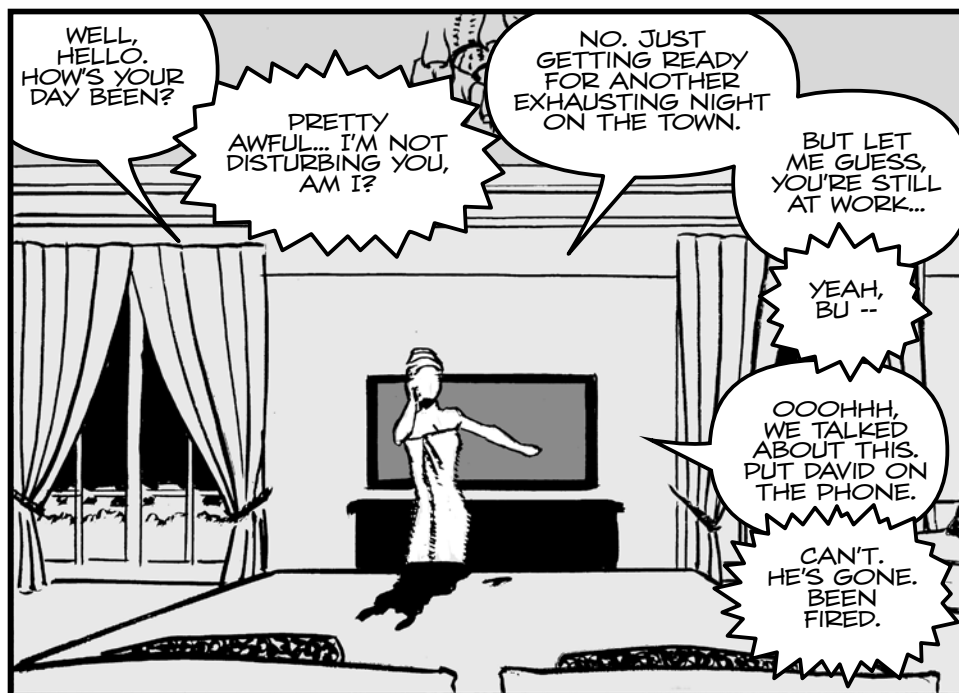


CHAPTER TWO









WELL, HELLO. HOW'S YOUR DAY BEEN?

PRETTY AWFUL.... I'M NOT DISTURBING YOU, AM I?

NO. JUST GETTING READY FOR ANOTHER EXHAUSTING NIGHT ON THE TOWN.

BUT LET ME GUESS, YOU'RE STILL AT WORK...

YEAH, BU --

OOOHHH, WE TALKED ABOUT THIS. PUT DAVID ON THE PHONE.

CAN'T. HE'S GONE. BEEN FIRED.



WHAT?! SO WHAT DOES THAT MEAN ABOUT YOU?

THEY GAVE ME HIS JOB.

YAYYY. ABOUT TIME.

NOW DO WHAT ANY HALF DECENT BOSS WOULD DO AND GO HOME.

TIME TO START DUMPING YOUR WORK ONTO SOME POOR LACKEY.



MAYBE. NOT YET.

YOU DON'T SOUND TOO HAPPY ABOUT THIS.

I DON'T WANT TO BE RESPONSIBLE FOR THE WHOLE DEPARTMENT.

I'VE GOT UNTIL MONDAY TO COME UP WITH A NEW PLAN.



OR YOU GET TO FOLLOW DAVID OUT THE DOOR...

ALONG WITH EVERYONE ELSE!

I WAS HOPING TO AVOID THIS TYPE OF RESPONSIBILITY.

OH, GET OVER YOURSELF. THAT WAS LONG AGO. IT DOESN'T MATTER ANYMORE.



IF YOU REALLY DIDN'T WANT TO DO IT, YOU COULD'VE LEFT WITH DAVID.

SOMETIMES YOU JUST NEED A LITTLE PUSH.

EVEN IF IT'S OFF A CLIFF?

MAYBE. BUT AT LEAST YOU KNOW YOU'LL HIT THE GROUND AT SOME POINT.



NOW THAT'S A CHEERY THOUGHT.

HERE TO HELP.

I NEED TO GO NOW, WE'LL TALK MORE ON WEDNESDAY, OKAY?

