Introduction

~~A classic example of what I see time and time again in this industry is the wrong trade used for the wrong job, due to lack of education in the market place.~~ I recently visited the home of a very successful developer who ~~has~~ had a ~~what he called~~ 'home automation system' installed in his home.

~~I like to visit properties that have Automation installed for inspiration and to allow me the opportunity to see what others are doing that is different or similar. Its like support network that keeps you upto date.~~ When I entered the ~~home~~ property ~~immediately~~ I immediately noticed that there were a lot of dollars pumped into this house. ~~has had a lot of dollars pumped into it,~~ I knew that this would be a great installation and ~~I started to get~~ was ~~anxious~~ excited to see the ~~what Automation system was used and what the other installer had done~~ systems he used.

As I walked ~~walked around~~ in I ~~was~~ started looking for ~~some~~ touchscreens.

Insert lighting description.

~~and couldn't see any I asked "what automation system do you have" the owner said "I got C-BUS©" which is great lighting control system developed by Clipsal, I knew that they had made a good choice.~~ The next thing I noticed were~~I continued thru the home I looked up and could see~~ ceiling speakers in the living areas and bedrooms. 'So you got a multi-room audio solution, too?' I asked.

~~, I asked wow you have a "Multi-room" Audio solution ,~~ T~~t~~he owner looked at me like I was from another planet.

~~I~~ When I asked ~~with the automation system~~ how ~~do you~~ he controlled ~~all~~ the music, ~~in each room. H~~he opened the joinery door in one of the rooms and showed me his A/V receiver. 'Great,' I said, 'you can

~~I said great so you~~ control the whole house from here – the music you play here will come out in each room.'

He shook his head, 'No, ~~, you can plug the music in here and it will come out in each room. He replied "no~~ I have a receiver in each room so~~,~~ each person can listen to their~~his~~ own music~~".~~'

This was starting to look less and less like a multi-room audio solution. ~~I began to wonder that this didn't look like a Multi-Room audio solution but a~~

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Comment [J1]: How could you tell it was an expensive house? Giving some examples of the size or the landscaping or the finishes will help paint a picture for your reader

Comment [J2]: What else would you look for? I think this would be stronger if it was a list with 2-3 items, because then the reader can get a sense for just how much is missing.

Comment [J3]: Rather than giving the name of the C-BUS control system, which might not mean anything to your readers, explain what you could see. How many lights were there, where were they positioned, were any turned on so you could see them in action, were they dimmed, bright, coloured, etc.?

Think about breaking it down in the same way you broke down the audio system

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Comment [J4]: Were they in each room or just in some rooms? Details help create a clearer picture

~~standard amplifier and speakers.~~ I asked ~~"~~ '~~W~~what ~~about~~ if you all want to listen to the same track ~~or If you have a party~~ – where do you plug the music in?'

Ultimately, the 'solution' was to move his iPod to the relevant receiver. In other words, there was no holistic solution.

~~" he said I plug it in here and it comes out in the bbq area, I said what if you want to listen to it in the kitchen or the lounge, he replied you take the ipod from here and plug it in at the kitchen.~~

I began to wonder what type of h~~H~~ome automation ~~solution~~ system this was~~was installed~~. There were n~~N~~o centralised control touch~~es~~ screens, no way to integrate the lighting and audio, and ~~and~~ no multi-room audio.

Then ~~I had a~~ came the light--bulb moment – ~~,~~ this home was not automated. ~~at all i~~It simply had a lighting control system with some speakers.

I've spent twelve years in the home-automation business, creating 125 smart homes and working with over 400 happy customers. And I see this far too often.

Comment [J5]: Your website said 399, but I figure you will be over 400 by the time you get to print

The average home owner today assumes a 'smart home' or 'home automation' simply means a house with a few gadgets. This often means that the trades who work on their house assume a request for automation is a whim or a way to keep up with the latest fad, and install the requested gadgets at the end of the renovation or build without considering how they could work together in a synchronised solution.

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~~Coming back to my point about education. The customer has under the impression that because he had the lighting control system it meant that his home was automated. He had related the speakers in the ceiling to the lighting control system and called it all an Automated home. Im sure the electrical contractor had influenced this thought.~~

While h~~H~~aving an intelligent lighting control system is a part of home automation, it is ~~but~~ only one component. Likewise, while an audio system is a part of home automation, it is still just one piece of the puzzle.

The issue is that, without the complete solution, the client will find his house doesn't work as well as he wants it to. If it isn't convenient or efficient, then the lifestyle, security and sustainability benefits he was hoping to achieve

are only available with a lot of manual work, rather than the house taking care of everything on his behalf.

Ultimately, this results in either a dissatisfied client, who isn't going to refer his friends and family to your business, or a client who is constantly calling you after you thought the job was done to request changes, new features and help with issues.

~~A well-designed solution will bring together key components of the home working as one to provide a solution that fits into the lifestyle. Components include internet connectivity, structured cabling, Lighting, Security, Audio, HVAC irrigation and more… .~~

~~I was very disappointed on the clients behalf as I knew that his electrical contractor did not offer him a complete solution, that is probably because the contractor didn't know what a complete solution is himself. With the amount of money spent making this home beutiful it's a shame that the correct trade was not chosen for the job.~~

~~The right trade would have specified a Multi-room audio sytem which could be used in each room individually or all together throughout the whole home. Options like multiple sources in each room to centralized media distribution that can be heard in each room when required without the need for bulky AV amplifier in each room.~~

~~The home could have had his security system integrated with the lighting control system to switch off the lights on exit but instead he has to put the security on and remember to switch the lights off and hope all the windows are closed upstairs~~

Home automation explained~~….~~

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So if home automation isn't a cool lighting or audio system, what is it?

~~Home automation is one of those topics and buzz words that gets thrown around so much by so many different people. Its clearly a trend for the future and its creating so much confusion for Home owners. I have been involved in the Industry for so long ive heard so many people describe this topic in its most amazing way were you can see their eyes light up as they~~

describe to their colleagues how the lights will turn on and the music starts playing by them simply walking in to the room. Its

Home automation is an amazing experience that gives you a warm feeling when you come home and everything works just the way you planned it. One of my favorite experiences is when I swipe my finger at the front door and the electronic lock clicks , the lights turn on and the home greats me with the sound of my favorite playlist. The music begins to play thru the hallway and then follows me into the lounge as I unwind after a hard days work.

