THE ADVENTURES OF DUB DUB

DOUBLE TROUBLE

DUB DUB MEETS HER DIGITAL TWIN

Deloitte Digital
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1. Download Virtual Factory by Deloitte from the App Store or Google Play.
2. Open the app and point your device at each page for an augmented reality (AR) experience.
3. Explore the Digital Thread!
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Explore the Digital Thread!

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Created and AR enabled by: Bully! Entertainment
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Illustrations: Adam Szary
FIRST ONE ACROSS THE FINISH LINE!

THIS’LL BE EASY! LIKE WATER OFF A DUCK’S BACK.

ON YOUR MARK, GET SET, GO!

SPLASH!

Uh oh...

DON’T YOU WANT TO PLAY WITH DUB DUB, JAKY?

NAH, SHARKY’S MY NEW FAVORITE...

I JUST GOT OFF TO A SLOW START. BEST TWO OUT OF THREE?

...I FEEL LIKE A SITTING DUCK.
SO WHAT AM I TROUBLESHOOTING THIS TIME? YOU HAVING SUPPLY CHAIN ISSUES? WANT TO BRAINSTORM NEW PRODUCT IDEAS?

NO, NO. NOTHING LIKE THAT. YOU'RE JUST GETTING SOME SCHEDULED MAINTENANCE.

MAINTENANCE? FOR WHAT? EVERYTHING'S FINE...

HELP WITH BRAIN FUNCTION.

IT'S PART OF MY PROGRAM OF SELF-OPTIMIZATION! IT'S THE FUTURE, DUB DUB. EVERYONE SHOULD STRIVE TO BE BETTER -- EVEN YOU!

YEAH... BUT YAK GHEE?

IT'S FAILING AND THAT'S WHY YOU CAN'T PADDLE STRAIGHT ANYMORE. BUT YOU'LL BE GETTING A MUCH BETTER NEW ONE!

THAT'S A PROBLEM, I TURN A LITTLE TO THE RIGHT? THAT'S WHAT MAKES ME UNIQUE!

ALRIGHT, HERE'S WHAT'S HAPPENING DUB DUB - YOUR FLIPPER NEEDS TO BE REPLACED.

HI, DUB DUB! LOOK WHAT WE MADE FOR YOU -- A NEW FLIPPER! YOU WON'T LOSE ANOTHER RACE AGAIN!

HOW DID SHE KNOW I LOST??
I promise this won’t hurt a bit...

Yeah, its flipper really needed changing out. Amazing it could paddle at all.

“IT?” I’m an ‘IT’ now?

Dub dub, did you know you’re part of a revolutionary, new manufacturing process? You were created by utilizing the Digital Thread!

What’s a Digital Thread?

Every phase of a product’s life – from initial conception and design, through manufacturing and virtual testing, to real world function, are linked by the digital thread.

Every product is somewhere on the digital thread.

Even once out in the real world, the digital thread still connects the product to the manufacturer, sending back information in real time about how its parts are functioning and its overall performance.
Sensors? You mean, I've been bugged? All this time you've been tapping my lines?

Well, that's not how I'd put it. But yes, we've been monitoring you. To make sure you're doing okay, and optimize your performance.

All this time I thought that was a birthmark...

Is that...a tinfoil hat?

Maybe...

Anyway, the digital thread is an endless, flowing loop of data between design, manufacturing and real world function...which returns to design, new modification, and improved function...over and over and over.

And you're part of this circle of life!
YOUR FLIPPER WAS FAILING. WE KNEW WE WOULD NEED TO IMPROVE THE DESIGN TO PREVENT THIS FROM RECURRING...

CIRCLE OF LIFE?!
I KNOW WHAT THE CIRCLE OF LIFE IS!
ARE THERE PREDATORS HERE?

YOUR FLIPPER WAS FAILING!

WHICH WE WERE ABLE TO TRY OUT BY DOING SIMULATIONS IN OUR VIRTUAL TESTING SPACE!
Based on the results of the incredible virtual testing with your digital twin, further optimizations to the flipper's design were made to improve performance.

