. The website was migrated, and additional features have been added to enhance it. It has been fully tested, and results from evaluating the user experience show that the website is an improvement over the current system.

Project Title: Upgrade of InHouse DB System

Student Name: Lulwa Buali
Work Placement: Bahrain Airport Company
Academic Supervisor: Mohammed Imran

The project management Office (PMO) in Bahrain Airport Company maintains an overview of projects and is responsible for organising and delegating a variety of projects. PMO uses a project portfolio management system (PPMS) to keep track of projects, cost, tendering, planning, and documentation. However, the PPMS does not track the monthly project spending breakdown of each year it is required as it will help the company to keep track of the amount spent on a monthly basis instead of yearly. Moreover, the calculation of the total budget and project expenses is not automated which is creating issues with data integrity and accuracy. Also, some reports are done manually which is required to be automated and extracted from the system by the user. Furthermore, the system has a user access issue that does not allow any new user to log into the system. The updated system will help the company to keep track of financial records based on a monthly basis, the automation of total budget and expenses, generating reports automatically instead of manually. It will also help fix the user management issue to allow and create multiple user accounts. The system will have

an organised, reliable, efficient infrastructure that will help accomplish the company tasks precisely. Finally, by creating a prototype using AWS, it will show how the migration of the current system will benefit the company.

Project Title Service Engineer Project

Student Name Mustafa Marhoon
Work Placement HUAWEI
Academic Supervisor Mohammed Ateeq

Multiprotocol Label Switching (MPLS), is one of the latest types of data-carrying techniques for high-performance telecommunications networks. MPLS has been designed to be used in wide area networks (WAN) which consist of connections to a company's headquarters, branch offices, co-location facilities, cloud services and other facilities. This project aims to implement a full backbone network which runs MPLS technology on its devices. Additionally, it describes the characteristics of this technology. The comparative analysis will find older technologies with the highest possibility of demonstrating the benefit of MPLS. This project entails a simulation testing on the available routing protocols by including packet traffic process. The design of the network ensures an optimized and reliable network topology using Emulated Virtual Environment Next generation (Eve-eg) as an emulation software. Thereby, demonstrating how MPLS technology is the best option to enable service providers to offer their customers a continuous and highly available communication. All the configurations are gathered and documented to demonstrate the advantages of the use and implementation of this technology based on International Telecommunication Union Recommendations (ITU-R), which will be beneficial to the telecommunication companies.

Project Title: Channel Propagation Impact on Network Capacity: A case study of Long-Term Evolution (LTE)

Student Name: Duaa Mahmood Abdali Abdulla Darwish
Work placement: Bahrain Polytechnic Innovation Lab
Academic Supervisor: Mohammed Ateeq

Wireless networks encountered an exponential growth due to the popularity of smartphones and the increasing demand for new multimedia services, video on demand and improved quality of service (QoS). The introduction of services like web-browsing and email among other services alongside regular phone calls, by third-generation networks, in mobile phones factored the growth. Thus, understanding the impact of channel propagation on network capacity became imperative for network dimensioning, which is crucial in mobile network management. This study explores the various parameters and matrices that could affect the network capacity. Hence, it could benefit and assist network operators to properly tune their networks. The capacity of LTE is theoretically investigated using various performance matrices like throughput and packet loss, and input parameters like bandwidth, to calculate overhead such as packet overhead and traffic management overhead, to inform vendors about the maximum users that can be supported through precise results depending on the considered application. Propagation environment for urban, suburban and rural areas are considered for SISO (Single Input Single Output) and MIMO (Multiple Input Multiple Output).Theoretical results are then evaluated through a simulation model. This study provides detailed analysis of general propagation in different environmental areas considering various important parameters and matrices. It collates several examined topics needed to provide precise results and recommendations within a single case study.

Project Title: Smart Mirror v2 - Smart Beauty Station (SBS)

Student Name: Sajah Abdulelah Mohamed Sharif Ali Khonji
Work placement: Bahrain Polytechnic Innovation Lab
Academic Supervisor: Philippe Pringuet, PhD
Mentor: Anthony Friel

Smart Beauty Station (SBS) is a mirror

designed as an innovative way of applying make-up and creating makeup tutorials. The SBS will revolutionize how one applies makeup and creates a makeup Vlog, using simple voice commands and face-identification with the option of receiving the latest updates on their favourite makeup brands.
Our potential customers often use YouTube to watch tutorials and upload video blogs. This can be frustrating since it requires a number of separate devices involving multiple product management. The user is required to operate the camera, find the perfect lighting whilst applying makeup or recreating a makeup tutorial by using a phone that is placed in front of a mirror. This is a cumbersome and difficult process. The SBS allows its users to seamlessly watch, apply and record their sessions with ideal lighting. Additional features include facial recognition and beauty product recommendations.

The project was developed using a Raspberry Pi 3 coupled with its official hardware PiCamera. This gives the advantage of a small and lightweight product perfectly complementing the SBS's simple design. The product is integrated with Amazon's Alexa cloud-based voice interaction model. Activation with a wake word provides users with an intuitive way to control lights, volume and video recording as well as retrieve information. The product features a facial recognition tool designed to display content based on its user's preferences, as well as a guest interface with minimal content for its unregistered users. Registration on the Microsoft Azure web-based application allows the user to customize the content displayed on the SBS. A machine-learning model gives personalized suggestions for makeup products based on age and gender. The advantage of using a machine-learning algorithm is to produce information directly based on a user's data, without relying on predetermined equations. As the number of users increases, the algorithm adaptively improves its performance. This is beneficial for targeted marketing by makeup industries for product creation, customization and personal promotion.

Mechanical Engineering

Project title: Reliability Analysis and Oprimiztion in Multi Stage Flash (MSF) Desalination Systems

Student name Faten Ebrahim
Supervisor: Adel Aawan

With the high demand of water production due to the population increase in the Gulf Region, countries turned to alternative water supply technologies especially desalination of sea water which is considered the strongest among different techniques. The Multi Stage Flash (MSF) Desalination System is frequently used due to its major development over the previous decades which led to costs reduction and increase overall unit capacity in the Middle East. However, MSF systems in the Kingdom of Bahrain targeted in this project have the ability to be optimized by applying the latest maintenance techniques, performance improvement and reliability analysis to provide a consistent supply of water for sustainable development of the Kingdom of Bahrain and ensure cost reduction and production enhancement to make the Kingdom one of the 20 best countries in the world by 2022. Several obstacles of the system will be discussed and solutions suggested to easily apply Reliability-Centered Maintenance (RCM) analysis to reach the highest system quality and achieve the overall vision of the Kingdom of Bahrain

Project title: Ram Analysis for Pumping System

Student name Husain Abdulrasool
Supervisor: Gollapudi Narayana

The Reliability, Availability, and Maintainability (RAM) study is to be performed on a system in the upstream oil and gas industry with the rotating equipment (pumps) in focus due to their higher failure susceptibility and their criticality for maintaining production.

The study will go in depth about studying the components of the system to identify the weak points objectively and to provide a basis for making improvement suggestions to increase the availability of the system. The study will compare the manufacturers' data with the actual data gathered from the field. Reliability Blocks, Fault Trees, and other methods will be used in modeling the system where each component will be allocated with the different parameter required for the modeling.

The final model will be analyzed to make the suggestions such as initiating an RCM (Reliability Centered Maintenance) study on a weak point that is under-performing.

Project title: Unmanned aerial vehicle design, building and testing

Student name Zuhair M. Alasfoor
Research project at Bahrain Polytechnic
Academic Supervisor Dr Christina Georgantopoulou

The aim of this project is to design and analyse a sub-5Kg Unmanned Aerial Vehicle (i.e. UAV) for thermal imaging of plants in small gardens and research purposes in Kingdom of Bahrain. The UAV would be designed to withstand Bahrain's weather conditions and the stresses applied to it by using fibre-reinforced composite materials for both structural and aerodynamics purposes. As the aim of the project is to design a sub-5Kg drone to be used in gardens, the quad-copter model was selected due to motion and size constrains. The quad-copter UAV consists of a Power Distribution Board (i.e. PDB), flight controller,

Electronic Speed Controllers (i.e. ESC), satellite receiver and four magnetic motors, which are powered by a Lithium Polymer (i.e. LiPo) battery. These components are connected with each other via soldering. The frame of the UAV quad-copter has been designed using CAD software SolidWorks. In addition, the frame is subjected to stress related analysis and simulations in order to insure the structure of the UAV will hold. In the aerodynamic side of the project, a suitable aerofoil design has been chosen in order to generate the required lift force to make the aircraft fly with the payload. Moreover, a damping unit has also been designed to insure the safety of the components when the UAV lands on soil.

Project title: Solar Desiccant Water Recovery System from Atmospheric Air

Student name Ahmed S. Mohamed
Research project at Bahrain Polytechnic
Academic Supervisor Payal Modi

The aim of this project is to build a device which produces drinking water by using sand, salt and water. The project was given by Bahrain Trust foundation and it revolves around understanding psychometry and mass transfer. These two main topics will help to understand how the device works and ways to improve the device. The project has two parts; experimental and theoretical. The theoretical is understanding mass transfer to find the amount of water the device will give us. The experimental is conducting experiments on the device to know which idea will give us the most amount of water

Project title: Design and Development of Scissor Mechanism for Lifting Asymmetric Sheets

Student name Yusuf A. Abdulla
Ramsis
Academic Supervisor Dr Subramanian

The project work focus on designing and developing a scissor lifting mechanism for handling asymmetrically massive shaped metal plates. The metal plates are around 8 tonnes and the existing methods for handling the plates are extremely difficult. In this work appropriate thickness of beam is selected for the beam structure and as well as scissor plates .The diameter of the bolts were calculated and used for the design .The entire design is analyzed and optimized using Finite Element Analysis using solid works for obtaining the required factor of safety .The current design is made for handling variety of sizes of asymmetric L shaped sheets .Rack and pinion mechanism is used for adapting the hook to the center of gravity of the sheet. Analytical calculations for beam structure and scissor mechanism were carried out. Finally, the manufacturing steps along with drawings are prepared for this product

Project title: Design of a HVAC system for Engineering Workshop

Student name Maryam M. Alhamar
Ramsis
Academic Supervisor Gollapudi Narayana

RAMSIS Engineering has manufacturing workshops were their projects are being made there, however those workshops are open and exposed to hot air, while in the summer it can be very tiring. Therefore, designing an HVAC system suitable for the workshop would be beneficial for the workers, also insulating all openings to ensure the right conditions to cool the area.

Project title: Solar tracking system

Student name Mohamed N. Alkhuzai
Bahrain Polytechnic
Academic Supervisor Nikolaos Vasilikos

The aim of this project is to develop a solar tracking system prototype to be used along with a Photovoltaic panel, where the system continuously positions the PV panel in order for it to be perfectly perpendicular to the sun, which in return would give the highest electricity output throughout the day and year. Furthermore, the solar tracking system is specifically designed in order to withstand the middle east weather, where the system is required to be dust and humidity resistant. The solar tracking system operates on 2-axis, which in return would adjust the panel based on the position of the sun during the day, and the latitude during the season changes. The solar tracking system also requires some electronics components in order to achieve the required outcome, where the components are an Arduino microcontroller, LDRs (Light-Dependent-Resistors) in order to detect the location of the sun, and servo motors in order to rotate the apparatus.