Its amazing how ive asked so many of my friends, relatives and customers the question "what does Home automation mean to you?" and they all answer in their own unique way. Some funny enough are confused thinking, "why you asking me this?" and others jump out of there seat in excitement as they explain what they want it to be... through experience ive have seen that there is no right or wrong answer to this question and it is true to say that it is anything you want it to be or anything your imagination dreams of. Put simply, you touch a button and something happens.

Home automation has been defined differently by many means different things to different people. To some people it's as simple as few speakers by the BBQ with a wireless remote, while and to others it's TV screens coming down from the ceiling when you enter the room and as the lights dim simultaneously the lights will dim as and the fireplace ignites to creating a romantic experience atmosphere on cold a and rainy day.. when it's cold and grey outside.

A lot of people I have worked with before being converted had an impression that it is this highly complex system that needs a lot of time and energy to install and the knowledge to maintain. This is definitely not the case and an important reason that needs to be realised that to get this to work smoothly it has to be planned correctly from the start.

So has the thought crossed your mind to ask yourself the question? "What does home automation mean to me?"

Asking yourself this very important question will help you understand what it is you are trying to achieve or what you are expecting from your automated home.

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Comment [J6]: This is all targeted at the customer, not trades

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Comment [J7]: Again, customer focus

I define h"Home aAutomation" as the coming together of many components in a hHome, Components such Security, Audio, Lighting and Air Conditioning, which work ing together and automatically respond ing and adjust ing to external events that occurto improve the owner's lifestyle. These components include internet connectivity, structured cabling, lighting, security, audio, HVAC, irrigation and more. The events they respond to

The event could be something as simple as someone pressing the doorbell or another event could be the temperature of the lounge room rising beyond a pre-set point. In an automated home, each of these events will trigger a response, whether that's cutting So another simple way to look at this is once the event occurs a selection of predefined actions will occur straight after.

Now the interesting part is choosing what will happen after the event occurs . This is an important part of the planning stage which we will look into further on in this book.

An a real life example would be your visitor will press the door bell, this may sound like a basic thing and of course the doorbell will ring, but when you include an automated solution as part of this it all changes. An automated solution could be something like this. The visitor presses the door bell and at the same time the music playing in the lLounge room will mute the sytem to will announce that there's a" visitor at the front door, or the air-conditioning or ceiling fans turning on to help cool things down.

The keys are automation and integration. The key word here are *"automatically responding and adjusting to events that occur".* Home control systems that aren't automated and solutions only offer control from the a remote device to that allow you a home owner to switch on, adjust and take control of devices in the home. Home *automation* systems From your device you could turn the lights on turn the music on but may not allow you to allow automatically turn the ceiling fans to turn on or on close the blinds to close *and turn on the extraction fans automatically* when the temperature reaches a pre-defined set-point then continue by switching the Air Conditioner on when the temperature keeps climbing. The second element to note is that a home owner doesn't simply choose one event to trigger a response and then stop, nor does a response consist of a single device activating. In an automated home, multiple events can trigger responses, and each response may call on several devices, which will adjust according to the event. In other words, the devices are all integrated with the automation system.

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~~Automated control offers superior functionality to that of Simple home control system.~~

Ultimately, all of this technology comes together~~" or the door chime will sound then the music will continue playing. As simple as it sounds it can be expanded to include many other actions that you think will~~ to make life more convenient for ~~you~~the home owner.

~~The combination of events and actions that can be thought of is endless and really upto whatever you can think of.~~

~~All these many different ideas by many different people can make it daunting and feel complicated for the everyday person just trying to enjoy their home. The industry is struggling to understand why this topic is so confusing to everyone, and its not hard to see why. The technology is growing so fast that consumers cant keep up. Their all trying to get there hands on this Hot new technology but don't know where to start.~~

~~We have all watched our fair share of TV where we have seen futuristic technology being displayed and used as part of day to day living, we have all looked at this technology being used and thought to ourselves at some stage "wow one day we will have this and it will be awesome". Although we are far away from some of these features we've seen on our favorite cartoon the Jetsons, The technology we currently have access to will amaze you.~~

~~A good Home automation system will include a key number of components including Security, Audio, Lighting, Heating, Ventilation and Cooling(HVAC). Other options from irrigation to controlling of pool pumps and water features can also be included. There is no limit to what can be controlled or included its all upto you.~~

Comment [J8]: Repetitive

~~A Great solution would be one that has been designed and been planned early on in the building process and an outstanding project would be one that has not only been planned early but one that has taken many factors into consideration. There are general questions that play a big part in a successful project and are often missed or taken for granted.~~

Comment [J9]: More consumer focused than trade focused

The secret of all good h~~H~~ome a~~A~~utomation systems is the simplicity with which the technology is used. As technology improves, it plays greater role in our everyday lives – iPhones, iPads, smartphones, and faster computers ~~with more memory you'd expect them to be making life easier~~are all constant accessories – ~~. But with so many different technologies and formats~~

but more often than not it makes life more cluttered and inconvenient than before. In a truly automated home, rather than adding clutter and noise, ~~Wouldn't life be better if~~ everything ~~worked~~ should work together with a touch of a button.

~~?~~

~~Where it starts….~~

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~~The backbone of the automated system is made up of many components all working together to achieve the desired result.~~

~~An automated system is generally designed to take control and make use of 6 main areas of technology.~~

- ~~Local Network including the internet~~
- ~~Security including access control~~
- ~~Audio and video Distribution~~
- ~~Control of Appliances around the home~~
- ~~Telecommunications~~
- ~~Management and reporting of Utilities from Water and Gas to Electricity~~

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~~Each of the main areas are broken down into their own category and each area is unique in what it can offer to an automated system.~~

~~The main backbone of any system will include some sort of structured cabling. Although there is a growing trend to use wireless technology I like to stick with copper where possible. The advancement in wireless technology has allowed more products to hit the market that work well in a retro-fit environement meaning that you will generally add a component after the home is completed and you are already living in it.~~

This is a very convenient way of upgrading a current system or even starting a new system from scratch, We do use wireless technology from time to time when we have been unable to run a cable from one point to another. With wireless technology standards always improving it wont be much longer when we will start to see more and more technologies pop up using wireless. Some of the most popular methods of wireless include Wifi, Bluetooth, Z-wave and Zigbee.