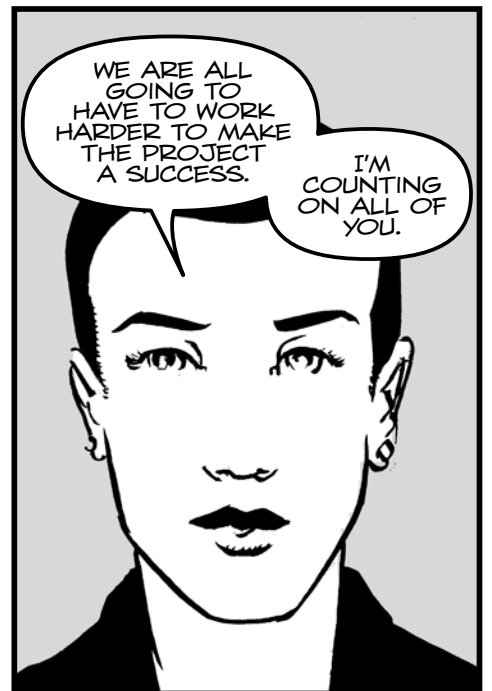
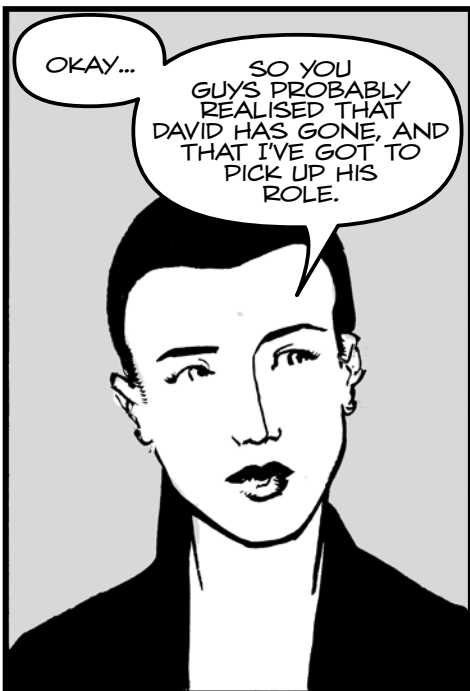
YEAH...

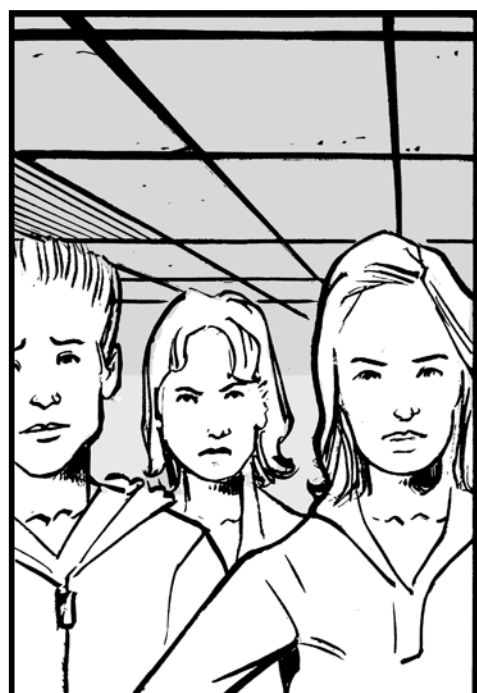
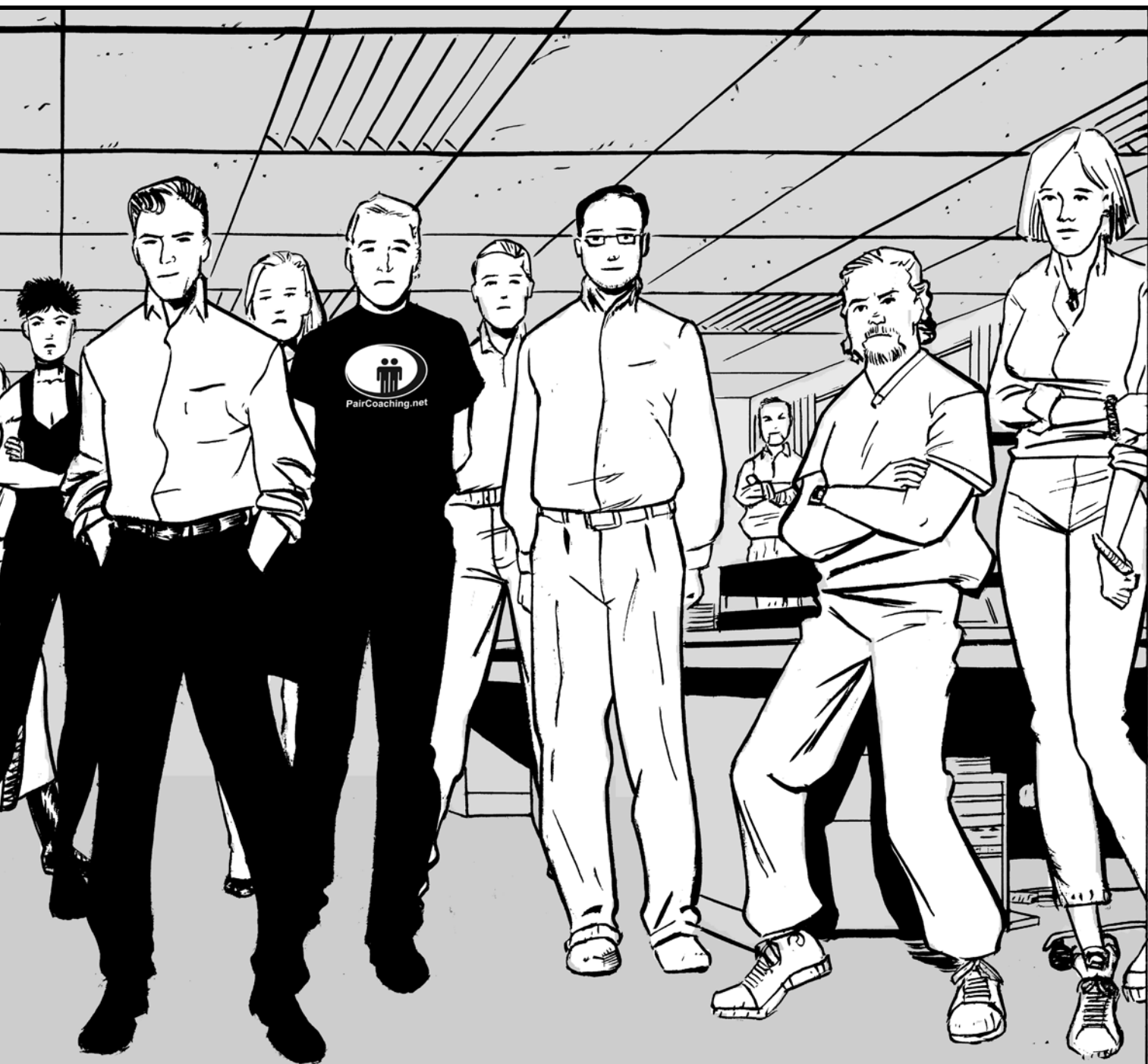
DON'T WORRY ABOUT IT. THIS CAN ONLY BE A GOOD THING.