For the mechanical side of the project, the system is manufacturing using Aluminum, which has superior corrosion resistance in comparison to Mild Steel. Further precautions will be taken to insure that the system is dust and humidity resistant, where the system will be coated with a rust inhibitor primer along with a colored paint for aesthetics. Additionally, the components of the system will be sealed with the help of silicone in order to protect the electronics components from humidity.

Project title: Design for Carbon Dust Recovery System

Student name Naser A. Alsaegh
ALBA
Academic Supervisor Adel Aawan

This project looks at the potential of saving ALBA over BD65,000 annually by recovering and recycling 90% of carbon dust. The carbon dust is a product of cutting slots into the carbon anodes used in the electrolysis process for aluminum production

Project title: Prosthetic arm design building and testing

Student name Ahmed F. Alshowaikh
GARMCO
Academic Supervisor Dr Christina Georgantopoulou

The aim of this project is to create a new type of a prosthetic hand for amputees that is more easily accessible than the conventional types via methods of 3d printing in combination with cheap sensors and servos that can work independently from the operator where the amputee concentrates on simply placing the hand in the required position while the hand performs the rest of the tasks for them. This makes the hand both cheaper and easier to repair and maintain since it will be using inexpensive materials with the potential of upgradability and customizability through using open source software such as Arduino, raspberry pi and many more boards along with the combination of 3d printed parts that can be customized through other people's needs and minor adjustments that can be done without having a lot of knowledge on electronics. The primary issue with the current high end prosthetics is that they are very expensive as they use carbon fiber which is expensive to manufacture, along with the custom sizing work which makes it very expensive since the measuring, sizing and then final production is a lot of man hours for a single person to receive their new prosthesis which then is not upgradable or repairable meaning that if something breaks it has to be again custom made by the company to fit that exact prosthetic making it again more expensive. This can be countered by using a 3d printer that can perform rapid prototypes and prints allowing for inexpensive prototypes, upgrades and repairs within the persons home or local services. The electronics systems are cost efficient as well, since they are open source and can easily be replaced or repaired. This variation of a printed arm will also give a customizability where it can fit more than one person without the heavy need for a custom design.

Project title: Design and fabrication of Valve Testing Equipment

Student name Alzayani, Hamad R
ASRY
Academic Supervisor Gollapudi Narayana

The objective of this project is to modify the current valve testing equipment in ASRY or to come up with a new design that serves the purpose of valve testing with the least amount of time and material consumption. The objective of this project includes finding a solution that will be both time and material efficient, proposing a new design that will be suitable to the limitation and desires of the industry. The tested valves will be gate and

butterfly valves, of sizes ranged from 250mm to 500mm diameter hole. The new design should be adjustable to be used for the given sizes, therefore I am designing a screw jack that is expected to lift the valves (560 kg) and a rack and pinion mechanism to move the valves horizontally in the device, in order to make the device adjustable and useful for the different sizes of vaalves. Finally, structure of the design analysis will be made.

Project title: Corrosion in Sub terrain firefighting water piping.

Student name Adnan N. Husain
ALBA
Academic Supervisor Adel Aawan

The project is about a problem that is being faced in the industrial company ALBA. The problem is corrosion that occurs to the firefighting underground water pipes. The sizes of the underground pipes are 4, 6 and 8 inches and the material is carbon steel. This corrosion leads to major leaks of water from the pipes, causing a lot of maintenance. The frequency of the leaks is about 12 leaks each year.

Project title: Controlling Heat Transfer Effects in Water Pipelines

Student name Fatema S Jahromi
EWA
Academic Supervisor Gollapudi Narayana

Controlling the temperature of water that flows into the pipes. This could be done be changing the material of the pipe and selecting a material that is heat resistant in order to decrease the heat transfer effects. The material should have good chemical and physical properties to prevent corrosion or mixture of any chemicals with the water that may be released by the pipe. In addition, the pipe material should be strong enough to withstand any pressure and forces that will occur and not deform in shape. Thermal analysis will also be done using ANSYS to check the heat transfer effects. Calculations of heat transfer and friction loss will be calculated as well for the existing and the modified pipe to compare on how the heat transfer bas been reduced. Furthermore, cost analysis will be done on the existing and the new pipe material by taking a specific length of the pipe and comparing its weight and cost.

Project title: Laundry waste water recycling system

Student name Razan Younis
Intercontinental
Academic Supervisor Dr Christina Georgantopoulou

The aim of this project is to recycle the waste water that comes out of a washing machine after a wash has been complete. As per the industrial requirement, their aim is to recycle the drain water for one washing machine which releases around 800 liters of water per day. As every day the washing machine operates 10 times a day with an average of 80 liters per wash. The waste water will initially be filtered by using a sand filter to make sure that dust and dirt had been removed from the water. then the water would be moved with a pump towards cartilage filters that would purify the water enough to be transferred to an R.O plant that is aimed to removed dissolved organic solutions from the water. The overall aim of this project is to reduce the cost of water usage, in addition to maintaining Water Conservation and Sustainability.

Project title: Increasing the efficiency of Riffa power plant

Student name Hussain Ahmed and Loay Salman
EWA
Academic Supervisor Adel Awan

Tri-generation is an effective methodology to maximize the available energy's utilization. In this project, the utilization of the waste heat (flue gases) liberated by Riffa power plant would be analyzed for simultaneous production of: (a) potable water using air gap membrane distillation plant; (b) electric power through combining steam Rankine cycle with heat recovery steam generator (HRSG); and (c) cooling using absorption chillers of single stage. The primary source of the Tri-generation system is the exhaust gases liberated from the gas turbine power cycle. Efficiency of 75% is achieved by implementing the Tri-generation system in comparison to 30% for gas power cycle. The amount of carbon dioxide emission per MW.h would be minimized by around 51.5% by implementing the system. The payback period of implementing the system is around 1.38 years while the cumulative net present value is $66 million over the lifetime of the project.

Project title: Increasing water efficiency in the new building

Student name Ebtehal Almutawa
Ministry of Works
Academic Supervisor Adel Awan

Water status in Bahrain is very critical, as the fresh water resources are becoming salinity, and the dependency on desalination is increasing. In addition, the irrigation water is used recklessly which adds pressure on the water sources, therefore, an alternative to the municipal water is found, and it is a condensate water that's being harvested from compound AC unit (HVAC). The aim of this project is to increase the water efficiency in the ministry of works new building (headquarters), by creating a design for the irrigation system which will use the condensate water to minimize the pressure on the water sources and reduce bills cost.

Project title: RCM analysis

Student name Yousif Alsalman Tatweer
Academic Supervisor Dr Christina Georgantopoulou

I've been tasked with conducting an RAM analysis on the CGDF (Central gas dehydration unit) present within Tatweer petroleum. In more technical terms, An analysis would be conducted on the reliability, availability and maintainability of the unit by gathering data relating to mean time to failure, average down time, active repair time, etc. Accumulating that data onto a software that displays the reliability and availability of the system in an easily understood format. The reason behind conducting this analysis is to observe whether or not the results meets the standards set by the company and to observe whether any improvements can be made to enhance the overall quality of the system.

Project title: Sociable Humanoid Robot

Student name Zainab Ali, Khaled Mayoof and Hasan Shukri
Research at Bahrain Polytechnic
Academic Supervisor Dr Christina Georgantopoulou

This project describes an interactive human mobile robot that has 4 degrees of freedom. The physical dimension of the robot is 1.1 meters height and 0.661 meters width. The appearance concept of the design was derived from three main features that were considered: humanoid, animalistic and system like. The robot is fabricated by fiberglass for the chassis cover as it was created by an MDF mold through CNC Machining. For the structural chassis aluminum sheets and tubes were used. The robot's control system consists of an arduino which is a micro controller and a jetson nano computer.
Both the computer and microcontroller interact together to enable the robot to move in both autonomous and manual modes. Moreover, the robot will be able to interact with humans through voice and face modules
The robot has mobile application which can provide useful information about Engineering at Bahrain Polytechnic. Furthermore, it is also capable of representing himself, move around, greet and shake hands, listen, interact and, responds to people

Project title: Automatic WC Flushing System in Ministry of Works Headquarters Old Building Manama

Student name Entisar Ahmed
Ministry of Works
Academic Supervisor Dr Christina Georgantopouloufate

As part of the energy saving strategy at

ministry of works, municipalities affairs and urban planning, it is now compulsory that all plumbing equipment and installations eliminated water wastages and saves water consumption. manufacturers have developed automatic wc flushing systems with low water consumption which are readily available in the local market in bahrain, but not a lot of people or government entities use them smartly. the performance of the low consumption flushing system fixtures have become important matter in water efficiency in public buildings in reducing monthly ewa energy bills. This study was conducted with the view to compare existing manual flush system with automatic system, and determine any significant water savings. thereby, replacing the existing manual flush system with automatic type at ministry of works in which they aimed to save significant amount of water in the restrooms with additional emphasis on promoting personal hygiene among staffs and maintaining clean environment.

Project title: Enhance Water Consumption Efficiency of Ministry's of Work Headquarter New Building

Student name Mustafa Isa
Ministry of Works
Academic Supervisor Nickolas Vasilikos

It was found according to water consumption bills and data issued by EWA that gardens irrigation was the most consuming source of water as also stated by the Ministry of Works supervisor, hence the topic ''automatic irrigation system" was proposed and accepted by both supervisors from the university and the ministry. The automatic irrigation system will provide a useful solution to reduce water consumption significantly by irrigating the right amount of water needed by plants to live and grow without wasting any water, affecting environment where less water is required, therefore less bill amount and also less water production leading to less environmental impact. The system will divide the gardens into multiple smaller zones and each zone will have a dedicated automatic irrigation system cell that will provide water according to the need of the plants located in that specific area

Project title Remote Air Quality Monitoring System

Student name: Maryam Ali
GPIC
Academic Supervisor: Ramani Panda

It is proposed to design and build a remote air quality monitoring system through wireless for Gulf Petrochemical Industries Company in Bahrain (GPIC). The system should efficiently measure a range of important parameters for the company including atmospheric pressure, temperature, oxygen level and CO2 level. These measured parameters will be sent through the Wi-Fi network to a remote platform to be displayed and analyzed for the operator in order to ensure an optimal air quality.

Project title Sand Filtration for Grey Water

Student name: Mohamed Alhooti
Academic Supervisor: Adel Awan

It is a co-operative learning project that has been introduced by ministry of works (MOW) to Bahrain Polytechnic mechanical engineering student as optimizing water usages' efficiency of their headquarter old building. This project aims to solve a real time problem of MOW by applying whatever obtained from mechanical engineering major of Bahrain polytechnic.