I generally try to avoid wireless where I can because im not a fan of having all these electromagnet waves so close to me all day everyday. Yes although we cant avoid whats around us From radio towers or Telcommunications towers or other rogue wifi routers in the area I still find it more soothing to know that I have at least been able to control what I can control and minimize the use of wireless around me.

Another form of technology that generally is thought of as wireless technology but actually uses the copper that already exists in the home is known as Powerline Technology.

Powerline technology relies on the Electrical wiring in the home to transmit a signal from one point to another. This helps to eliminate the need to run more cabling. Powerline technology have been popular for use with Lighting control and have improved dramatically over time, Early stages of this technology where known as X10 and A10 and more recently UPB©. UPB is a more mature technology developed with improved transmission rates and higher reliability.

The most popular uses of powerline technologies I have found are the use of Ethernet over power devices. Which allow you to transmit data or internet signals from one point of you house to another without the need for wireless. This product consists of a transmitter and receiver.

This technology just like any other has its limits or downfalls. The reliability I have found of powerline technology can be degraded by the amount of noise on the electrical line such as interference from other electrical devices. Also I have found that using multiple types of powerline technologies in the same area can create interference.

The Utilites company use a similar technology to powerline technologies to send an off-peak Signal or heart beat along the powerlines everynight. This signal is sent to and received by the Electrical water heaters as trigger to switch on during offpeak usage times.

~~This signal has been known to interfere with other powerline techlogy products in the same house. I Have seen in a few houses the lights flicker and flash randomly for 10-15sec every night when the signal is sent.~~

~~With the advantage being far more than the disadvantages I still belive This is a great technology that works well in a retro-fit environment.~~

~~I have found the most reliable way to build a backbone for your automation system is to use physical wiring layed out in a "Home Run" Configuration. "Home Run" is also known as star configuration, this is where all the cabling from each room will run back to a central location. I have found this to be the most convenient way to work with as it adds flexibility to modify and change the use of the cable at a central location.~~

~~For example you may have a cat5e/6 type cable from the Central panel to the bedroom which is being used for Internet or maybe a spare. One day you may decide to install an InfraRed distribution sytem so that you can point your remote at the wall and have the CableTv receiver in the other room change channels. What you can do with this is disconnect the cat5e/5 cable from the network router where its currently plugged in acting as a network port and after installing an IR distributer you simply move the cable straight into the IR controller. This is done all from the main panel without having to think about running new wires to the bedroom. Although this type of example can be achieved with a wireless transmitter it is not as robust and is prone to interference unlike a wired version.~~

Comment [J10]: This is a bit detailed for the introduction, so I've moved it to the body of the book when you discuss the technology behind various solutions

~~Why I wrote this book.....~~

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~~There has always been this Myth that I keep hearing amongst Builders and tradesman which influences and washes down Home owners that Home automation is a complex technology that adds thousands to the cost of new building or renovation.~~

~~Although this maybe the case for some exotic and highly Integrated systems I have found that for most homes and projects it doesn't have to be and can be very much cost effective.~~

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~~My experience working with a range of products from enterprise grade to the consumer technologies in the Information technology industry for a successful~~

~~System and Network integrator has allowed me to determine that technology needs to be Simple in order for it to be used effectively. A well-designed Project will bring forward many benefits thru the use of combined technologies working as one to provide a solution that fits into your lifestyle and your budget..~~

~~Integrated systems that are complex and interface that are not intuitive are not warmed to by the user and that will filter down to friends and family who have a bitter taste about what this product or solution can offer.~~

~~After many years in the industry designing solutions that have been complex and amazing in their outcome, to the user they are deemed complicated. This has led me to change my focus early on in my career to an approach that promotes simplicity yet provides the most benefit with the wow factor in mind.~~

~~One issue that I have come across in this market of Home Automation is that this has been thought of by many as something that can be taken care of by their electrical contractor during construction. My experience in this field has shown that taking this approach can be limiting to the future possibilities of what an Automated Home can provide.~~

~~Having grown up in a family of tradesmen and spent my most of my younger years working with my father as builder in the Construction industry i have seen how hard and costly it can be to make changes to a home that has already been renovated or finished. This exposure has shown me that a system needs to be designed early on in the building process and planned thoroughly in order to produce the best results.~~

~~In this book I will show you how a well designed solution can be both simple and cost effective. my combined experience in both Information Technology and Building and a passion for simple, convenient and quality design has brought me to write this material with simplicity in mind and will provide a great reference to what can be achieved from a simple approach. I have found through ongoing experience that the best way to describe home automation or even to explain it in simple terms would be by giving real life examples of how this technology could fit seamlessly into your day and enhance the lifestyle experience, if I try to explain this in technical terms its hard appreciate the impact that this would offer to you. Leave the details to me and ill give the examples to you of how I belive this technology could fit.~~

Comment [J11]: Moved to the end of the introduction

Why automate? The benefits

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When a client asks you to add some functionality to their home, it often feels like a headache. Couldn't they just be happy with four walls and a roof like everyone used to be?

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The truth is that, as technology develops and the idea of home automation becomes more widespread, you're going to be fending these requests more often than not.

Why? From a home owner's perspective, there are a range of benefits.

The first is convenience. Smart homes ~~Benefits of an Automated Home….~~

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~~Now that you have an idea of what home automation is and how it can be used we can start getting into the detail of why we need it and how we can benefit from this growing trend.~~

~~There are a number of main benefits that I have found from an automated system and have listed just a few to give you an idea.~~

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~~Convenience and Peace of mind:~~

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~~An automated home offers C~~can be ~~onvenience to the home owner thru many ways. Imagine having the power to~~ accessed and controlled ~~your home~~ remotely, which allows the owner ~~from anywhere in the world and being able~~ to check in on the family and home while they are travelling or at work.

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With a few clicks on ~~your~~ a mobile device~~, smartphone or tablet~~ , an owner ~~you~~ can bring up ~~the~~ security cameras, adjust the temperature, unlock the doors or adjust the lighting. With the press of one button on ~~your~~ their way out ~~you~~ they can turn off the lights and the air~~-~~conditioning and arm the security system.