SEeya.





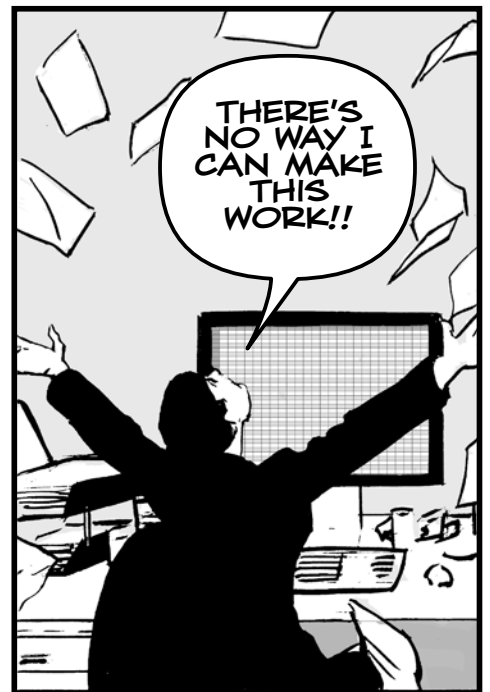
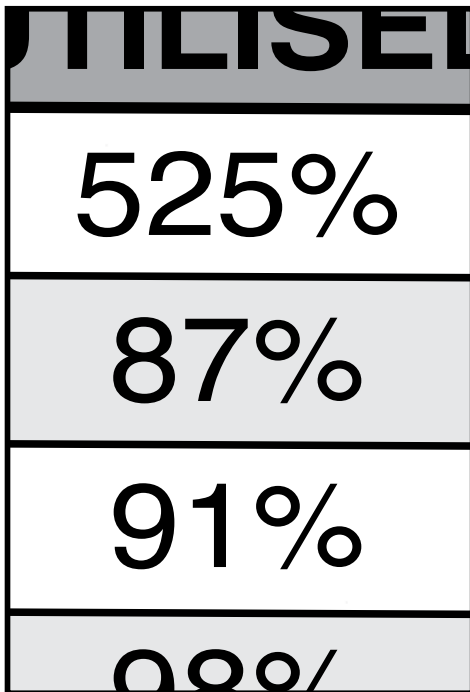
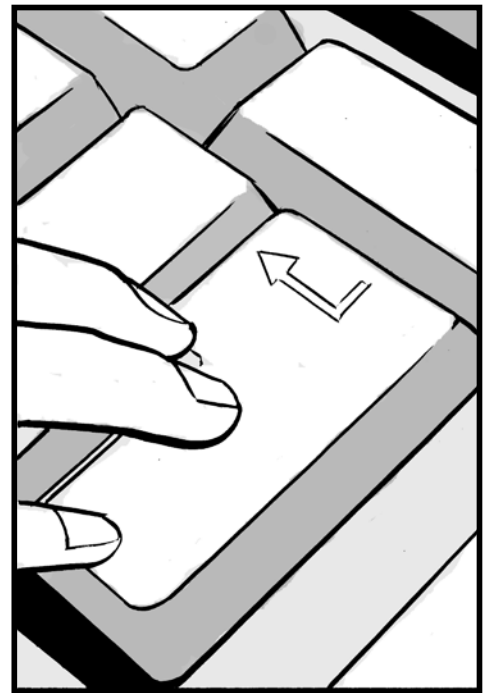