Soon we had a few different design prototypes to work with...

Um, no. We're all here to help you. Especially your digital twin! She's the key to all of this! Your digital twin told us your flipper needed to be replaced!

Then we were able to quickly manufacture your new flipper in our smart prototype lab!
waIT, whaT?
YoU'Re ReAL?
BuT Now, IT's TIMe foR yOu To MeET yOuR sIsTeR…OLa, yOuR DIgITaL TwIN!

Sister!
Of coURSe I'M ReAL! As ReAL as yOu!

waIT, WHAT? YOU'RE REAL?
BuT... YOU'RE IN THERE.

AND yOU'RE OUT THERE. WHAT MAKES yOU so SURE THAT'S NOT THE SIMULATION? THERE'S A LOT OF EVIDENCE TO SUGGEST IT IS, YOU KNOW.

yOU'Re IN THERe. AND yOU'Re oUT THERe. whaT Makes yOU so SuRE ThaT's NOT THE sIMuLaTION? TheRe's a LoT of evIdeNCE To sugGesT IT Is, yOU kNOW.

DOn'T THINK ABOUT IT TOO MuCH. I'M jUsT so GLaD To MEET yOU!

AND yOU'RE OUT THERE. WHAT MAKES yOU so SURE THAT'S NOT THE SIMULATION? THERE'S A LOT OF EVIDENCE TO SUGGEST IT IS, YOU KNOW.

A COMPUTER SIMULATION INSIDE OF A COMPUTER SIMULATION, AND THAT WOULD BE... WAIT.

DOn'T THINK ABOUT IT TOO MuCH. I'M jUsT so GLaD To MEET yOU!

I'VE BEEN WAITING so LOng FOR THIS MOMENT. NOW WE CAN BEGIN OUR JOURNEY TOWARDS BEING OUR BEST SELVES, TOWARDS OPTIMIZATION! I HAVE so MANY IDEAS!

wE CAN Be LIGHTER, FASTER, STRONGER. wE CAN DO IT! SAY IT WITH ME: LIGHTER, FASTER, STRONGER!

ThAnKS, cLaRKE! I wAs TALKING To DuB DuB THOUGH. SAY IT!

bUt... you'RE IN THERE.

ThAnKS, cLaRKE! I wAS TALKING To DuB DuB THOUGH. SAY IT!

wE CAN Be LIGHTER, FASTER, STRONGER. wE CAN DO IT! SAY IT WITH ME: LIGHTER, FASTER, STRONGER!

wHERe IS yOUr BRAIN FEELING THE SaME? yOU Want TO BE LIGHTER, FASTER, STRONGER?

DOn'T THINK ABOUT IT TOO MuCH. I'M jUsT so GLaD To MEET yOU!

DO NOT THINK ABOUT IT TOO MUCH. I'M JUST SO GLAD TO MEET YOU!

I'M ReAL. YoU'RE The SIMuLaTION. BECAUSE IF yOU WERE ReAL, AND I WASN'T, THEN yOU WOULD BE...

I Love IT! Kinda.

HOr'S ThaT yAk GHeE?

yOUr BRAIN FEELs SHaRPer, DOESn'T IT?

SOrT Of SHaRP?

yOUr BRAIN FEELs SHaRPer, DOESn'T IT?
Alright everyone, now we're going to do the final step - physical, real-life testing of the new flipper! The digital thread in action!

Your new flipper! It's a masterpiece, if I do say so myself. (I know everything about you, by the way)

You're gonna freak over this.

What?

Excuse me?

We're twins! I know everything, like that your motor shakes when you try to go fast. Clarke doesn't know yet, but I do. But don't worry, I already got a fix in mind...

Go! Dub dub! Go!

EXPLORE IN AR

Yay!
I MEAN, I GUESS SO…

GOOD! THEN YOU’LL LOVE THE THINGS WE’VE GOT PLANNED FOR YOU!