Analysis has been done in systems that need water to operate, systems provide water and connections of water supply. It has been noticed that large rates of water are going for irrigation because traditional way (hosing) is being used. The outcome was suggesting and designing a system that can use grey water of the building in order to irrigate plants. Research has been done to prove the ability of using grey water for treatment and systems for treatment.

Sand filtration system was chosen and designed because it is costless, simplest and requires lowest maintenance. A prototype was developed in order to prove the working principle of the design.

Project title Design of Carbamate Condenser for Urea Plant

Student name Abdullah Bahadur and Sadeq Naema
GPIC
Academic Supervisor Dr Subramanian Chithambaram

Carbamate condenser is an important component of urea plant. GPIC wants to replace its old carbamate condenser with a new and improved one. The purpose of this project is to design a new carbamate condenser for urea plant that can condense more volume of ammonium carbamate in order to increase the efficiency of the process. The design of carbamate condenser is a problem that is being considered unsolvable by the employees of the company because of the unavailability of ammonium carbamate properties. The parameters such as inlet and outlet temperature and pressure of hot and cold fluid and the desired (increased) mass flowrate were provided by the company to design the condenser.
The new carbamate condenser designed by me would be able to condense more volume of ammonium carbamate and would produce more volume of steam thereby increase the efficiency of the plant and it will save a lot of money for the company that they pay to the vendor to do the study for them every time they change the condenser

Project title Building Management System

Student name Mohamed Alsan
Supervisor: Dr Mohamed Aljerjawi

A building management system, otherwise known as a building automation system, is a computerbased control system installed in buildings that controls and monitors the building's mechanical and electrical equipment such as ventilation, lighting, power systems, fire systems, security systems and other such utilities/essentials. A BMS consists of software and hardware; the micro-controller and the code it runs. In this case, an Arduino (controller) is to be utilized to control a security, fire alarm, air conditioning and lighting. The security system will use an RFID card reader which will authorize access to the building/room and unlock the door.The lighting/air conditioning will turn on and be adjusted depending on number of persons in said room/building.The fire alarm will trigger to lock other systems and unlock doors, sounding a siren until system reset.A model is to be built simulating listed aspects.

Project title AUV (Autonomous Underwater Vehicle) for Underwater Pipeline Inspection

Student name Mustafa Almadhoob
Academic Supervisor: Dr Christina Georgantopoulou

An AUV (Autonomous Underwater Vehicle) is a vehicle that can maneuver underwater with little to no human input. The objective of this research project is to design an AUV capable of undergoing accurate underwater pipelines leaking inspection. The vehicle's aim is to hover above the pipeline while recording a video and monitoring the thermal levels of the pipeline surface, before ascending to the water surface to retrieve and analyse the recorded data. To achieve this objective, the AUV will be equipped with various gadgets including; autonomous control system, optical camera, thermal and infrared sensors, and a navigation system. This project may include a constructed prototype model to showcase the operation and application of the AUV.

Project title Aluminum Alloy Mixing Program

Student name Tareq Jawad
GARMCO
Academic Supervisor Gollapudi Narayana

Resources Management is a crucial factor to the welfare of the industrial firm and environmental conditions. The purpose of creating the 'Aluminum Alloy Mixing Program' is to reduce the pure aluminum ingot consumption in The Gulf Aluminum Rolling Mill Company (GARMCO). Various benefits can be obtained by implementing the programmed calculator in the Remelt process in the company, as it will improve the secondary aluminum production by managing the

aluminum scrap and waste. This is achieved by providing the ability to mix different types of aluminum alloys using the program and finding out the percentage of each element of the composition within the mix and the required weight for each mixed alloy in order to achieve a certain aluminum alloy series

Project title Design and Development of Portable Scrubber Unit for Hot Rolling Mill

Student name Abdulla Alshaala and Hussain Derbas
GARMCO
Academic Supervisor Gollapudi Narayana

The project aims at designing and developing a Portable and Handy Roller Scrubber unit to clean the hot mill table rollers at GARMCO. The unit should be controlled by the operator from a distance away from the danger zone through a pendent cable and have the capability to move forward and backward. The portable device will be installed above the roller, and consists of the cleaning handle that contains emery paper to scrub the accumulation layer from the rollers. The unit will be mounted to a dovetail linear guide, with a rack and pinion drive for auto reversing linear motion operated using a single micro motor that can be controlled remotely from a safe distance.
The design of this portable scrubber unit is to reduce the high risks of the roller cleaning operation, as currently, the workers in the factory have to get down on the hot mill table and clean it manually.

Project title Smart Road Calming System

Student name Sawsan Hasan
Ministry of Works
Academic Supervisor Dr Ahmed Abdulrahman

Project title Alternative Energy source (Solar Energy) use for Zain Data Center

Student name Mohamed Janahi and Khalid Saffy
Zain
Academic Supervisor Nikolas Vasilikos

This project assesses the feasibility of implementing solar energy in Zain's data center. The development of this project includes calculating the electrical consumption and determining the amount of electricity generation required. Furthermore, selecting a solar panel type and system is also part of the process, as well as designing the layout of the panels in the given area. This project discusses the different parameters, limitations, and constrains that go into installing and utilizing photovoltaic panels to generate electricity. The successful execution of this project will help Zain promote sustainability and renewable energy, decrease the cost of electricity consumption in their buildings, and help Bahrain reach its national renewable energy targets.

Project title Sustainable Power Generation and Project Management for Learning Alley

Student name Isa Mohamed and Isa Bumataia
Bahrain Trust Foundation
Academic Supervisor Syed Imam

This project compares different sustainable power generation sources and chooses the best-fit electricity generation system, which is solar, with keeping into considerations different important factors. Consumption of the electricity of the learning alley is found, with the full design and implementation process of the system done. Moreover, Bicycle electricity generation will be used as a game to clarify the working principle of mechanical energy conversion, to help in the outcome of the learning alley. Design and implementation of the bicycle have also been done.

Project title: Digital Incentive Spirometer

Student name Zahra Almukhariq
Archetype Foundry
Supervisor: John Leek

Spirometer is a medical device that is used to measure how well the human lungs are. This project is a small battery operated / portable spirometer that measures the lung capacity and flow. Data obtained from the device will help in diagnosis some lung diseases (such as COPD and Asthma) by comparing the lung functions to the expected levels of functions.To enable lung performance to be quickly measured and recorded, thus enabling a trend/ target/goal to be set for people with breathing issues. The target goal would be plot the results using a mobile phone application showing the progress (improvement) over time.The target audience would principally be younger age group with this goal in mind a blowing game could be developed with reward(s) to keep the participant engaged

Electronical Engineering

Project title Water Tank Level Control

Student name Mohamed Alrayes
Intercontinental Regency
Academic Supervisor: Dr. Christakis Papageorgiou

The aim of the project is to design an automatic system for controlling and monitoring the level of water in an industrial tank by implementing a PID (Proportional-Integral-Derivative) controller to control the water tank system by using myRIO. ultrasonic and loadcell sensors are used to measure the water height in the main tank, and two pumps used to transfer water from one tank to another. A prototype was designed and fabricated, followed by the design and testing of several electronic circuits to produce a PCB. A LabVIEW program was then written which includes a PID controller that uses different Kp and Ki values to produce an analog output signal which was inputted into a microcontroller that produces PWM signals that drive two pumps based on the output of LabVIEW code in myRIO PID controller according to the setpoint the user selected. The main objective is controlling the water tank's water level by implementing a PID controller. In addition, using a tablet and Wi-Fi connection to connect to myRIO to be able to display the main parameter to monitor and control the system.

Project title Automatic Cable winding machine

Student name Mohamed Ahmed
Midal Cables
Academic Supervisor: John Leek

It is suggested to redesign one of the lines that Midal Cables has to role the cables on to the spool. The problem that Midal Cable facing is that they have an old technique to roll cables on to spool, they spread the cable around the spool manually and then they carry the spool by using a forklift for weighing. That type of technique can waste a lot of money, it can waste a lot of time and it can be less efficient. The problems can be solved by letting the cable to be wound on to the spool automatically by using a control system where the direction of the cable going on to the spool can be controlled automatically. Also, to reduce the cost and to reduce the time it is possible to weigh the spool without removing it from the winding equipment.

Project title Automated louvers system using solar power

Student name Sara Hussain
BAPCO
Academic Supervisor: Ramani Panda

It is proposed to design, build, test and analyze an automated system that will control the rotation of the louvers placed outside the Engineering building at Bahrain Petroleum Company (BAPCO). The suggested method is by replacing the existing iron louvers with aluminum and adding a control system that controls the rotation angle of the louvers in accordance with the amount of sunlight during the day. The system is powered by solar energy using solar panels. Due to the fact that the current louvers reduce the amount of sunlight entering the building, the workers depend on LED lighting. This type of lighting has been associated with some health issues such as: toxic emissions that might affect the respiratory, kidney and toxic stress to the retina. As a result, these issues could potentially have negative impact on their productivity. The proposed shading system can be used for training purposes to demonstrate

how environmentally friendly projects can be implemented within the company. It may play an important role in encouraging trainees and employees to develop other possible projects to support the company's green initiatives.

Project title: Smart Irrigation and Plants Monitoring System

Student name: Tuqa Alhalwachi
Company: EWA
Academic Supervisor: Dr. Saam Najat

It is proposed to design, build and test an automated system that can be used in the agriculture sector by addressing several issues that the sector faces in Bahrain. The proposed system will be implemented on a small scale issuing all the required steps for further large landscape implementation in Kingdom of Bahrain. The prototype will consist of a Miniature Planting Field that is formed of two containers, where one will be used to keep the soil and plants and the other will collect the excess water draining from the planting container. Moreover, a shading system will be added to protect the plants from the sun during a specified timing of the day. In addition, an irrigation system which consists of a water tank, a pump, soil moisture sensors and sprinkles will be integrated with the final prototype.

The system will be programmed using a PLC along with a SCADA interface where from the whole system can be monitored and controlled. This can assist and guide the operator on the indications of water levels, soil moisture, temperature, humidity and other information. The idea can be applied on the community garden placed at the Polytechnic. The prototype itself can be used as a learning tool for the PLC course in Bahrain Polytechnic. It can also be used for demonstration purposes in exhibitions or other courses related to the economic growth of Bahrain.

School of Business

Project title : Variance analysis for cost reports

Students name: Dalya Baqi and Hawra Husain
Batelco

Variance analysis for cost reports at the Costing Department and Controls Assessment for processes at the Business and Planning Department
Identifying and highlighting major cost variances that are inconsistent with previous year values.
Carrying out budget transfers between GLs and Cost Centres after obtaining the required approvals.

Assessing internal controls and recommending appropriate improvements to processes.
Recommending innovative solutions to identified problems

Project title Accounting System sustainability in MOFA

Students name: Hiba Almeer and Narmeen Almaarafi
Ministry of Foreign Affairs

Identifying areas for automation of manual routing of the financial and accounting processes specifically between embassies and MOFA including money transfers.