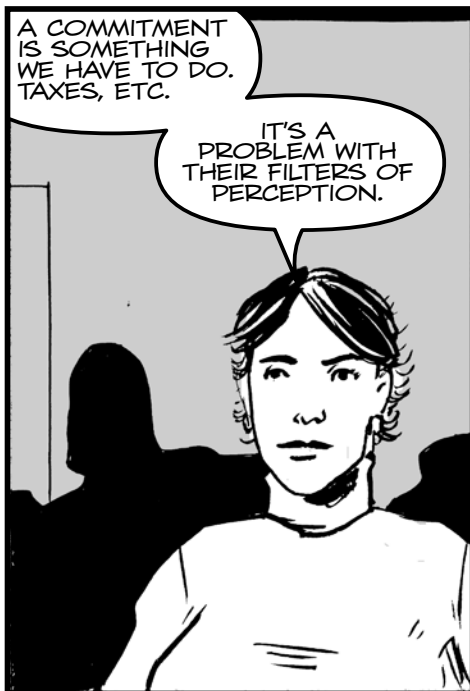


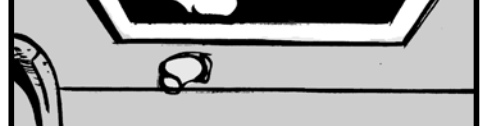
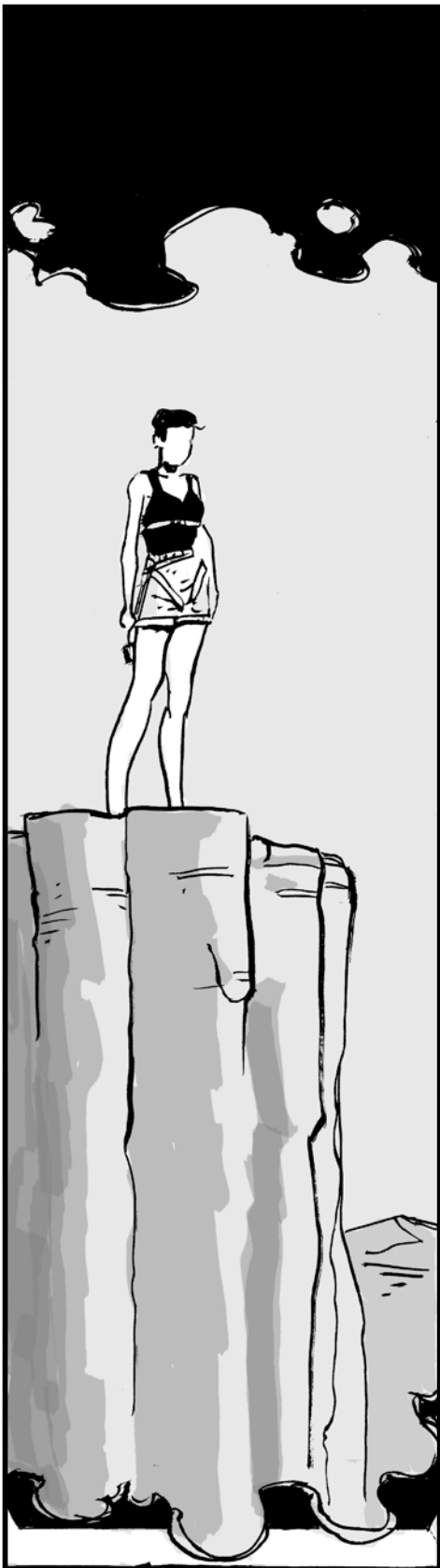


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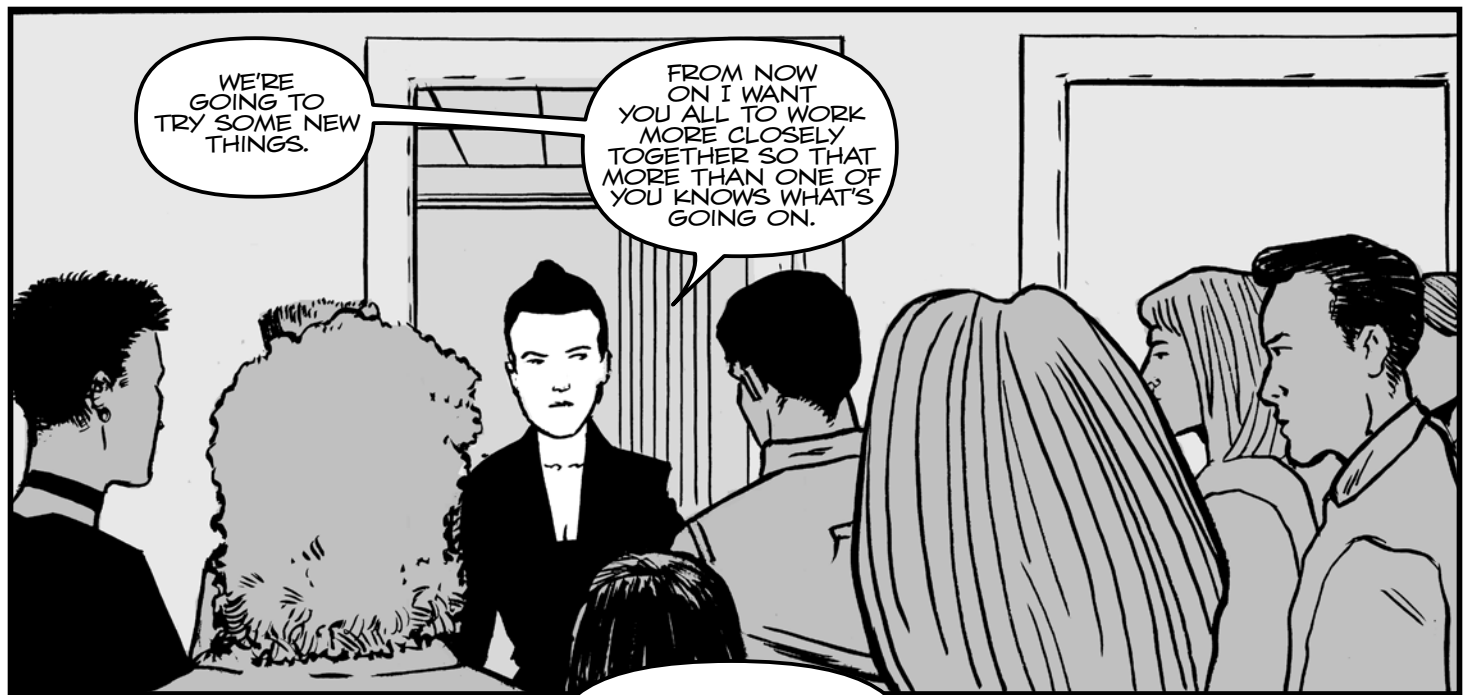












WE'RE GOING TO TRY SOME NEW THINGS.