The next is peace of mind. With the power to

~~One example of which I make use of the most is the~~ remotely unlock~~ing of~~ the front door, a home owner~~. When my cleaner shows up early and im still at work I can simply bring up the camera's disarm the security system and unlock the front door all without leaving the my office chair, this can also be achieved from anywhere in the world.~~

~~This simple benefit mean I don't have~~ doesn't need to give the cleaner ~~them~~ a key or leave one under the mat. This gives the home owner complete ~~to my home keeping me in~~ control ~~of~~ over who enters ~~my~~ their home and peace of mind that if they~~house and giving me "Peace of Mind" that one day if I~~ change cleaners, for example, they don't ~~I don't~~ have to change all ~~my~~ the locks.

No more leaving the key under the front mat.

Occasional I get deliveries to my house when im out at work or travelling and nobody is home to accept them. When the courier company calls me or the front door bell rings I will be alerted remotely via Email or SMS, I can bring up the camera and talk to the visitor when satisfied that the visitor is legitimate I can disarm the alarm and unlock the front door to allow them to drop off the parcel. This also offers peace of mind as I know which courier company it was the Drivers number and also I have the person recorded on camera.

I love the creativity of some of my customers, one of them requested sensor to be installed into the mailbox that allowed him to notified when mail was placed in the box. So what happens is everytime he receives mail a designiated light in the office will flash and an audio message saying "you've got mail" is played thru the music system similar to that alert he receives on his computer.

This simple solution provides convenience also thru reminder alerts. Every Wednesday at 8pm an audio message is played thru the home reminding the occupant that it is "Garbage Night" the message will remain on the touch screen until it is acknowledged by the home occupant.

People with limited mobility have also found many benefits with the use of this technology and generally turning to Home Automation as the key to living independently. For a person with limited movement they can benefit from the use of centralized control minimizing the movements required to get things done. From the use of remote controls, touch screens or voice commands they can unlock the front door and have it swing open automatically and close again once they have passed by.

The ability to view all the cameras thru the TV screen or tablet pc then unlock the door means they don't have to panic and rush to the door to see who is there. Control for the less mobile can be customized to suit the user and home occupants requirements making living at home alone easier and more convenient.

Living with an automated system has made it very convenient for me and my family thru little events that occur day to day. On occasions my wife would leave the bedroom window open in my daughter's room as she liked to air the room while she was away.

When the nice breeze comes thru the window it tends to blow the curtains around which triggers off the alarm sensor and the home automation system will alert me. I would quickly login to the SmartPhone application and could determine immediately which room was being effected. Knowing my wifes little habbits I would give her a call to ask if she left the windows open as the alarm has been triggered.

She would acknowledge that she has so from the smartphone I would isolate that zone from the system while the rest of the home remained secure. This stops the false alarm trigger continuing every time the curtain blew and would mean that we could continue on with our day without being inconvenienced to drive home to close the window. It may be a small feature but allows you to get on with your day without being inconvenienced.

Safety and Security

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With many different Security systems on the market it makes it hard to choose the one that best suits your lifestyle. I have had the pleasure of experiencing an integrated system and so have many of my customers and we can all agree that once you have experienced the power, the peace of mind and comfort of what an integrated solution its hard to believe how some many people are still living with a standalone alarm.

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Comment [J12]: Again, this is a bit too much detail here – I've moved this to a more detailed discussion in Part 1 about the possibilities

An integrated system will not also only offer intrusion detection features to protect your a home from theft but as well as will also protecting the home you from the dangers of f Fire, flooding and electrocution.. Automated homes will offer the benefits of integration with lighting, Power and Air-conditioning automatically reacting to events that occur.

A third benefit is energy management. An example of this system at work would be in the event of Fire an automated solution after detecting and alerting the occupants of fire will automatically switch on all the lighting to provide clear path for the occupants at night, the system will shut down the air-conditioning to reduce the circulation of air that feeds the fire and stop the circulation of smoke and automatically notify the authorities that an emergency situation is in progresses.

A similar example could be used in the event of flooding from a dishwasher or washing machine where sensors in the laundry could detect the water

~~levels and automatically shut off the power to prevent electrocution and shut off the mains water while alerting the occupant of the situation by means of audio paging SMS and flashing lights.~~

~~One the greatest example I find where Automation offers safety benefits are for homes that have a swimming pool. Gates to the pool area could be monitored and automatically alert the home owner that the gate has been opened, We can also go as far as introducing water movement devices that will sense movement of water similar to that movement when a small child has fallen in, this by far reduces the risk of drowning and offers the most peace of mind to the home owner.~~

~~In saying this- of course no level of automation or technology could replace the supervision of an Adult and at no times should a system be used to replace responsible adult supervision but at least we have the benefits of early detection.~~

~~Automated systems have been used to assist the elderly for many years offering safety thru monitoring and alerting. An integrated solution could be customized to the individual's requirements and setup to alert a family member or the emergency services in the event of fall or injury.~~

~~Thru the use of a pendant in the event of an injury the person could activate the duress function which would signal the automation controller to call for help, Switch the lights on if its dark and unlock the front door when help arrives.~~

~~Having been exposed to this industry for so long I struggle to understand why for just safety alone this technology is not a standard in every home.~~

~~I have seen it many times before where your electrical contractor will specify a security alarm and rave on at how well this system will protect your home with its loud siren but it stops at that. An integrated solution far outweighs a standard alarm with customized solutions that are catered to the individuals needs allowing the user to take control of their home. An integrated security system that has been designed with Safety in mind is far more superior to that of a standard system~~

~~If you're like me a frequent traveler or simply love to go on vacation with an Integrated Home Automation system you don't need to worry about hiring a house sitter the home will take care of itself alerting you of any issues that may arise.~~

An automated solution could be setup up to automatically switch on the lights draw up the window shades and play music in different rooms making the home look lived in while you are miles away and if at any time you get a sense that something is not right with the Safety of your home you could quickly bring up the camera feeds on your smart device and check in.

Most home owners with a non-integrated solution and a CCTV system that already have access to their camera's from their phone will tell you that at night it very hard to see the camera feeds when its dark, this is not an issue with an integrated system as you could remotely switch on the lights before you bring up the camera feed making poor visibility a thing of the past.