Recommending robust workflow accounting system focusing on the expenditure cycle.

Assessing internal controls and recommending appropriate improvements.

Project title Inventory management and optimization for Charcoal Trading Company

Students name: Husam Yusuf and Fatema Zainal
Kookito

Employment of Inventory Management Techniques (inventory valuation, EOQ, JIT)
Recommendation of Inventory Management System.
Analysing the financial effects of inventory management.

Project title Fixed Assets Verification and Updating the Fixed Asset Register

Students name: Husain Fardan , Abdulrahim Mohamed and Batool Ahmed
Ministry of Youth and Sport (MYS) Bahrain

Revision of the existing fixed asset register processes, if any, and recommend amendments
Updating the register by carrying out the following activities:

Revision of the fixed asset note for the financial statements and ensure that it is in compliance with Bahrain's financial reporting framework for government entities(IFRS)

Project title Fixed Assets Verification and Updating the Fixed Asset Register

Students name: Husain Shabib, Maryam Almannaei and Haroon Khan
Ministry of Youth and Sport (MYS) Bahrain

Revision of the existing fixed asset register processes, if any, and recommend amendments

Updating the register by carrying out the required activities.

Revision of the fixed asset note for the financial statements and ensure that it is in compliance with Bahrain's financial reporting framework for government entities(IFRS)

Project title Bahrain Bourse marketing project

Student name: Douaa Mohamed and Elyas Baqer
Bahrain Bourse
Academic Supervisor : Tijjay Mitchell

Bahrain Bourse is searching for effective internal marketing activities that will spark and foster an organizational culture change towards one that promotes the values its new management wishes to instil in its employees. Through thorough understanding of the current state of affairs, the management of Bahrain Bourse wishes to engage in an internal marketing campaign that lays the foundation for a positive and desirable employer brand for its current and prospective employees.

Project title GetBaqala Marketing Project

Students name: Mariam Abdulla and Mariam Seyadi
GETBAQALA
Academic Supervisor: Tijjay Mitchell

In alignment with its goal to expand the app, GetBaqala requires market research in Bahrain that centres around the needs of the average Arab /Arabic-speaking resident in Bahrain. By analysing and understanding Arab consumer behaviour, GetBaqala can build a suitable Arabic version of the application.

Khatwa & BBUS Marketing project

Eman Alhadi
Academic Supervisor: Tijjay Mitchell

Khatwa is seeking effective marketing activities that will attract unemployed women and home bound housewives or widows to explore opportunities to develop and run their own businesses therefore affording them some sort of financial/income independence. Khatwa wishes to engage in rolling out a marketing campaign which directly appeals to its target audience.

AvantGrade Marketing project

Students names: Fatema Al-Bastaki and Marwa Saleh
AVANTGRADE
Academic Supervisor: Tijjay Mitchell

AvantGarde would like to develop effective B2B marketing strategy and tactical activities that will enhance the company's brand within its chosen target market in the country thus generates more traffic to its service and constantly increase their credibility within the market.
Propose strategic direction and ideas that will bridge the agency with its potential prospects and the public hence, broaden its marketing schemes increasing its potential prospects reach and credibility within the market.

Bahrain Express marketing project

Students names: Alaa Ahmadi and Salman Haider
BAHRAIN EXPRESS
Academic Supervisor: Tijjay Mitchell

Bahrain Express is seeking to the develop and execute a complete marketing campaign that covers the Bahraini market (including events on a corporate level) for the official launch of the website and mobile application. The aim of the campaign is to raise awareness about the mobile application and to get people to download and purchase items through the app. The campaign sall include digital marketing, offline and direct marketing.

Activating and engaging the public through the social media accounts to onboard new clients and increase application downloads.

Creation of the client's database of the application's potential clients in Bahrain
Creating awareness about and enhancing the company's brand. Growing the number of clients and the sales via certain promotions. (Certain discounts may be offered by clients when approached for specific marketing events).

Internal Marketing Strategy

Students names: Ali Saleh and Dalal Alderazi
NADER TRADING
Academic Supervisor: Tijjay Mitchell

Nader Trading is searching for effective marketing methods and activities that will enhance the company's brand and franchise portfolio as well as establishing platforms for direct communication to consumers.

Development of tactical marketing initiatives focused on the Business to Business Segment in the country to enhance reputation, sales and principal requirements.

Develop a strategic marketing plan in line with principal expectations that explores a number of growth initiatives and offers opportunities to expand Nader Trading's reach in the markets. Explore the possibility of introducing new products to the market, broaden its integrated marketing communication to the digital platform to support brand/product activations in target market.

Market Growth Strategy

Students names: Dana Al-Thawadi and Amin Hasan
CITY GLASS
Academic Supervisor: Tijjay Mitchell

City Glass has a very reputed name in Glass Processing Market! However, the company wants to utilize the Modern Marketing Strategies for growth opportunities by understanding the customers' need. This is:

To increase awareness of City Glass production and commercial capabilities
To increase amount of regular daily sales and customer services activities.
To gain and maintain growing customer base.
To provide best customer services for current and potential customers.
To introduce new related services and products based on identification of customer needs.

Events Marketing

Students names: Dunya Ali and Fatema Mahroos
EVENT's A'LA CARTE
Academic Supervisor: Tijjay Mitchell

A research driven marketing plan to the benefit of the company moving forward and establish a clear brand position in the market.

A particular focus on an Integrated Marketing Communication plan that clearly appraises and prioritizes online and offline marketing tools towards generating brand awareness, covering a period of 6 months and is ready for implementation.

Integrated Marketing Communication

Students names: Fareeda Alkoohaji and Fatema Al-Haiki
POPILICIOUS
Academic Supervisor: Tijjay Mitchell

The Popilicious BBUS Marketing Industry project sought to develop a fully integrated marketing plan that outlines the advertising and marketing efforts for the coming year detailing the activities involved in accomplishing the set objectives within a set time frame. The fully integrated marketing plan included a branding plan, a comprehensive media plan, a market analysis report, a social media marketing strategy and the development of content for the identified communication channels.

Services Marketing Strategy

Students names: Salem Mulla and Amin Mohammed
STEAM MY RIDE
Academic Supervisor: Philippe Vande Wiele

Searching for effective marketing methods and activities that will enhance the company's brand and services diversification. Development of tactical marketing initiatives focused on the Business to Consumer Segment. Develop a strategic marketing plan that explores a number of growth initiatives and offers opportunities to expand Steam-my-ride's reach in the market. Explore the possibility of introducing new services into the market, broaden its integrated marketing communication to the digital platform to support brand/product activations in target market. Explore the possibility of introducing exclusive product car care brands into the market, whereby we can sell to other similar business in the community • Expanding our branch to similar customer segments within Bahrain (eg. Juffair) • Enhancing Mobile Detailing services awareness within a certain area, which won't increase logistic cost and retail pricing • Cashflow challenges due to drop of footfall

Services Marketing Strategy

Students names: Ayman Algallaf and Abdulla Al-Balooshi
A.J. M Kooheji
Academic Supervisor Tijjay Mitchell

To increase awareness of 3K and the Services that the centre provides, which is mainly Oil – Tyres and Battery.

Drive awareness through social media and target the age group of 26-35
A fully aligned and integrated marketing campaign plan that supports the above objective
The plan will incorporate an IMC led marketing campaign plan utilising traditional, digital and social mediums to be implemented over the specified marketing campaign plan period.

The production of a variety of creative marketing concept materials, including creative briefs, a professional video storyboard, concept social media posts, concept advertisements boards and other promotional resources.

The integrated marketing campaign plan will be informed by localised market research including competitor analysis, STP, target market profiling and benchmarking analysis The IMC plans may also include creative marketing briefs for web media and visual design production

Services Marketing Strategy

Students names: Omar Abdulrahim and Ahmed Sassi
BOX-IT
Academic Supervisor Tijjay Mitchell

Understand the current brand perception of Box It and identify the main drivers of the brand's success.

Critical evaluation of the brand positioning and value proposition based on credible market data of consumers in Bahrain and KSA.

Fresh insight into brand positioning opportunities, business process improvements or new areas for business development for Bahrain and KSA.

Generate Dine In traffic for selected physical outlets.

Marketing intelligence report that provides credible insight into the brand perception of Box It and wider consumer behavior market intelligence in their industry segment .

Recommendations around brand positioning in line with brand perception, market trends, consumer behavior and the Box It brand for Bahrain and KSA.

Campaign development and pilot testing of integrated marketing efforts to drive traffic to selected physical outlets.

Future Marketing Strategy

Students names: Zahra Mohamed and Layla Toublani
E.K. KANOO
Academic Supervisor Tijjay Mitchell

To understand and enhance the customer journey and increase customer retention utilizing a variety of marketing strategies that leverage current technologies in order to deliver data driven marketing solutions.

A clear understanding of current and future customer profile and buyer's journey with respect to effective marketing activities for EK Kanoo's automotive business segment.

A suite of research informed recommendations towards enhanced retention of the current customer base and engage future customers using data driven and technology supported Marketing and CRM activities aligned with the EK Kanoo brand ethos.

IMC Marketing Strategy

Students names: Fareeda Mutaywea and Noor Aseeri
Women's Crisis Care International
Academic Supervisor Tijjay Mitchell

The development of a ready-to-implement strategic marketing plan that covers short, medium and long term marketing activities towards positioning the WCCI brand in a B2B and B2C context. The plan must address promotion of both pro-bono and paid services nested in a growth strategy towards solidifying its legitimacy, improving the commercial bottom line and securing additional funding.

A fully aligned and integrated media and marketing plan that kickstarts a sustainable strategic marketing direction for WCCI is based on an organizational marketing audit, market research, tested promotional activities and good practice benchmarking.

Supports the mission, vision and core values of WCCI with a clear positioning strategy towards the B2B and B2C market.

Covers a 12 to 24 months' time frame addresses both online and offline marketing dimensions in an integrated manner.

Securing leads for the client's paid services.

Enabling the client to secure 50 000 USD funding.

B2B Marketing Strategy

Students names: Amna Bakhsh and Abdulla Ismaeel
Mazars
Academic Supervisor Tijjay Mitchell

To obtain marketing insights for Mazars propositions within the Bahraini and wider GCC markets
.
To develop a STP Sales and Marketing Plan based upon the localized marketing research.

To implement and launch the Sales and Marketing Plan within the GCC market.

A fully aligned and integrated marketing plan that supports the mission and vision of Mazars within the GCC region.

The marketing plan will be informed by market research including a competitor analysis and the sales funnel analysis.

The plan will incorporate professional B2B marketing strategies and tactics that enhance the sales funnel incorporating a professional B2B sales process blueprint and B2B launch events, etc.

Marketing strategies should look to develop a set of B2B integrated marketing communications that leverage the digital and professional social mediums as well as utilising appropriate offline channels to maximise impact and achieve marketing objectives.

Achievement of SMART Marketing KPIs for launch / implementation of the Marketing Plan.