FROM NOW ON I WANT YOU ALL TO WORK MORE CLOSELY TOGETHER SO THAT MORE THAN ONE OF YOU KNOWS WHAT'S GOING ON.



WORKING BACK FROM THE DEADLINE, I NEED YOU TO START SOME TASKS EARLIER THAN I THOUGHT...



WE NEED TO STOP WORKING ON THE TECHNICAL DEBT STUFF --

-- AND IN ORDER TO MAKE UP THE TIME, I NEED MOST OF YOU TO WORK A FEW LATE NIGHTS --

-- AND THE WEEKEND.



I'M NOT HAPPY ABOUT THIS EITHER. I'M GOING TO HAVE TO WORK AT THE WEEKEND AS WELL.

28th October

Wednesday

Dear Susan,

I had a really great lunch with Lilly today. She was telling me about real options again. I've ignored her in the past but currently I feel in the need of some options... pun intended.

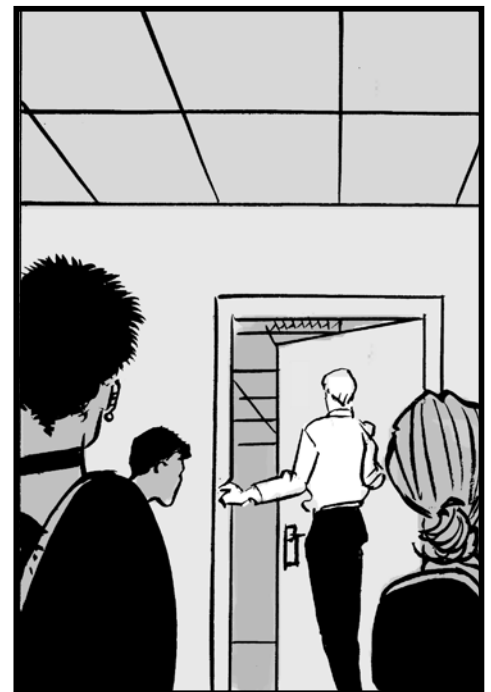
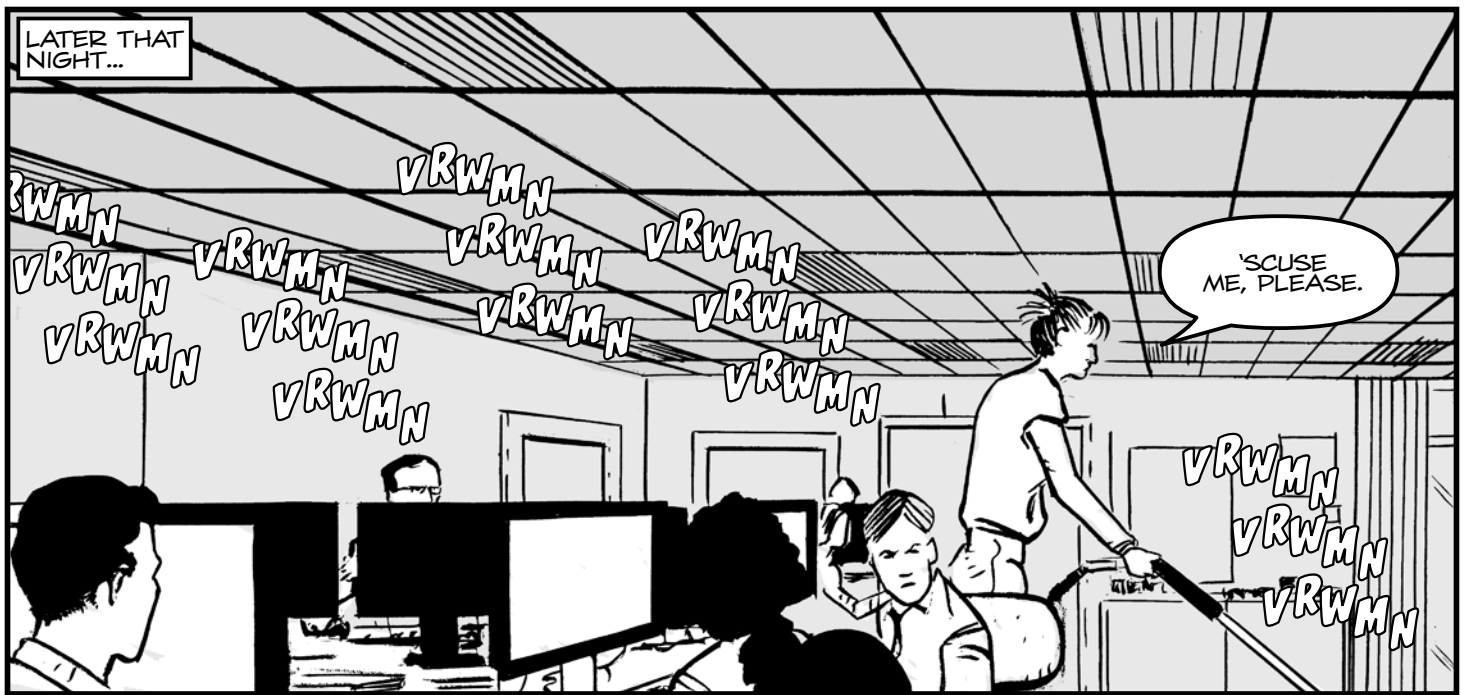
Lilly said that the most important thing is to understand the difference between options and commitments, and when an option is not an option. She said that climbing down a rock face was a commitment. However we can turn that commitment into an option by taking a rope with us. She said that the option needs to be properly tested. Climbing down a rock face with a rope that's not secured was the same as climbing down without one. In order for the commitment to be reversible you need to tie the rope to something at the top and then you can climb back up again. In effect, although the rope provides an option, it is not an option if we start to climb down without the rope tied to the top.