I have a little story I want to share with you. A few years ago my Father in-law had invited us away for a weekend to the south coast of NSW. We all jumped in the car and headed down south for a family trip away. The drive was about 2.5hours south of Sydney ¾ of the way into the trip we decide to take a pit stop to get some groceries for breakfast the next day. Just as we all get back in the car ready to take on the next 40min of the trip my father in-laws phone rang, he started to get frantic and was waving his arms around in frustration as my mother in-law tried to calm him down. While sitting in my car looking thru the windscreen I started to wonder what was going on we had little over half an hour left to go and he was just sitting there playing with his phone the last 30min of a trip is always the "are we there yet" moment where the kids get rowdy and you just want to get there, and here is my father in-law trying to make phone calls on the side of the road.

Not sure if you are familiar with one of Murphy's Law's. The law I refer to is the one that has been translated as "If it can happen, it will happen". I'm sure a few of you would relate to this or have had a similar experience and if you have Its pretty easy to picture this scenario.

The call that came in earlier was the Home Burglar system, If you have a security system similar to this then you definitely know the feeling. These systems have lead me to believe that they call you just to get your heart rate up, they offer no feedback or status they give you a good adrenalin boost and send you pacing up and down the side walk. Sometimes I think they should install these systems in gyms to replace treadmills, the call comes in your heart rate jumps the pounds come off, very simple workout.

Anyway as this call comes in my father in-law is frantic trying to call his son who lives a few doors down. But each time he presses "ignore" on his handset in an effort to make a call the home alarm re-dials his number and

the calls comes in again interrupting his effort to dial out. This goes on for about a minute before the system realizes that there is "no answer" and stops calling.

He manages to get a hold of his son and tells him to racing up to the house to see what is going on. In that minute the neighbor calls thru and tells him that the home alarm is screaming and it appears to be a step ladder near the back verandah. By now anyone can imagine his blood pressure is thru the roof.

When the call came thru my brother in-law is out to dinner with his wife and kids, he starts to panic and think "should I cancel the order or drive home and back", His wife is not impressed with the interruption as they don't get out much with the new born. Now my brother in-law is in panic as his father is screams down his ear for an update.

So now we got my father in law wanting to drive 2 hours home which I'm not impressed about and his son in panic racing towards the home as his wife sends chills down his spin.

I start to question my brother in-laws decision to go home, he maybe a big boy but he was heading straight into a home with no idea of what he would be in for. There could be 1,2 or 3 burglars in the house and his family is sitting in the driveway. The thought to me is horrifying; knowing that the kids are meters away from what could be an ugly situation.

So he approaches the front door all the lights are off puts the key in and turns the lock the door opens slowly, Its Dark and its quiet, all that can be heard is the sound of the alarm strobe light pulsing as it flashes. He fumbles for the light switch not knowing if someone is about to swing a bat towards him. The light turns on and it looks clear, he disarms the security system and looks at the led light in hope it would provide answers. Led light 7 is flashing he looks at the panel lid to try and identify zone 7. He heads towards the kitchen to see what the issue was he enters the room everything appears normal. He continues to check all the rooms, windows and doors everything looks secure. He heads to the backyard to see if there was a ladder that the neighbor had mentioned. Sure the ladder was sitting on the back porch but that was left there by painter the day before.

The final verdict was that it was a false alarm and everyone continues on their way. I knew for sure this unnecessary excitement and panic could have been avoided and the stress placed on everyone would have been minimal with an Automated Home solution.

~~To one of my customers with an integrated solution this is an easily dealt with situation. Very quickly they would bring out the smart phone or tablet, Connect to the home via the intelligent application and view the status of the home. The status page on the application would quickly show that "Kitchen" sensor was triggered and it can be determined that no other zone was triggered. Thru the application you could determine if the movement is continuing or it has stopped. You would be able to determine easily that if the movement had stopped in the kitchen and if it has started in any other room. This kind of information makes it very easy to isolate the issue to one room or multiple rooms helping you make a better decision about the next step.~~

~~The system is programmed to immediately switch on all the lights during a burglary, this feature will allow full visibility to the camera system and enhance the recorded image. With the camera application it's easy to bring up the live stream of the camera's and would allow you to determine that the ladder that was mentioned by the neighbor was not a associated with the alarm.~~

~~If in the event you did come home during a burglary having the lights come on automatically would give you full visibility in and around your home making the decision to enter a safer option.~~

~~Once you have been thru a situation like this its amazing how so much more relaxing it is to know that you have the power to monitor and control your home from anywhere in the world. The features associated with and automated security system you cannot live without after you have experienced a situation like this.~~

Comment [J13]: See previous comment – also moved to Part 1

~~Energy Management:~~

Managing ~~your~~ energy consumption and reducing wastage has been a hot topic for many years now and will continue to be a major struggle for many home owners as time moves on~~e~~.

In recent years there has been an ~~greater~~ increase in the amount of electronic devices that have formed part of our everyday routines in and around the home. When I was growing up we had one TV in the lounge room and now it's not un~~-~~common to have one in each room. ~~-~~I don't think I have

seen a home recently that doesn't have a m~~M~~icrowave, washing machine, dryer and multiple fridges, and we can't forget ~~to mention~~ about the laptops, smart~~-~~phones, t~~T~~ablets and more ~~PC's and their charges~~ , which constantly draw power even while ~~in~~ on standby ~~by~~. Fortunately for today's home owner,

~~As the world's natural resources are being consumed rapidly and the rising costs of living at our door step its not hard to imagine why we are heavily focused on reducing energy and managing our consumption.~~

~~It blows me away to think that fresh natural water from the sky is running out and becoming a resource that is rare. In recent years there have been many countries including my home country Australia that has faced years of drought and the calls from the Authorities to reduce consumption have been legislated. For countries like Australia gone are the days that we use to hose our driveways and leave our sprinklers running over night.~~

~~In situations like these we turn to T~~technology ~~to assist us~~ can help ~~in Monitoring~~ monitor and manage~~ing~~ usage~~. Home owners with an automated system have already taken advantage of the benefits of an Automated Home by reducing consumption and managing the usage~~ with simple techniques like ~~that~~ automatically switching off devices that are not in use, and using a staged approach to cool ~~their~~ homes in summer before switching on the ~~AC.~~air-conditioning.

At this point, you might be thinking, 'Well that's all well and good for the home owner, but it's still a lot of work for us.'

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This is where you're wrong.

