Example of Abstract:

Example 1

This research aimed to create new knowledge and pioneer a path in the area relating to future trends in the WSN, by resolving some of the issues at the MAC layer in Wireless Sensor Networks. This work introduced a Multi-channel Distributed Coordinated Function (MC-DCF) which takes advantage of multi-channel assignment. The backoff algorithm of the IEEE 802.11 distributed coordination function (DCF) was modified to invoke channel switching, based on threshold criteria in order to improve the overall throughput for wireless sensor networks.

This work commenced by surveying different protocols: contention-based MAC protocols, transport layer protocols, cross-layered design and multichannel multi-radio assignments. A number of existing protocols were analysed, each attempting to resolve one or more problems faced by the current layers.

The 802.15.4 performed very poorly at high data rate and at long range. Therefore 802.15.4 is not suitable for sensor multimedia or surveillance system with streaming data for future multichannel multi-radio systems.

A survey on 802.11 DCF - which was designed mainly for wireless networks –supports and confirm that it has a power saving mechanism which is used to synchronise nodes. However it uses a random back-off mechanism that cannot provide deterministic upper bounds on channel access delay and as such cannot support real-time traffic. The weaknesses identified by surveying this protocol form the backbone of this thesis

The overall aim for this thesis was to introduce multichannel with single radio as a new paradigm for IEEE 802.11 Distributed Coordinated Function (DCF) in wireless sensor networks (WSNs) that is used in a wide range of applications, from military application, environmental monitoring, medical care, smart buildings and other industry and to extend WSNs with multimedia capability which sense for instance sounds or motion, video sensor which capture video events of interest.

Traditionally WSNs do not need high data rate and throughput, since events are normally captured periodically. With the paradigm shift in technology, multimedia

streaming has become more demanding than data sensing applications as such the need for high data rate protocol for WSN which is an emerging technology in this area. The IEEE 802.11 can support data rates up to 54Mbps and 802.11 DCF was designed specifically for use in wireless networks.

This thesis focused on designing an algorithm that applied multichannel to IEEE 802.11 DCF back-off algorithm to reduce the waiting time of a node and increase throughput when attempting to access the medium. Data collection in WSN tends to suffer from heavy congestion especially nodes nearer to the sink node. Therefore, this thesis proposes a contention based MAC protocol to address this problem from the inspiration of the 802.11 DCF backoff algorithm resulting from a comparison of IEEE 802.11 and IEEE 802.15.4 for Future Green Multichannel Multi-radio Wireless Sensor Networks.

Example 2

This work is about sustainability and how the automotive industry can handle the change to sustainability. Therefore the background of sustainability was explained. Through analyzing how business and marketing is made from the corporate vision, mission and goals to finally the business activities, we identified that an integrated strategy for sustainability is unavoidable.

Through considering the current business activities of the BMW Group and the Daimler AG we identified that they already make strategic statements about sustainability on their homepages and in sustainability reports.

Finally a framework shows how marketing could support the way to sustainability. Our culture of waste and the wrong use of fuel using vehicles were identified as the major reason of the not sustainable history. The main duty of marketing was identified: to change this old culture. The automotive industry can handle this change to sustainability by making alternative vehicles modern and "cool", engage people and governments and encourage sustainable behaviour.

Results were critical evaluated along the entire work and problems and restrictions were pointed out carefully

Example 3

This project aims to model and analyse selected business processes, office materials and tools used to improve efficiency and effectiveness of work at the department of insurance company. The research process of this project was designed on the basis of pragmatism"s assumptions, combination of deductive and inductive approaches and different strategies: action research, archival research, case study and ethnography.

Data were gathered through interviews and direct observation of office work. The course, methods and tools of the investigation were determined by the company"s type, environment and requirements. The literature review included aspects such as: business processes, process modelling, process redesign, Business Process Modelling Notation and Pareto Analysis. There were presented particular concepts and current research existing in individual areas. With the use of Pareto Analysis, the key business process of the EH department was selected – the process formation of *motor insurance policy.* Then, both the previous, manual process of making out motor insurance policy and the current one – supported by software implemented, were modelled with the aid of BPMN. Next, they were analysed in terms of the effectiveness and efficiency. Aspects such as: tasks, their order and interdependencies, inputs,

outputs, process participants their role and interdependencies, technical support or bottleneck were considered. Also issues like time of particular tasks, number or amount of office materials, tools and additional documents had a great significance in conducting the analysis. Afterwards, both processes were compared and evaluated. The results showed that the current process of making out *motor insurance policy* has many shortcomings both in terms of organisational and technical issues, and needs to be redesigned. Improvements were proposed again in the form of BPMN"s model of the future state. There were utilised the techniques of process redesign such as: re-sequencing, parallelism of tasks, tasks reallocation, automation, empower of employees and technology development. Potential time of process performance as well as potential consumption of office materials were estimated or calculated, basing on the results from previous processes or some assumptions made. The research showed that implementation of suggested solutions would improve process effectiveness and efficiency considerably.