We discussed all sorts of things that were really options rather than commitments. For example tickets (plane, concert and sporting events). Commitments were things like tax, children and dying... no offence. Funnily enough plane tickets are a commitment on the part of the airline. They are committed to transporting you, you have the option to go.

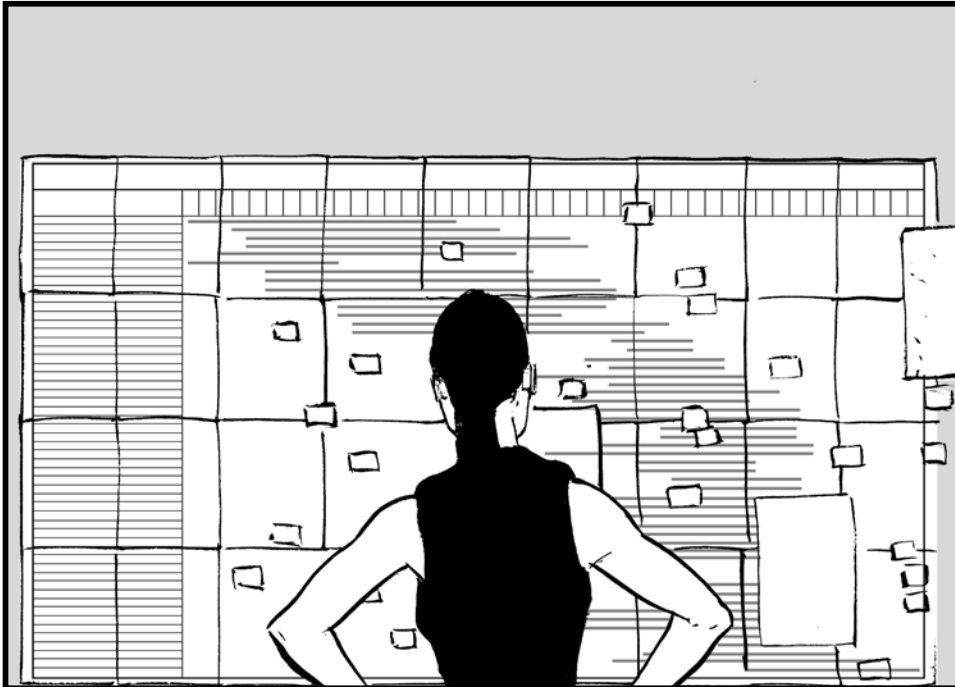
I explained how I was working out the critical path of our project. Effectively the duration of those dependent tasks that specify the earliest date we can finish the project. Lilly seemed bored.