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~~A staged approach is very successful in reducing energy use as it takes advantage of low power consumption devices first. I recently did an installation for a home where we setup the system to close the blinds when the temperature rose beyond the set point, If the temperature inside the room continued to rise the extraction fans in the ceiling would start to extract the hot air replacing it with filtered air from cooler parts of the home that where not exposed to the direct sunlight, the system would continue to monitor the temperature and as the temperature dropped the extraction fans will switch off and the ceiling fans will turn on to assist with circulation. At the last stage if the temperature continued to rise during the hotter months of summer the system would be over written by the A/C bringing down the temperature to the required set point.~~

~~Using the Automated technology to assist with the management of power in this scenario had immediate effects on Energy Management greatly reducing the costs associated with cooling the home.~~

~~Automated systems that integrate both lighting and Security greatly assist in the reduction of power requirements as it manages the lighting requirements while away and at home.~~

~~An automated home will take advantage of the security sensors in each room to detect if the room is un-occupied, when a room is not occupied or movement stops the sensor will send the signal to the lighting controller to begin its countdown to turn the lights off. If the movement is detected again then the sensor informs the lighting controller to reset its timer leaving the light on.~~

~~I remember clearly as a kid growing up right up to my teenage years my parents would be yelling out constantly to my brothers and I to "Turn off bedroom light" and I recall the look on my father's face as he looked at us and said "Who left the bathroom light on" then muttered after it to my mum "when will these kids learn" and mum would reply "when they start paying the bills they will start turning the lights off".~~

~~Well many years have moved on and now I have kids of my own, I knew I was going to have the same battle my folks did with the lights but by then I had learnt that kids will be kids and it was going to be a long battle. Now this is a non-issue for me as with my automated system never again do i have to remind my kids to switch the lights off in their room.~~

[Type text]

~~One of my favorite memories as child growing up was watching my mum run around like a headless chook switching off all the appliance as my father would be in the car "tooting" the horn for her to hurry up before we went. Her fear of the house burning down while we were out drove her way of life and of course in my younger days I couldn't imagine the thoughts that were going thru her mind as she visualized her home going down in flames.~~

~~Now this risk is greatly reduced with early warning detection systems and the advantages of an integrated system. As you arm the Security ready to leave your home an integrated system will automatically notify the lighting controller to turn off all the lights in the home and any appliances that you have pre-selected from the TV to the music system and from coffee machine to the toaster greatly reducing energy consumption while you're out and reducing the risk of fire.~~

~~This feature can also be used in reverse instead of leaving a light on so that you can see your way in at night the Security system will notify the lighting system to switch on the necessary lights when it is disarmed.~~

~~Lighting sensors in and around the home can be used to detect the amount of light in each room then automatically dim the lights from being On to switching Off as the lighting levels increase, a neat feature which my customers love is to have the window shades or blinds raised when the morning sun hits the window removing the requirement for lighting in the morning and allows them to take advantage of the sunlight on a winters morning.~~

~~Farmers and landscape gardeners have been making good use of automated systems and their benefits of managing water usage thru the use of controlled irrigation and watering systems.~~

~~An automated irrigation system can be programmed to operate after the sun goes down and before the sun rises, greatly reducing water wastage from evaporation. Intelligent systems are used to adjust sprinkler and drip outputs directing flow to areas that require the most water instead of blasting water evenly to all areas, this approach uses far less water than standard watering methods.~~

~~If you're a Pool owners you could relate to the fact that most of us struggle to reduce the amount of water being evaporated each day. Although a few of us have succeeded with a manual pool cover. The fact is most of us forget that we need to roll it out at the end of each swim to get the most benefit out of it.~~

~~I have heard many of my friends tell me that it's a real hassle having to put the cover on each day when they are just going to take it off again the next. Also another issue they raised was that while they have been at work the kids have tried to roll it up and ended up tangling up the roller, so now they just leave it off during the swimming season.~~

~~When you think of the amount of water that is being lost each day thru evaporation and the thought of having to leave the hose running for hours to top up the pool every few days you can't help but think of how an automated system could assist.~~

~~An integrated system will offer the functionality of automatically covering up your pool when it's not in use. At the touch of a button the pool cover will roll up out of the way greatly improving the conveniences associated with using a pool cover.~~

~~Return on Investment for home owners~~

~~Its not hard to visualize all the benefits that an Integrated Solution would provide and not make it a must for your next home. Most people think of this is just a nice to have, maybe it is. You may have seen some of the neat features at the neighbors house or know someone who may be experiencing this technology at home or work and made you think "wow. nice but not for me". Truth is how would you know if you have never lived with it.~~

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~~There is a major difference between seeing something function in a showroom and experiencing it first hand at home. This becomes a chicken and egg thing where you can't really experiencing it until you have it installed, but how do I know if I like it if I don't install it, and then what if I don't like it after I do install it.~~

~~Im sure when mobile phones came to light people thought the same thing, Although first up it was a toy for the very few that had one, but as time went buy and others started to warm to the new technology the same questions would have crossed there mind also. "how do I know im going to like it? and "will I use it if I have it". Looking back at the times of the first mobile phones and comparing it to now its hard to believe that we would ever go back to a life with out.~~

~~When we talk about Return on investment (ROI) to most people the first thing that comes to mind is dollar value when they come to sell. This is an important thought to most people who are looking to make a dollar at the end, but most people loose site of the fact that "return on investment" is also about what benefits do I get out of this, what productivity and conveniences come with this investment not just the dollar value.~~

~~I have a few friends that like to buy cars based on the brands that return the most re-sale value. Although this is what most people think about I find it hard to comprehend. When I choose my car I buy it for the purpose, I buy it cause I need it and I choose that brand cause I get a nice feeling when I'm driving it, in saying this I cant understand why the re-sale is so important unless of course you have based your career or hobby on buying and selling cars for a profit. When I buy a car I don't have the thought of making money on my mind. I bought the car because I needed to drive to work, So if I think deeper into what benefit did buying that car give me. Put simply it gave me the convenience of getting where I need to go quicker and more conveniently. I also bought the car to take the kids to school and as a recreational vehicle for my weekends away. The car has allowed me to go out at night and come home safely and protected me from rain on a bad day. In this example the car has provided me all the benefits that I bought it for so whatever I get for it at the end is just a bonus to me. I don't expect to make a profit on a bus ticket after it has been used.~~

~~So coming back to the point about "Return on Investment", ask yourself what benefit would I get out of this investment. Then drill deeper into the benefits of that benefit to really appreciate the returns.~~

~~I have found that when discussing home automation with customers there are two main questions asked:~~

How much do I need to spend?
How much Automation do I need to get the most benefit?