Project title : Marketing, resource and management plan
Studnets names Dunya Adel , Amin Abdulla, Abdulla Ismaeel, Abdula Albuloshi, Salem Khamis, Fatima Baqer
Baby Essentials
Academic Supervisor Tijjay Mitchell + Amir Zaidan

Baby Essentials an emerging startup children wear premium brand store that has encountered high demand and an unplanned expansion is in need of a highly research informed marketing plan to coordinate its efforts, guide its operations into efficiency and optimize its resources.

Project title : Marketing strategy, IMC strategy including digital marketing with a marketing research component and some services marketing component
Students names Amal and Yasmeen Rubaiyat
Academic Supervisor Tijjay Mitchell

To improve stores current performance in regards of customer service.
To increase sale of each store by being customers' preferred brand.
To spread awareness of Rubaiyat managing company and its brands.
To understand customer purchasing behavior and their preferences.

a marketing research including primary and secondary research should be delivered in order to evaluate the current stores performance and recommendations given accordingly.

Customers / audience behavior is very important to be understood, in order to make the right strategic decisions; therefore, such a deliverable will be needed.

Competitor analysis is an essential deliverable as it will allow Rubaiyat Bahrain to understand where it stands in the market and how to create competitive advantage.

Integrated Marketing Communications Plan
Students names: All class teams
Pretty Paws
Academic Supervisor Philippe Vande Wiele, Darren Morris and Amir Zaidan

Develop a brand awareness campaign that is informed by clear marketing research inclusive of competitive analysis, target market and best practices in the industry in order to arrive at an integrated marketing solution that hits client specific objectives.

Project title : Event Marketing Campaign
Students names Amal, Zahra, Noor, Yusuf
Al' s Chimney
Academic Supervisor Philippe Vande Wiele and Darren Morris

Build brand awareness, acquire new customers and attain above industry average customer retention levels using online and offline tactics.

Develop a clear digital and social media marketing strategy (including content and event marketing opportunities) that clearly communicates the client's brand positioning and effectively pulls the target market through the marketing funnel.

Develop and deliver a comprehensive "Pop-Up" service experience for the target market from event entry to exit that communicates the client's brand positioning, generates and measures customer delight with the target audience, encourages UGC and encourages repeat purchase (I.e. drive traffic to the physical store).

Generate and record high levels of customer satisfaction.

Achieve high levels of client satisfaction and feedback from your client at the end of Marketing Day solidifying the client's commitment to event marketing.

Project title : Event Marketing Campaign" for a client with a services marketing and advanced digital marketing focus
Students names Noor, Sara, Asmaa, Mohamed, Wadeeah
Play
Academic Supervisor Philippe Vande Wiele and Darren Morris

Build brand awareness, acquire new customers and attain above industry average customer retention levels using online and offline tactics.

Develop a clear digital and social media marketing strategy (including content and event marketing opportunities) that clearly communicates the client's brand positioning and effectively pulls the target market through the marketing funnel.

Develop and deliver a comprehensive "Pop-Up" service experience for the target market from event entry to exit that communicates the client's brand positioning, generates and measures customer delight with the target audience, encourages UGC and encourages repeat purchase (I.e. drive traffic to the physical store).

Generate and record high levels of customer satisfaction.

Achieve high levels of client satisfaction and feedback from your client at the end of Marketing Day solidifying the client's commitment to event marketing.

Project title : Event Marketing Campaign" for a client with a services marketing and advanced digital marketing focus
Students names Fareeda, Amin, Ahmed
Papa Quadrat
Academic Supervisor Philippe Vande Wiele and Darren Morris

Build brand awareness, acquire new customers and attain above industry average customer retention levels using online and offline tactics
Develop a clear digital and social media marketing strategy (including content and event marketing opportunities) that clearly communicates the client's brand positioning and effectively pulls the target market through the marketing funnel.

Develop and deliver a comprehensive "Pop-Up" service experience for the target market from event entry to exit that communicates the client's brand positioning, generates and measures customer delight with the target audience, encourages UGC and encourages repeat purchase (I.e. drive traffic to the physical store).

Generate and record high levels of customer satisfaction.

Achieve high levels of client satisfaction and feedback from your client at the end of Marketing Day solidifying the client's commitment to event marketing.

Project title : Event Marketing Campaign" for a client with a services marketing and advanced digital marketing focus
Students names Muneera, Layla, Ayman Kane Mochi
Academic Supervisor Philippe Vande Wiele and Darren Morris

Build brand awareness, acquire new customers and attain above industry average customer retention levels using online and offline tactics.

Develop a clear digital and social media marketing strategy (including content and event marketing opportunities) that clearly communicates the client's brand positioning and effectively pulls the target market through the marketing funnel.

Develop and deliver a comprehensive "Pop-Up" service experience for the target market from event entry to exit that communicates the client's brand positioning, generates and measures customer delight with the target audience, encourages UGC and encourages repeat purchase (I.e. drive traffic to the physical store).

Generate and record high levels of customer satisfaction.

Achieve high levels of client satisfaction and feedback from your client at the end of Marketing Day solidifying the client's commitment to event marketing.

Project title : Six Sigma Implementation on Cooling Cycles in GARMCO
Students name Salman Ali
Garmco
Academic Supervisor: Adel Aawan

This project aims to improve the operation time of the cooling cycle in GARMCO Bahrain. It is carried out using DMAIC Six Sigma methodology, whereas the current situation is studied and a solution is produced from examining its metrics. After comparing multiple cooling solutions, the HVAC system was found to be the most suitable, due to it matching the goals of Six Sigma of converting a variable into a constant. Implementing this solution in the company would allow for the cooling rate of the aluminum coils exiting the hot mill to be a constant rate, that does not change according to the season.

Project title : Event Marketing Campaign" for a client with a services marketing and advanced digital marketing focus
Students names Ayman, Nafisa, Salman Omar, Yasmeen
Chocology
Academic Supervisor Philippe Vande Wiele and Darren Morris

Build brand awareness, acquire new customers and attain above industry average customer retention levels using online and offline tactics.

Develop a clear digital and social media marketing strategy (including content and event marketing opportunities) that clearly communicates the client's brand positioning and effectively pulls the target market through the marketing funnel.

Develop and deliver a comprehensive "Pop-Up" service experience for the target market from event entry to exit that communicates the client's brand positioning, generates and measures customer delight with the target audience, encourages UGC and encourages repeat purchase (I.e. drive traffic to the physical store).

Generate and record high levels of customer satisfaction.

Achieve high levels of client satisfaction and feedback from your client at the end of Marketing Day solidifying the client's commitment to event marketing.

Project title: Smart Speed Beaker System
Student name Sawsan Hasan
Ministry of works
Academic Supervisor: Dr Ahmed Abdelrhman

The growth of any nation depends on the utilization of its energy. In this busy and fastmoving world, the population is multiplying continuously and the conventional energy sources are exhausted which has led to an energy crisis. In order to overcome this problem, non-conventional energy sources have been introduced. The aim of this project is to study and design one of these sources, the count of vehicles passing through the speed breaker has increased enormously these days. Hence, the kinetic energy of the moving vehicle can be converted into mechanical energy of the shaft using rack and pinion mechanism, this mechanical energy is then transformed to electrical energy through the generator, the power is then stored into a battery. The electricity generated is then used to help with the energy consumption of the ministry of work building maintenance directorate and follows the ministry vision of altering into green buildings.

Project title : Marketing, resource and management plan for Alosra Supermarket chain
Students names Marwa Sultan, Fareeda Alkoohaji, Salman Haider, Alaa Ahmedi, Ali Saleh, Amin Hasan, Samana Mahmood, Dalal Alderazi, Fatima Al Bastaki, Dana Althawadi
Alosra
Academic Supervisor Amir Zaidan and Tijjay Mitchell

Alosra supermarket chain is a well-established premium food stuff store that is encountering competition with several hypermarket entrants and acquisitions occurring in the market. Alosra is competing to preserve and expand its market share as well as to satisfy and exceed its customers' expectations thus in need of a highly research informed marketing plan to further understand its customers as well as creative solutions to coordinate its efforts, guide its operations into efficiency and optimize its resources.

Project title : Marketing, resource and management plan for Alknidi Hospital. Al Kindi Hospital
All Class
Academic Supervisor Amir Zaidan, Tijjay Mitchell and Philip Cragg

Alkindi Hospital is a well-established Specialist Hospital that is encountering competition with Bahrain's new healthcare modernization drive, updated health providers regulations and increase of industry entrants occurring in the market. Alkindi is competing to preserve and expand its market share as well as to satisfy and exceed its customers' expectations thus in need of a highly research informed marketing plan to further understand its competitors as well as its customers arriving at creative solutions. This will help it coordinate its efforts and guide its operations into efficiency and optimize its resources.

Project title : Integrated Marketing Communications Plan for Fanta Citrus, informed by market research, including online and offline media
All class
Coca Cola
Academic Supervisor Philippe Vande Wiele, Darren Morris, Amir Zaidan and Philip Cragg

Campaign Goals:
- Increase brand awareness of Fanta Citrus in Bahrain, to become a top of the mind purchase decision in the soft drinks product category in Bahrain.
- Encourage product trial of Fanta Citrus in Bahrain.
- Identify a clear online and offline positioning and communications strategy for Fanta Citrus in Bahrain, providing sample campaign marketing materials.

Research Goals:
- Understand the underlying motivations why consumers in Bahrain choose Mirinda Citrus and related carbonated soft drink brands.
- Profile the target market in Bahrain for flavored carbonated soft drinks towards identifying a clear communications strategy for Fanta Citrus.

Project title : Event Marketing Campaign" for a client with a services marketing and advanced digital marketing focus
Students names Fatema, Manal, Hanan, Noor
Jugos
Academic Supervisor Philippe Vande Wiele and Darren Morris

- Build brand awareness, acquire new customers and attain above industry average customer retention levels using online and offline tactics.
- Develop a clear digital and social media marketing strategy (including content and event marketing opportunities) that clearly communicates the client's brand positioning and effectively pulls the target market through the marketing funnel.
- Develop and deliver a comprehensive "Pop-Up" service experience for the target market from event entry to exit that communicates the client's brand positioning, generates and measures customer delight with the target audience, encourages UGC and encourages repeat purchase (I.e. drive traffic to the physical store).

- Generate and record high levels of customer satisfaction.
- Achieve high levels of client satisfaction and feedback from your client at the end of Marketing Day solidifying the client's commitment to event marketing.

Project title : Event Marketing Campaign" for a client with a services marketing and advanced digital marketing focus
Students names Mohamed, Elham, Ahmed, Wadeeah
Elegant Café
Academic Supervisor Philippe Vande Wiele and Darren Morris

- Build brand awareness, acquire new customers and attain above industry average customer retention levels using online and offline tactics.
- Develop a clear digital and social media marketing strategy (including content and event marketing opportunities) that clearly communicates the client's brand positioning and effectively pulls the target market through the marketing funnel.
- Develop and deliver a comprehensive "Pop-Up" service experience for the target market from event entry to exit that communicates the client's brand positioning, generates and measures customer delight with the target audience, encourages UGC and encourages repeat purchase (I.e. drive traffic to the physical store).
- Generate and record high levels of customer satisfaction.
- Achieve high levels of client satisfaction and feedback from your client at the end of Marketing Day solidifying the client's commitment to event marketing.