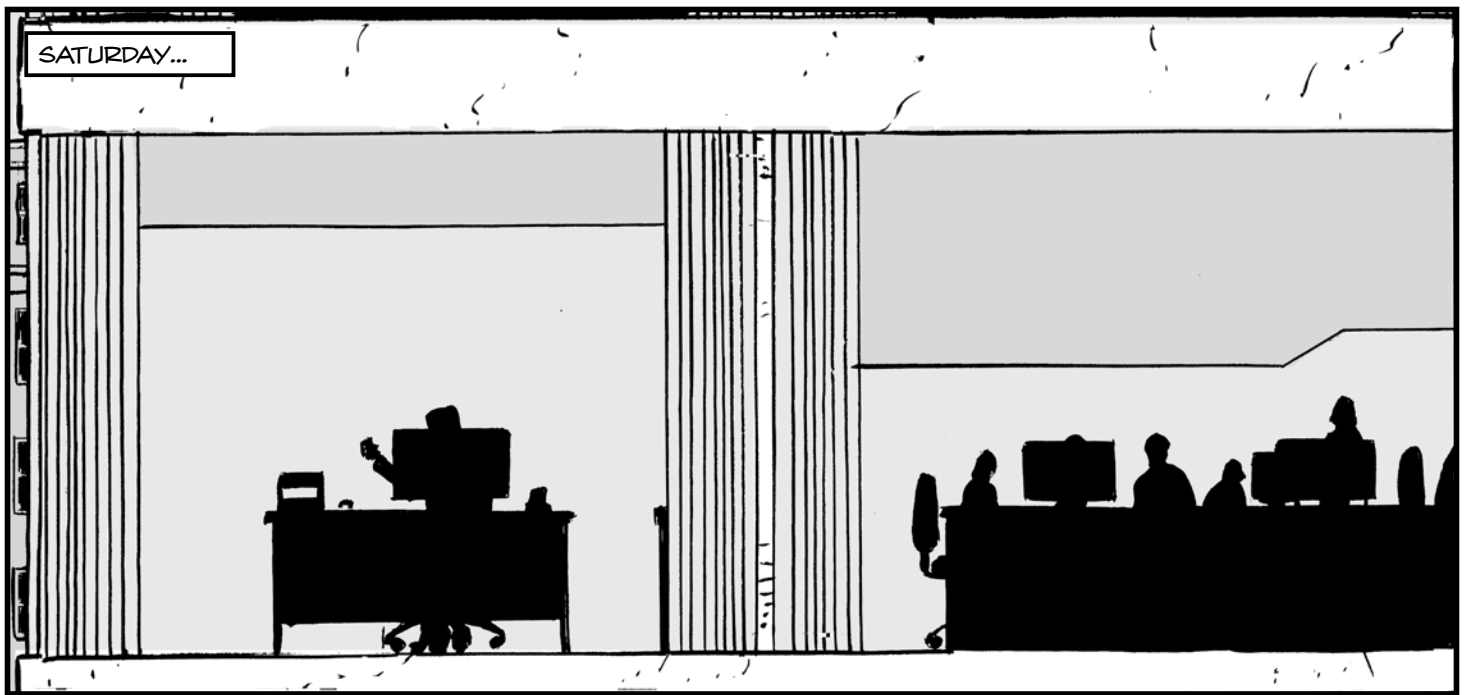
I finally get "Technical Debt". The guys at work go on and on about it as if it's this all-important thing. Anyway my head was spinning from all the talk about "Options", "Expiry Conditions", and "Commitments", and Lilly was talking about "technical debt". I did not hear all she said but she said it's really motivating for a team to feel they are doing quality work. So that's it. The purpose of technical debt is to motivate the team. Important in many cases but perhaps not in our case when we have really important deadlines.

Good night Susan. I'm tired so going to keep it short.

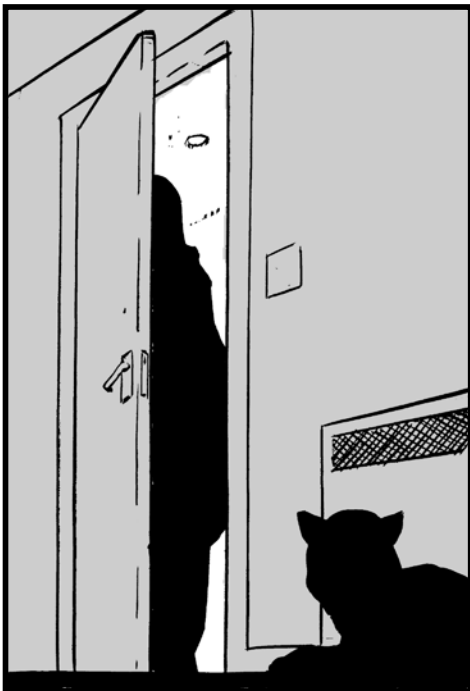


EVEN LATER
THAT NIGHT...

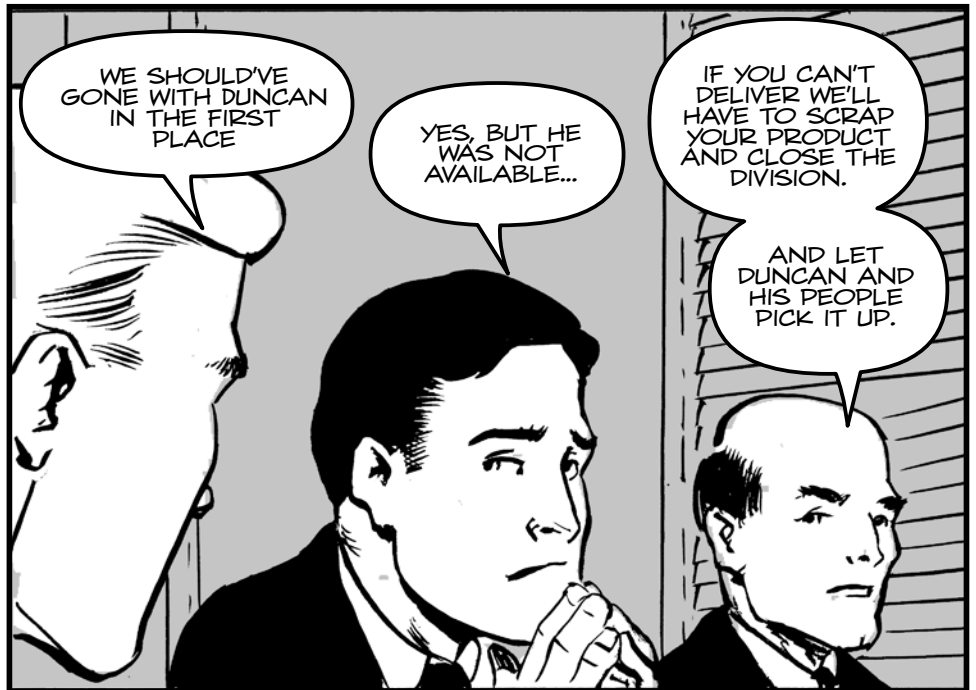












BLOBS

RANDOM MUSINGS - LILLY RANDALL



Types of Options

Earliest use of options

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Options are not new and Mother Nature is one of the biggest users. The earliest documented usage of real options is the fossils from the Cambrian Era. During the Cambrian Era there was a huge amount of biodiversity. Gradually many of these diverse organisms died out. The diversity was so huge that it is known as the Cambrian Explosion. Quite literally, the conditions on Earth resulted in life creating lots and lots of options.