The truth to the matter is there is no magic figure that would provide an answer to these questions easily. It is important to understand that every solution becomes a delicate balance between personal preferences, Features and budget. After considering these 3 aspects we then look at how these will fit into your lifestyle and which option would provide the ultimate return.

Its easy to get immersed into all the technology has to offer and take the approach of "I want it all", my take on this is "great.. if you think you could benefit from having it all then why not. But really is "All" to you, to some people the base package becomes the "all" with security and Audio and others its everything that can possibly flash, beep, or be controlled from lighting, security, audio, Air to irrigation, window coverings and cinema.

So it comes down again to you, if you are somone that loves to watch a movie on a Sunday afternoon, then the solution will be based specifically on automating the lounge or cinema to automatically switch on the tv, dimm the lights, and play the movie, and it will be nice to also start up the popcorn machine while we at it. This kind of solution is what will provide you the most return from the investment.

If you are someone who travels a lot for work then maybe your biggest return would be to have the power to remotely control and monitor your home thru lighting, security and CCtv so that you can keep an eye on the home while your away.

Once you sit down with your Automation consultant to run thru the options you would need to determine which features and conveniences are a must and are highest priorities for your lifestyle and then make decisions about which features you could live without or not as important.

~~**The easiest way that I could help you with this decision would be to ask you to first look at the options put before you and organize them into order of must haves and nice to haves, Then think hard about which of these options would give you the greatest impact right now, Choose three of the options first up think about how they would fit into your lifestyle and visualize the benefits by putting you in the picture. If you can see yourself using this then put it higher in your list. If you think you may only use this once a quarter then put it lower down the list as a nice to have.**~~

~~**This would help the consultant design the solution with your lifestyle. Well-designed solutions take the lifestyle as the main priority as this would reap the most rewards and offer the highest return in terms of productivity and convenience**~~

~~Why I wrote this book……~~Busting the myth of complexity

There has always been ~~this Myth~~ a myth ~~that I keep hearing~~ amongst ~~b~~Builders and tradesmean ~~which influences and washes down Home owners~~ that ~~h~~Home automation is ~~a~~ complex ~~technology that~~ and adds thousands to the cost of a new building or renovation.

Although this may be~~be~~ the case for some exotic and highly i~~I~~ntegrated systems, I have found that for most homes and projects it doesn't have to be complex, and it can also be very ~~much~~ cost effective.

~~My experience working with a range of products from enterprise grade to the consumer technologies in the Information technology industry for a successful System and Network integrator has allowed me to determine that~~ In fact, technology *needs* to be s~~S~~imple ~~in order for it~~ to be used effectively. ~~A well-designed Project will bring forward many benefits thru the use of combined technologies working as one to provide a solution that fits into your lifestyle and your budget..~~

Integrated systems that are complex and interfaces that are not intuitive are not warmed to by the ~~user~~client, creating a bad reputation for the installer and leaving a bitter taste about home automation in general, which then filters through to family and friends.

Comment [J14]: This section is very consumer focused, and it also is a little redundant. You say that the dollar-based return on investment is less important than the other benefits they'll experience, yet you'd already discussed the other benefits, so you don't need to go into them here

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Comment [J15]: Consumer focused

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By contrast, ~~and that will filter down to friends and family who have a bitter taste about what this product or solution can offer.~~

~~After many years in the industry designing solutions that have been complex and amazing in their outcome, to the user they are deemed complicated. This has led me to change my focus early on in my career to an approach that promotes simplicity yet provides the most benefit with the wow factor in mind.~~

~~One issue that I have come across in this market of Home Automation is that this has been thought of by many as something that can be taken care of by their electrical contractor during construction. My experience in this field has shown that taking this approach can be limiting to the future possibilities of what an Automated Home can provide.~~

~~Having grown up in a family of tradesmen and spent my most of my younger years working with my father as builder in the Construction industry i have seen how hard and costly it can be to make changes to a home that has already been renovated or finished. This exposure has shown me that a system needs to be designed early on in the building process and planned thoroughly in order to produce the best results.~~

~~In this book I will show you how~~ a well-designed solution can be both simple and cost ~~-~~effective. And helping a client find that simply and cost-effective solution has many knock-on benefits for you, whether you're a developer or tradesman.

~~my combined experience in both Information Technology and Building and a passion for simple, convenient and quality design has brought me to write this material with simplicity in mind and will provide a great reference to what can be achieved from a simple approach. I have found through ongoing experience that the best way to describe home automation or even to explain it in simple terms would be by giving real life examples of how this technology could fit seamlessly into your day and enhance the lifestyle experience, if I try to explain this in technical terms its hard appreciate the impact that this would offer to you. Leave the details to me and ill give the examples to you of how I belive this technology could fit.~~

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Comment [J16]: Consumer focused

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Comment [J17]: Different topic – moved later

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Comment [J18]: May need to be refined – I added developer because of the next bit, but I've been focusing on trades throughout the book

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The developer's rReturn on investment ~~for Developers and Builders~~

~~I work with a lot of builders who every now and then ask the question what return this technology will offer to my development. The qeustion is harder to answear as I found that most builders or developers are designing and constructing a residence that they have no idea who will buy or live in it.~~

~~It makes it very hard for the Consultant to customize a design to a site that has no user input or lifestyle requirements. Im not saying that this is not possible to do but I belive you get the most benefit or return when you have a user in mind.~~

~~Recently w~~With the introduction of the affordable housing scheme around ~~the country~~Australia, ~~l~~Large construction companies, d~~D~~evelopers and builders have been focusing heavily on more multi-tenant dwellings, apartments, multi-storey units and estates to offer lower cost housing to the everyday Australian.