Project title : Event Marketing Campaign" for a client with a services marketing and advanced digital marketing focus
Students names Wejdan, Ghassan, Husain, Sara
Black Panda
Academic Supervisor Philippe Vande Wiele and Darren Morris

- Build brand awareness, acquire new customers and attain above industry average customer retention levels using online and offline tactics .

- Develop a clear digital and social media marketing strategy (including content and event marketing opportunities) that clearly communicates the client's brand positioning and effectively pulls the target market through the marketing funnel.

- Develop and deliver a comprehensive "Pop-Up" service experience for the target market from event entry to exit that communicates the client's brand positioning, generates and measures customer delight with the target audience, encourages UGC and encourages repeat purchase (I.e. drive traffic to the physical store).

- Generate and record high levels of customer satisfaction.

- Achieve high levels of client satisfaction and feedback from your client at the end of Marketing Day solidifying the client's commitment to event marketing.

Project title : Event Marketing Campaign" for a client with a services marketing and advanced digital marketing focus
Students names Isa, Adil, Bayan, Nafisa Asha's
Academic Supervisor Philippe Vande Wiele and Darren Morris

- Build brand awareness, acquire new customers and attain above industry average customer retention levels using online and offline tactics.
 - Develop a clear digital and social media marketing strategy (including content and event marketing opportunities) that clearly communicates the client's brand positioning and effectively pulls the target market through the marketing funnel.
- Develop and deliver a comprehensive "Pop-Up" service experience for the target market from event entry to exit that communicates the client's brand positioning, generates and measures customer delight with the target audience, encourages UGC and encourages repeat purchase (I.e. drive traffic to the physical store).
- Generate and record high levels of customer satisfaction.
- Achieve high levels of client satisfaction and feedback from your client at the end of Marketing Day solidifying the client's commitment to event marketing.

Project title : Event Marketing Campaign" for a client with a services marketing and advanced digital marketing focus
Students name s Hawra, Israa, Noora, Mohamed
Tastea
Academic Supervisor Philippe Vande Wiele and Darren Morris

- Build brand awareness, acquire new customers and attain above industry average customer retention levels using online and offline tactics
- Develop a clear digital and social media marketing strategy (including content and event marketing opportunities) that clearly communicates the client's brand positioning and effectively pulls the target market through the marketing funnel.
- Develop and deliver a comprehensive "Pop-Up" service experience for the target market from event entry to exit that communicates the client's brand positioning, generates and measures customer delight with the target audience, encourages UGC and encourages repeat purchase (I.e. drive traffic to the physical store).
- Generate and record high levels of customer satisfaction.
- Achieve high levels of client satisfaction and feedback from your client at the end of Marketing Day solidifying the client's commitment to event marketing.

Project title : Gloriosa Business Plan
Students names Salman Tallaq and Fatema Haidar
Gloriosa Events & Weddings
Academic Supervisor: Luck Chaw

Analyzing the flower and gardens keeping market in Bahrain. Investigating funding sources and identifying appropriate ones. Financial modelling and forecasting. Recommending appropriate business structure.

Project title : Foreign Investment Analysis in Islamic finance Project for Capital Governorate.
Studnets names Marwa A. Ahmed, Anwaar I. Khamdan and Fatema H. Edhem
Company: Capital Governorate
Academic Supervisor: Charlie Fraser

- In depth macroeconomic analysis of Bahrain with focus thereafter on competitiveness and attractiveness.
- Allocate and conduct analysis on regional benchmarks like Dubai, Malaysia, and other centres.
- Assess the cost advantages of investing in Islamic finance in Bahrain. (This includes Islamic banks, Islamic insurance company, and Islamic investment companies)
- Identify the rules and regulations that need to be taken into consideration for foreign investment into Bahrain's Islamic Banking System.
- Full financial prospectus, with analysis including models, projections, and ratios of a range of Islamic financial products in Bahrain, with comparisons to comparable conventional products.
- Effect of project at macroeconomic level in terms of balance of trade and balance of payments.

Project title : Sabre Multi-year outlook
Students names Walaa K. Abdulrahman, Safiya R. Khamis and Mohamed A. Rafeaei
Company : Sabre
Academic Supervisor: Charlie Fraser

The Project is about defining the travel trends

by collecting, researching and analysing the travel data including:

- Number of Bookings on air, hotel, car, rail & cruise and future growths.
- Number of Bookings to hit on GDS and other channels like Low cost carriers, Online bookings etc.
- Market size & growth forecasting.
- Key drivers of market (means what it takes to retain existing customers & win new business).
- Competition analysis in form of SWOT analysis.
- Forecast of market share of Sabre & competition per country across STNME region.
- SWOT analysis of each country in STNME region.
- Analysis of major customers.
- Recommendations that might be considered into 2020 Strategy.

Project title : Gap Risk analysis Report for the claim department, BNH insurance.
Students names Salman Barakat and Zainab Mohamed
Company: BNH- Bahrain National Holding.
Academic Supervisor: Latifa Al Fadhel

A GAP risk analysis report to determine the financial risk status and performance of the company compared to the other insurance companies and a recommendation to enhance the claim department system.

Project title : Bahrain's SMEs Financing Through Islamic Banks, with CBB.
Mohamed Ghayeb, Layla A. Alkhabbaz, Tahera R. Fardan and Nihal Shaikh
Company: Central Bank of Bahrain
Academic Supervisor: Nedal Elghattis

- To specify the role of the Islamic banks in SMEs financing.
- Identification of new developments in SMEs financing in which Islamic and conventional banks have made progress in the past years and examine what can be learnt to activate the role of SMEs in economic development in this respect.
- Providing an alternative framework for SMEs financing.
- Getting acquainted with the Kingdom of Bahrain's experience – as applied case – in the SMEs financing.
- Provide the theoretical and practical platform to the social ventures to build up the emerging social entrepreneurship support ecosystem in Bahrain.
- Develop financing model that can be used by Islamic banks to support SMEs.

Project title : Business Plan for a chain of coffeehouse
Noora Alsharbati and Eid Eid
Company: First avenue gulf consulting.
Academic Supervisor : Dr.Ghassan AlSoud

A Business Plan to establish a local chain of coffeehouse in Bahrain offering all types of coffees and teas with business facilities such as meeting room, personal assistance, printing and computers.

The challenges to the projects is to have a unique brand that can be franchised outside the country, finding new trendy locations and proposing a unique business model. The target capital of the company is BHD 150,000.

Project title : Bahrain – Cyprus Trade Relations & Business/Investment Opportunities with Creo.
Students names Hawra Al Farhan, Fatema Al Jamri and Fatema Alghanmi
Academic Supervisor: Charlie Fraser

Is a report investigating the trade relations and investment opportunities between Bahrain and Cyprus. The report is used to enhance economic relationships between the two countries. The report also is presented to Local and International investors in both Bahrain and Cyprus.

Project title : Online real estate services Business Plan with: First avenue gulf consulting.
Students names Sayed Hashem M. Alkamel and Zahraa A. Alghsra
Academic Supervisor: Dr. Ghassan Al Soud

The project is about establishing an online platform to provide full fledge real estate services such as brokerage, maintenance, construction and facility management. The platform is designed to be substitute to traditional business methods. It is a market place for all the stakeholders to offer and seek services from each other. It will essentially cut down the costs of travel, market search and marketing.

The target capital of the company is BHD 200,000.

Project title : Financial Risk Management
Ahmed Marhoon, Muhanna H. Aljazzaf, Waleed E. Hasan and Ammar Y. Yusuf
Company" Bahrain Bourse
Academic Supervisor: Dr. Ghassan Alsoud

The project is about developing a financial risk methodologies and frameworks that will be adopted by Bahrain Bourse's risk team to be used in their future reporting.

Project title : Bahrain; World's Fintech Hub
Students names Ali D. Husain, Faisal A. Alahmed, Ameera T.Mohamed and Nawal K. Nazier shaikh
Company: Bahrain Fintech bay
Academic Supervisor: Charlie Fraser

The project is about promoting and enhancing the Bahrain's position as a leading regional Fintech hub by conducting a research and analysis about:

- Cryptocurrency and digital cash (Awareness, regulatory, Acceptance by businesses and individuals, and legislations).
- Blockchain technology, a distributed ledger technology (DLT) that maintain records on a network of computers but has no central ledger.
- Smart contracts, which utilize computer programs (often utilizing the blockchain) to automatically execute contracts between buyers and sellers.
- Open banking, a concept that leans on the blockchain and posits that third-parties should have access to bank data to build applications that create a connected network of financial institutions and third-party providers.
- Insurtech, which seeks to use technology to simplify and streamline the insurance industry.
- Regtech, which seeks to help financial service firms meet industry compliance rules, especially those covering Anti-Money Laundering and Know Your Customer protocols which fight fraud.
- Robo-advisors, (Platform that provide financial planning services with little to no human supervision) such as Betterment, utilize algorithms to automate investment advice to lower its cost and increase accessibility.
- Unbanked/underbanked, services that seek to serve disadvantaged or low-income individuals who are ignored or underserved by traditional banks or mainstream financial services companies.
- Cybersecurity, given the proliferation of cybercrime and the decentralized storage of data, cybersecurity and fintech are interlocked.

Project title : I-Recover
Studnets names Razan Khaled, Ammar Almadani, Isa Almusallam and Mohammed Redha
Company : I-Recover
Academic Supervisor : Latifa Alfadhel

The project is about investigating the debt market in Bahrain and GCC. Primary and secondary research were conducted to provide a recommendation regard the best online debt collection business model for Bahrain market.

Project title : Credit Risk Model with PIE
Students names Sereen Abu-Odeh, Maryam AlKhunaizi, Mohammed Al Derazi and Amal Sabt
Company : PIE
Academic Supervisor: Dr. Ghassan AlSoud.

The project is about developing a credit risk model based on alternative data sources and capitalizing on AI and Machine learning technologies.

Project title : Accelerator Program, Business Plan (Confidential)
Students names, Maryam A. Aljawhara, Munya J. Sabkar, Fatema M. Alhaddad
Academic Supervisor: Wafa Salman

The company is exploring the idea of an accelerator program targeting start-ups and idea stage Businesses. This program is for local and international individuals, and primary targets recent graduates that are interested in pursuing the entrepreneurial path to start their venture.

Project title : Financial projection and Business presentation for new restaurant (two thirds)
Students names
Academic Supervisor: Wafa Salman

Produce a full Operational, Financial and Legal Manual for Franchise, Expansion, and Investing.