In our world there are roughly three kinds of options:

- Financial options
- Embedded options
- Real options

Financial Options

When people think of options, they normally think of financial options. Financial Options famously contributed to the "Tulip" bubble in Amsterdam many centuries ago. In the 17th century tulips were very popular in the Netherlands and the demand rose so high that traders wanted to secure the tulips in order for them to be able to sell them. So they bought the right to buy tulips at a later date for a specified amount. This led to a perceived higher demand and a highly speculative market that ultimately crashed.



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Financial options has been around for many years but they only really came to the fore when Fischer Black, Myron Scholes and Robert Merton published their famous formula for determining the value of an option in 1973. Since then, the markets for options have grown and grown. This growth has provided the impetus to create other derivative markets such as correlation based products like Collateralised Debt Obligations (CDOs). The invention of the Black Scholes equation spawned an entire industry. The key thing about a financial option is that the two parties entering into the option (the buyer of the option, and the seller of the option who takes on a commitment) do so in the understanding that they are entering into an option. The buyer willingly pays a premium for the option, and the maturity / expiry of the option is specified in the options contract.

Embedded Options

A second class of option is the embedded option. An embedded option is an option that occurs in a legal contract, which was NOT specifically intended to be an option. This is a clause in a contract that allows the buyer some flexibility as a kind of service. The seller and the buyer are often unaware that this structure is an embedded option. The seller does not know they have given away an option for free just because it does not look like an option.

The option can be very valuable and the maturity of the option may or may not be specified.

It is quite likely the option buyer does NOT pay a premium for the option.

Examples of embedded options include:

- **Operational Tolerance in Oil Contracts.** Contracts for physical delivery of oil contain an operational tolerance which is a fancy way of saying that both parties do not know which oil tanker (which vary in size) will be used to pick up the oil. To accommodate this variance oil contracts allow for a variable amount to be picked up, for example the contract would be for 100,000 barrels plus or minus 5%.

If you read this same contract from an options perspective, the plus or minus 5% means the contract is really for 95,000 barrels plus an option to buy a further 10,000 barrels.



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If the price of oil has gone up above the price in the contract by the time the tanker picks the oil up, the buyer can buy the extra 10,000 barrels cheaper than the current market price. And if the price has gone below the contract price, the tanker takes only the minimum 95,000 barrels.

- **Phased contracts.** Contracts that contain a specified price for which subsequent goods and services can be bought for are called phased contracts. For example, an IT contract with a specified phase 2 allowing the buyer to buy the second phase at a set price. The buyer can see how much phase 1 cost and potentially change suppliers for phase 2 if they think they can get it cheaper. Alternatively if the cost is more than they thought, the buyer can use the offered price for the second phase.

The Black Scholes equation or one of its many children can be applied to the valuation of an embedded option, but may not always be appropriate. This can happen when the underlying assumptions of the Black Scholes formula are not all valid, for instance when there is not a single correct price of an underlying asset of the option.

When an expert trader of options identifies an option embedded in a contract, they will price the option separate from the rest of the contract. Understanding this difference between the “market price” and the “market price adjusted for optionality” can be used to create a (market) risk free profit known as an arbitrage. The trick is spotting these options as they are rarely called options.

Real Options

Real Options are options that exist outside of legal frameworks. They are the choices we have in the real world. Black Scholes and its derivative cannot be used to value real options. However, some of the things we know from financial mathematics mean that we can say three things about real options....



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Options have value

Not just the value of the benefit received (intrinsic value), but also the fact that you still have an option has value above the intrinsic value. Being able to choose later is valuable.

This value is higher when there is more uncertainty.

Options expire

At some point the option is no longer available. It expires either based on time passing or that other events have happened making it no longer possible to use a particular option. The most important thing to keep track of with real options is the expiry condition(s). Under what condition is an option no longer available.

Never commit early unless you know why

Committing to an option is when you decide to do something and it is no longer optional, but an obligation / commitment. Making a commitment destroys options to realize some value / benefit. With real options it is important to understand why you destroy one thing to create another. It is not about committing as late as possible as that might expose one to higher and unnecessary risks. It is about gathering as much information in the time available and trying to push to expiry conditions to a later date or knowing why you commit earlier than the expiry.

Real options are literally everywhere. Anything you can do and don't have the obligation to do is a real option: phoning a friend, buying a house, finding a new job, walking up to a stranger, travelling to Cuba.

As soon as you understand this, you'll see them everywhere. No worries, relax. You don't have to manage them all, just the ones that are most important to you.

Seeya next time -
L



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