The problem with this is that they are all based on very tight budgets ~~that~~ to bring in the most profit, and ~~. T~~this approach doesn't allow for future technologies and the benefits associated with them. ~~The most technology that is installed on these developments is an intercom and access control to the basement car park.~~

~~With Govt funding and assistance to provide more housing the smaller private builders and developers are also takeing advantage and we are seeing more Duplex sites, Town houses and multi-story Units than ever before.~~

However, with all of these developments going up, in the not-too-distant future supply is going to overcome demand, which means prices will go down. Rather than buyers eagerly snapping up each property as soon as it comes on to the market, the same buyers will be able to leisurely compare properties to find the best deal. Soon your only option will be to ~~It makes me think about return on investment with all these empty development sites on the market, with so many units, duplexes and townhouses on the market how can a builder get a return with all this competitions and still be profitable.~~

~~At any time that a block of units my come onto the market another 50 will be completed and ready for sale, making it very hard for developers to~~

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~~control the price as they are all selling cheap as possible to~~ undercut the prices at the development~~sale that's happening~~ down the road.

But what if *your* development had a special feature than set it apart from all the others?

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T~~My answer to this is to introduce t~~he smart-~~-~~home concept is one way to make your ~~into~~ development ~~site~~site stand out. It will make your units or apartments or town houses much better value for money, which means your properties spend less time on the market, and you make your profit faster.

~~Factoring in Home automation to your next development will make your units stand out from the others especially the ones down the road from your site.~~

~~When a potential Buyer is browsing the realestate web sites they like to compare different properties against each to see which one offeres most and is best vaulue for money. They tend to look for features that offer convenience like being close to transport, shopping, and schools, they like to ensure they have off-street parking that is secure and maybe some entertaining space.~~

~~So what makes your property stand out, When a developer chooses a site for their next project they have researched the requirements and ensure that the above is part of the development to ensure maximum return from the re-sale. If all developers are looking for the same benefits your site become just another property that is flooding the market.~~

~~Give your potential buyers something that differentiates your property from the next with the conveniences of home automation but also offer the choice to personalize the solutions after purchasing.~~

~~When the potential buyer or investor is browsing the realestate sites for their next investment they can list the features available and they can see that this property has factored in the future technologies and the lifestyle benefits that come with it. making the choice easier to choose your property against the other shortlisted ones.~~

~~A simple solution that you may offer would be Security, lighting and Audio, they would have the power to check on their unit thru remote access, be energy efficient with lighting control and have the power to entertain the guests with audio that follows them from the kitchen to the verandah.~~

~~For the budget orientated developers it would be wise to pre-wire the home to a basic solution specification so that when the buyer has moved in they will have the choice of upgrading the system to meet their requirements.~~

~~Simple, Cheap and convenient…~~

~~Through my years of experience I can tell you that when you focus the design on budget instead of the occupants lifestyle the return is much less. That is not to say that you wont get a nice system, but you will get a system with limited features.~~

~~Solutions that factor in the lifestyle as number one priority and a solution that fits seamlessly into the users day to day running offer the greatest return on investment.~~

~~When the solution becomes part of everyday the rewards are greater, a user who experiences a greater lifestyle reward will pay whatever is necessary to live by the standard they have created.~~

~~The secret of all good Home Automation systems is the simplicity with which the technology is used any well designed and implemented Home Automation system will make your life less complex and stressful. It can save you energy and give you peace of mind.~~

~~In order to achieve greatest benefit from an Integrated system you need to spend the time with your Automation and audio/Visual contractor ensuring that you have covered the requirements of what you are trying to achieve.~~

~~The costs depends on how well the system is planned from the start and whether the benefits have been~~

Comment [J19]: Very repetitive – you've already made the point

The tradesman's return on investment

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If you're a trade working on new builds or renovations, you too can experience the benefits of home automation.

What if, rather than pushing a client's enquiry about energy management or security automation to the side, you were able to give them an educated answer about their options? What if you were able to introduce them to an experienced automation consultant in the planning phase of the build?

First, your client will feel heard. They'll feel like you understand what they are trying to achieve, and that you're willing to support them in the process.

Second, if you're speaking to a potential client, you've immediately differentiated yourself from all the other trades out there who don't have a working knowledge of this technology and put it in the too-hard basket. If automation is important to these clients, they are far more likely to choose you for their project.

Third, by having knowledge about the relevant technologies up your sleeve, and by working with an expert in the automation space, you and the client can get clear on their requirements early in the process. This means fewer last-minute changes, no rewiring after the plasterboard's gone up, and no call-backs for changes once the build or renovation is complete. From your perspective, the project stays on time and on budget, so you can walk away with the profit in your pocket and get to the next job on time.

This creates a smooth process for you and the client. They are happy, because they got everything they wanted on time and on budget. You are happy because there were no last-minute surprises, changes or complications. And because you have had such a great working relationship, they are more likely to send their friends and family to you in future.

Ultimately, working with your clients on their home-automation goals ensures that you get more business.

About this book

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This book is designed to give you an overview of this 'automation thing' so that you can answer your clients' questions, find the right partner for your projects and deliver what your clients want.

To achieve this, rather than giving you the technical ins and outs of automation systems and how they work, I've focused on three simple things you need to nail to deliver your clients' desires:

1. Build the dream

Just as it's the architect's responsibility to inspire a client about the design for their home, I believe it's the responsibility of the architect, builder and trades to inspire their clients about the possibilities of home automation. In this section I'll cover the four main benefits clients are looking for in home automation systems, and give you plenty of examples you can use to build your clients' automation dreams.

2. Get educated

~~1.~~ Now that your clients are excited, they're probably going to start asking questions. While you don't need to be an automation expert, having a high-level understanding of what's involved will both build your credibility and get them off on the right foot. As h~~H~~ome a~~A~~utomation consists of many components ~~all~~ working together to ~~achive~~ achieve a set of pre-defined outcomes~~. Home Technology is all the components that are part of the Automated Home.~~, in this section I'll discuss the different components involved, including the system, the technology and the connected features.

~~2. Components range from IP enabled devices, Wireless devices, Serial connected devices and Hardwired devices which use structured cabling throughout the home.~~

~~3. Components of an automated home include:~~

~~4. Audio~~
~~Lighting~~
~~Security~~
~~Hvac~~

3. Get help

The final stage is delivering on your clients' dreams, and to do this well, you'll need the right help. In this final section I'll share why your electrical contractor isn't the answer, how to find the right automation consultant, and what to expect once you start working together.

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Once you've covered each of these areas, you'll be able to not only respond to any automation requests your clients have, but to deliver above and beyond their expectations. The ultimate result? Better client relationships and more referrals for your business.

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