School of International Logistics Management

Project title: Analysis of Current Processes in Bahrain DHL Hub's "Sorting Department" for Operational Efficiency and Effectiveness
Student name: Ghadah Kassab
Company name: DHL

This research is a final project and requirement for the Bachelor of International Logistics Management degree in Bahrain Polytechnic. The project was conducted during a four-month period work placement in DHL Express located in Muharraq, Bahrain. Lean management is an organizational approach used by companies to ensure continuous improvement of processes and elimination of "waste" (Fliedner, 2011). This concept will be applied to DHL Express's "sorting department" in the company's hub by comprehensively analyzing the company's sorting operations to measure efficiency and effectiveness. It is important to mention that this research does not aim to specifically identify "waste" that may be disrupting or negatively impacting the sorting processes, but it will however provide an analysis of the level of efficiency of these processes and attempt to identify areas for continuous improvement for increased efficiency of these operations. These areas may be bottlenecks or waste, and recommendations may or not be made accordingly if they are identified throughout.

Project title: Analysing the readiness of the BLZ warehouses to implement e-Freight for their warehouse operations
Student name: Basant Nazir
Company: Bahrain Customs

This project will be focusing on the capability of these warehouses to implement new technology that will improve their current operations and improve efficiency and effectiveness in the BLZ. This project outlines the relevant technology that will mainly improve customs operations and prevent the current and future warehouses from delays or in-effectiveness in customs operations that will potentially affect the end customer. Consequently, the project will be principally an analysis that will analyze three categories of the warehouses in the BLZ according to their size and capacity. These categories are divided into large warehouses, medium and small. This project will not be concerned with any other issue of that is irrelevant to the customs dedicated services or facilities. Moreover, the analysis will be basically focusing on the implementation of the most suitable technology that will benefit all the warehouses according to the capability of the warehouses operators and their potential needs. This project aims to analyze the ability of the three warehouses to implement a developed technology and technique that will improve all the operations that are occurring with customs starting from the inspections until the tax pay. The analyses that will be used will study the ability of these warehouses to implement the technology or develop their operations as well as the benefits and the outcomes of this technology and improvements on their daily operations.

Project title: The effect of temperature fluctuation on pharmaceutical products between receiving area to the cold storage
Student name: Reem Almulla
Company name: BAS

The project will focus on the cold chain in Bahrain airport services company. Being able to control the temperature without interruptions when receiving the product and storing it. This project will focus only on pharmaceutical products and how to maintain the stability of its desired low temperature range and protecting pharmaceuticals from Humidity, heat and sunlight is very important as this is

the consistent weather in Bahrain. Keeping a desired temperature will help protect the products from moisture caused by humidity and exposing some pharmaceuticals to sunlight can cause damage as many products are photosensitive. Moreover, protecting these products from heat is significant to avoid them from melting (WHO, 2017). This project will be about the logistic cold chain process in Bahrain airport services, the project excludes perishable products and will focus only on pharmaceutical products. The project will only concentrate on the pharmaceuticals when they arrive and unloaded, to them being transported for storage into the chillers or freezers. The process of when the product is picked up again from the chillers or freezers to the destination of where the customer will be in charge of it will not be mentioned. The focus will be mainly on the time that the products are ground handled by BAS by their techniques and equipment's. Moreover, the aim will be to identify the impacts of temperature fluctuation on the products and why does the products temperature become unstable during this process. How does this effect the products, the customer and BAS. Furtherly solutions to protect the pharmaceuticals from damage and loss caused by temperature instability will be discussed and provided with recommendations.

Project title: Greening the Bahrain Public Transport Company Bus Fleet: A Feasibility Study

Student name: Sabah Mohammad
Company: Bahrain Bus Company

BPTC's engineering department in collaboration with National Express are looking into implementing electric buses in Bahrain. The project is a feasibility study regarding transitioning BPTC's Bus Fleet from conventional diesel buses to fully electric buses. The aim of the project is to find out if the implementation of electric buses in Bahrain is a feasible option by evaluating how the electric buses would operate in the same conditions as BPTC's current bus fleet. The project will include a brief cost analysis of the fuel and maintenance cost of the diesel buses and compare it to the expected recharging and maintenance cost of the electric buses.

Project title : Expiration of FMCG Before and After Dispatch at BMMI Alosra

Student name: Aysha Ebrahim
Company: BMMI

According to Nakyanzi et al. (2009), the expiry of cases highlights a problem with the supply chain. This project will investigate the expiry of a range of FMCG in the BMMI Alosra warehouse before or shortly after delivery to the Alosra branches and will examine mitigating solutions. The project will be based around three main questions relating to the expiration of FMCG; What is the extent and impact of the problem? What are the causes of the problem? What solutions will help to mitigate the problem?

This project will focus on the BMMI Alosra section of the BMMI warehouse. It will not examine other areas within the BMMI warehouse including; beverages, consumer goods and Mars. The project will be based around three main questions (section 1.2) relating to the expiration of FMCG before or shortly after dispatch at BMMI Alosra. The project will not analyse the current moveable racking system or examine new racking or shelving systems. The project will focus on how best to reduce FMCG expiration before dispatch using the existing infrastructure. Finally, the author has been unable to obtain data (inventory and financial) for years prior to 2017. Data was not provided due to its commercially sensitive nature. Furthermore, significant parts of the accessed data are not allowed to be published in this report as the author signed a non-disclosure agreement

Project title: Analysis of inventory in Gulf Air to optimize existing warehouse space

Student name: Nialish Mian
Company: Gulf Air

The purpose of this project is to improve space utilization in the in-flight warehouse of Gulf Air for smooth current and future operations. The project will focus on applying the inventory management and warehouse layout principles for the current and future anticipated inventory to reduce the current space consumption. According to Speh (2009), warehouse management is about managing space because storage within the warehouse incur a monthly cost; therefore, a warehouse should be efficient in managing space to save costs (Speh, 2009).

Project title: Stock management in E.K.K.'s dedicated Toyota and Lexus stockyards

Student name: Hasan Alawadhi
Company: EK Kanoo

The focus of this project is about the inefficiency in stock management with E.K.K stockyards that are dedicated to Toyota and Lexus. There are currently three stockyards dedicated to Toyota and Lexus, where the main one is situated in Sitra's Industrial area that accommodates 1,168 parking spaces. Moreover, the second stockyard is next to the main stockyard with only one road separating them, where it can accommodate 543 parking spaces. The second stockyard is used for industrial trucks and busses as well as to store excess stock of low-value vehicles. The 3rd stockyard on the other hand is not operational. The main issue identified is the inefficient management of vehicle stock in both yard 1&2 as they are both congested with excess stock greater than the number of parking spaces. This leads to parking spaces and entrances to be blocked by other vehicles. The following issue leads to several setbacks such as time being wasted during operations.

Project title: Incomplete orders within Aramex's shop and ship department

Student name: Nial Bumetaia
Company: ARAMEX

The main focus of this project revolves around Aramex's reverse logistics operations, where goods are returned due to specific reasons. There are 3 departments involved in the return logistics process, these departments are the inbound, this department handles shop and ship deliveries that are only for Bahrain. In addition the dispatch department is where the handling and supervision of couriers takes place. Furthermore the Customs clearance department is where shipments are put through regular or irregular inspections before approval of entering or exiting the country. Other aspects will be discussed in detail such as the causes behind Aramex's high volume of returned goods. Some include poor shipments handling, the unavailability of customers and goods pricing differences.

Project title: Root Causes Behind the Backorder Issues, Solutions and Recommendations at Awal Gulf Manufacturing Co. - Spare Parts Division of the Logistics Department

Student name: Marwa Alkhaja
Company: Awal Gulf

The project considers the issue of backorders in the spare parts division of the logistics department which occurs on annual basis in the spare part's inventory and causes delays and having unsatisfied customers which in some cases lead to having loss of customers. The project covers finding the root cause of backorders conducted in the spare parts division and obtaining solutions and recommendations to eliminate the issue. The project will cover the root causes of backorders in the spare parts division of the logistics department at Awal Gulf Manufacturing Co. The project focuses on the spare parts division's direct customers specifically and how the organization is affected by this backorder issue. The project strictly covers the inbound aspect of the logistics department. The project will also cover solutions and recommendations to the backorder issue of the spare parts division.

Project title: Warehousing & Inventory Operations
Student name: Abdulla Najem
Company: Celerity

In this project the operations in Celerity's shipping & forwarding bonded warehouse will be analyzed. Operations such as cargo receiving, storing, retrieving, and dispatching will be thoroughly observed and their data will be collected for further analysis. The data collected will be analyzed using analysis tools such as fishbone and SWOT. The fishbone analysis will be used to identify the main causes of the current problems as well as the sub-causes. The SWOT analysis will be used to understand the impact of the operations on the warehouse efficiency and effectiveness.

Project title: Effect of slow-moving Zirconium in a key warehouse facility
Student name: Salman Ghazwan
Company: Midal Cable

The project will examine the effect of slow-moving inventory in Midal Cables warehouse. In this research the slow-moving sample inventory will be the Zirconium element which is consumed in the manufacturing process by mixing it up with aluminium. This element will be used only in some specific orders made by the customers. Due to the fact that the element consumption is dependent on customer orders; the consumption of Zirconium becomes very rare in some periods which make it a slow-moving item. The project will use the sample of Zirconium to track down the cost to provide an overall explanation on how the slow-moving items will be contributing in increasing warehousing cost and an explanation on how to reduce the contrasted cost of slow-moving items will be provided.

Project title: Establishing a performance measurement framework for Almoayed Schenker
Student name: Ahmed Alabdulwahab
Company: Almoayed DB Schenker

Almoayed Schenker is wholly reliant on other 3PL firms to undertake the physical distribution and storage of customer orders. So, this project is examining how to improve Almoayed Schenker's management of these outsourced services, where there are limited processes in place to monitor and manage the 3PLs performance. This had an impact on the services provided and experienced by Almoayed Schenker's customers and therefore, the main aim of this project is to establish relevant performance measurements and performance framework for Almoayed Schenker to use for managing their 3PL relationships.

Project title: An operational strategy for Almoayed Schenker: Examining the competitive factors of a new entrant in Bahrain's congested 3PL industry
Student name: Majeda Yusuf
Company: Almoayed DB Schenker

Almoayed-Schenker is currently operating as a virtual freight-forwarding provider to its customers in Bahrain but have ambitions to develop a physical presence in the near future. This research is an examination of the opportunities for Almoayed-Schenker to grow and compete in Bahrain's congested 3PL industry. The reason behind undertaking this research is to examine the current competitive 3PL industry and establish what strategies Almoayed-Schenker will need to employ to be competitive and operational. In an environment where there are 1,319 operating Logistics Service Providers (LSPs), it is necessary for Almoayed-Schenker to understand its place in this environment. Based on this, the primary research questions are as follows:

I. Where is Almoayed-Schenker positioned in Bahrain's 3PL industry?

II. How can Almoayed-Schenker grow and compete in Bahrain's congested 3PL industry?

Project title: Outsourcing the Warehousing Function within Ithmaar Bank
Student name: Hasan Abdulla
Company: Ithmaar Bank

As warehousing is not a core competency of Ithmaar Bank, several problems appeared at the warehouse level, and it has become difficult to locate required banking records. Therefore, Ithmaar Bank decided to outsource the management of their storage requirement to Crown Worldwide Group, that is a specialized third-party logistics (3PL) company. The deadline of the project of transferring all the records to the 3PL company's warehouse is 31st December 2018. However, at the current operational pace at the bank's warehouse, the project is likely to be completed in the last quarter of 2019. This is due to numerous existing barriers that are limiting the productivity of the warehouse operations, that includes poor inventory control and organization, and the nonexistence of a database showing where records are located. Additionally, this research is examining approaches and solutions to speed up the execution on this project taking into account the different factors influencing it.

Project title: Inventory Variance
Student name: Namrha Ghafooruddi
Company: IKEA

Accurate inventory records are the backbone of IKEA's operations. Any discrepancies in the records of stock quantities and their locations can have a detrimental effect on the business both operationally and financially. According to Lu (2014), efficient inventory management directly leads to increased sales and enhanced customer loyalty. The project aim is for the author to study the workings of IKEA's inventory system and how the various related processes within different departments of the store affect its management. The author gathers sufficient research data to investigate the root-causes of 'Inventory Variance' at IKEA. After properly defining the problem and its sources, she conducts a deeper analysis to understand their workings. These analyzed research findings paired with the review of related published literature helps the author form solutions and recommendations.

Project title: The Location System of the Toyota Stockyard
Student name: Husain Alqari
Company: EK Kanoo

This project will be discussing and analyzing the order picking and vehicle location system issues at the EK Kanoo vehicle stockyard, a yard used to store the vehicles imported by EK Kanoo. This project will discuss and analyze the effectiveness of the storage location methods used and retrieval time of order pickers to find vehicles at the stockyard until they are ready to be dispatched. The project will also look at the impact of the order picking system and vehicle location system at the stockyard on the turnaround time and the process of customers ordering a vehicle until they receive it. The objective of this project is to find a solution to enhance the location system of vehicles in the stockyard and improve the order picking methods used to enhance the retrieval and turnaround time to better customer service.

Project title: Container Reshuffles at APM Terminals Bahrain
Student name: Bashayer Alhashimi
Company: APM Terminals

This research project is about "Container Reshuffles" in APM Terminal. The reshuffle is defined as unproductive moves of containers occurring during the port operations such as stacking or retrieving in order to access another container located underneath (Güven & Eliiyi, 2014). APM Terminal is facing an ongoing issue in terms of the increased amount of reshuffles in the yard operations. The APMT yard strategy is to adjust the locations of the containers as

much as they can in a specific area in order to reduce the travel time of RTG Crane (Rubber Tyred Gantry Crane) which therefore results in reducing the cost of container transportation. In the yard, containers have been located separately based on their category for instance there are dedicated locations for full containers, empty containers and damaged containers. Some container locations in the yards have been adjusted by mixing containers of different minor shipping lines in the same bay, as well as mixing the empty backload containers in one area. In addition, in order to utilize the yard's capacity, containers have been stacked above each other. This resulted in an increase of container shifting resulting in more reshuffles, since containers are being mixed and stacked on top of each other.

Project title: Delays in Shipment Delivery to Saudi Arabia

Student name: Fatema Mohamed
Company: Awal Gulf

The main issue identified in Awal Gulf is shipment delay; many of their customers were constantly calling to complain about delays in their shipments. Some of those shipments were delayed for over four days. This research will investigate the delays of the delivery process of Awal Gulf's residential air conditioner system to Saudi Arabia. It will also analyze the delivery process starting from truck booking, until it reaches its final destination to the customer, including the third parties involved in the process. This research will also discuss the causes of the delays, solutions and recommendation.

Project title: Root Causes of Damaged Cargo

Student name: Maryam Qasim
Company: BAS

BAS is currently unaware of the causes of the damage phenomenon and therefore BAS with limited understanding on damages types, root causes, contributing factors that affects the occurrence of damages. This project examines the root causes of damaged cargo occurring in the import department during the inbound process to provide guidelines on improving the current way of cargo handling. BAS receives numerous complaints on these cargo damages that in the period from May to September 2018, there had been an average of 72 report complaints. These damages are affecting BAS performance level, customer satisfaction, and profit margins. Therefore, it is necessary for BAS to study this phenomenon to apply measures aiming at reducing the number of damages. To this end, this project answers the following research questions:

I. What are the most common types of cargo damages in in the import department during the inbound process?
II. What are the root causes and contributing factors of the said cargo damages?
III. What are the possible solution to reduce the said cargo damages?

Project title: Investigating the Causes of Delay in Vulnerable Cargo Order Picking Operations

Student name: Maan Aljuaili
Company: BAS

This project focuses on examining one of the processes of the cargo terminal at Bahrain Airport. The process involves the storage and retrieval of cargo at the terminal's Import Department. One of the department's facilities is a protected storage area code named (K002). This storage is used to store vulnerable cargo and shipments confiscated by the Customs Authority. The operations at storage K002 require the coordination between different departments and involve providing services to the terminal's customers. In this research, order picking from storage K002 is examined to measure the time required for the process compared to general cargo order picking. Then, the research tries to identify the causes of delay in K002 operations. After that, it explores possible solutions to improve the operations and speed up the process. Finally, the research is concluded by recommending the most appropriate solutions to the problem and identifies areas for future research.

Project title: The Influence of Punctuality on Bahrain Public Transport Company's Ridership

Student name: Maryam Shaaban
Company: Bahrain Bus Company

This research studied the potential correlation between poor punctuality and Bahrain Public Transport Company's ridership. Punctuality considers as a significant parameter to evaluate the service performance by the transport operator and also considers as a preferable factor for the service users. A linear regression analysis utilised to predict the prospective performance of punctuality and passenger number. Additionally, a correlation coefficient analysis implemented to determine the strength and direction of the relation between punctuality and its influence on the ridership. The correlation coefficient analysis result revealed that there is a relation between the two variables. Poor punctuality performance has occurred due to several reasons according to survey responses by the managers, drivers and inspectors. This study also suggested various solutions and recommendations to solve the company poor punctuality issue and its effect on the bus passengers.

Project title: Finding the Internal Root Cause of the Delays between BICS and BAPCO's Airfreight Import Operations

Student name: Hasan Aldoseri
Company: Kanoo Shipping (BICS)

On the third of October in 2018, Bapco has held an urgent one-week long meeting with the company after they have introduced a new supplier monitoring system which has discovered that out of around 100 shipments 50 of those were late. This has started a panic state at BICS as there was a chance that they would lose their main customer of face penalties as a result of that. During the placement period, this was not the only situation that happened as previous to that, just one week earlier the company has lost another customer due to their inability to compete with other logistics suppliers in the market and there are fears that the same will happen with Bapco after the period of the contract. Therefore, the issue is not about customers only but also a matter of survivability to the company. During the placement period, it was observed that there is an obvious slowness of operation and a frequent delay issue that was caused by wrong and unnecessary practices, efficiency and effectiveness of the company and its employees, communication problems and finally, managerial issues in the company that were the main contributors to the problem. Therefore, the project plans to identify the root causes of the delays and slowness in the company and develop solutions and recommendations to solve or help decrease the magnitude of the issue.

Project title: Efficiency in stock management of Gulf Air uniform warehouse

Student name: Maryam Almahmeed
Company: Gulf Air

This project is about daily warehouse management practices. An efficient warehouse system is significant in order to improve daily warehouse practices, and that's by accurately identifying the availability of items and where they are located in order to have faster warehouse process (Richards, 2017). This project is going to discuss the slowness in order picking in Gulf-Air storeroom. The initiation of lateness when cabin crew are receiving their uniforms is caused by several reasons which will be discussed in the findings Section 5.5. Furthermore, lost items and bad organizing in the warehouse are highly impacting the daily warehouse process negatively. Therefore, having better management and better information regarding where items located and the items going in and out will allow Gulf-Air to improve their operations.

Project title: The impact of damaged goods located in various storage areas on operational effectiveness

Student name: Eman Naser
Company: BMMI

The project is examining BMMI's warehouse

processes and operation, focusing on the storage of damaged products in the "quarantine" areas and disposal process. The warehouse is a central part of any logistics system and the way processes and operations are organized and controlled, has huge impacts on operational efficiency and company costs (Subramanya, Rangaswamy, & Ramaa A, 2012). Based on this, the three research questions are as follows:

I. How many "quarantine" areas are there in the warehouse?
II. What is the quantity of expired and damaged products in these areas?
III. How long are products held in the "quarantine" areas?

Project title: Improving Order Picking Efficiency

Student name: Fatima Habib Mohamed
Company: ARAMEX

This project is about the order picking efficiency of freight forwarding warehouse of Aramex, Bahrain. It is observed that it is very slow for the warehouse workers in locating a piece of a shipment in warehouse. Therefore, this project primary focuses on how to improve the efficiency of the warehouse operations in the freight forwarding warehouse of Aramex. Based on the initial observation over 10 weeks, it takes 15mins for locating one shipment in the warehouse. It was also observed that a driver who is not supposed to do the picking task along with a warehouse co-worker, took 1 hour in order to retrieve four shipments from the warehouse for delivery. This thus indicates that the locating process in the warehouse is very slow. It was also observed that the shipments are placed randomly on the ground which makes the warehouse congested that results in difficulty in the process of shipment circulation in warehouse.

Project title: Reducing Delays in the Dispatch Operation and Express Parcels Delivery

Student name: Yaser Abdulrahim
Company: ARAMEX

The project is about the delays in the operations within the express delivery for Aramex Bahrain and the deliveries of the packages to the designated consignees in Bahrain. Thus, it will be focusing on the dispatch operation in Aramex bonded warehouse for the express department and the express parcel shipments. Moreover, the project will also focus on delivery process and the causes behind the delays. As there are approximately 4,000 shipments that are being handled and delivered each day as the author have been informed. Furthermore, 50 couriers make the delivery each day. As the project will try to find the source of delay in the terms of the cargo and information flow within the dispatch operation.

Project title: Exploring Root Causes of Customs Clearance Delays

Student name: Fatema Almulla
Company: Wilhelmsen

This project examines slow customs clearance of two clients of AlMoayed-Wilhelmsen; Air France and AlMoayed-Schenker on behalf of Amazon. Delays in customs clearance for these two customers was identified early on in the researcher's industry placement where delays can be anywhere between 1 day and 18 (See Appendix I). In a sector with many other competitors to choose from, AlMoayed-Schenker (Amazon) and Air France could easily switch, leaving AlMoayed Wilhelmsen with a significant loss of revenue. The study aims to explore the root-causes of such delays by investigating the internal inefficiencies in AlMoayed-Wilhelmsen processes and establish any contributing external factors that can create delays for AlMoayed-Wilhelmsen and its clients. To this end, the project answers the below research questions;

I. What are the root-causes of late customs clearance in AlMoayed-Wilhelmsen?
II. What are contributing factors to the late customs clearance in AlMoayed-Wilhelmsen?