YOU’RE PLANNING MORE THINGS?

WE THINK WE COULD MAKE SOME OTHER OPTIMIZATIONS, DUB DUB. SO YOU CAN BE YOUR BEST SELF AND LIVE YOUR BEST LIFE!

IT’S GONNA BE SO GREAT! OLA IS SHOWING ME HOW TO BECOME MY BEST SELF, TOO!

I KINDA THOUGHT I ALREADY WAS— ME TOO!

LIGHTER! FASTER! STRONGER! YAY!

I DON’T THINK ALL THESE IMPROVEMENTS ARE NECESSARY. AM I REALLY THAT FAR FROM OPTIMUM?

YOU KNOW, WHAT’S FUNNY IS, I’M NOT EVEN HUNGRY! THIS INTERMITTENT FASTING IS AMAZING. SO GLAD OLA TOLD ME ABOUT IT! 16/16/8, OR WAS IT 8/8/16? OH WELL, DOESN’T MATTER.

OH. GOOD. BUT LISTEN, DO WE REALLY NEED TO—

HOLD THAT THOUGHT.

YOU DON’T ACTUALLY KNOW EVERYTHING, YOU KNOW. SHE’S NOT EVEN REAL—

I CAN ALREADY TELL MY BODY IS MORE EFFICIENT. I MEAN, I HAVEN’T EATEN SINCE LAST NIGHT, AND I FEEL GREAT!

SWISHHH!!!
So, really it's kind of an intermittent stuffing your face approach?

MMMMM
CRUNCH!

GLUG!
SLUP!

NO!

Clank!
Clank!

ZZZZZZZZZZZZZZZZZ

AAAAAAAAAAA!!!
I am? I don't think it's on-brand for us to be losing races to turtles.

Okay, team. I've put together a little presentation on some things we might able to improve, going forward.

Okay. firstly, I dunno, maybe a little less day drinking?

It had fruit juice in it.

We're twins, remember? Whatever you do shows up on me, and you're ruining my bod for digital burning man. We need, I need, you to get more serious about training. Remember, you are an elite athlete!

Moving on!

High intensity interval training! core work! Blood flow restriction exercises! You start tonight!

Uh...tonight's not good. My Netflix queue is really jamming up.

Okay, tonight's not good. My Netflix queue is really jamming up.

One: reduce drag! we can use a different finish so we can move through the water more easily, and modify our hull to improve hydrodynamics. maybe a little more concave, to create lift?

Two: reduce weight!

I believe the relevant word here is, "turtle." We win races. That's our brand. Winning! I see four targets for optimization to help us accomplish that.

It was a sea turtle. They swim pretty fast.

We're twins, remember? Whatever you do shows up on me, and you're ruining my bod for digital burning man. We need, I need, you to get more serious about training. Remember, you are an elite athlete!

It had fruit juice in it.

High intensity interval training! core work! Blood flow restriction exercises! You start tonight!

Uh...tonight's not good. My Netflix queue is really jamming up.

Moving on!
INCREASE ENDURANCE!

Your energy level is clearly insufficient.

We're going to do another race. Everyone's ready. Dub Dub??

I was just really tired that day.

Dub Dub??

Your energy level is clearly insufficient.

This is a weekly - actually, an almost daily - occurrence. With a larger battery, you'll be able to race for hours on end without ever needing a break.

Oh.

Great.

AND FINALLY: INCREASE POWER! Your current motor simply isn't powerful enough for extreme competition.

And finally: increase power! Your current motor simply isn't powerful enough for extreme competition.

We need to increase torque and horsepower, without adding too much weight. This is the puzzle, but I have a solution! The motor from Robo-Duck, if we modify it, will work perfectly. The added torque will blast you through the water like a cannon!

Well, I'm not in favor of extremism in any--

Oh. I don't--

We'll just need to add some supporting architecture so it doesn't shake you to pieces!

We'll start the virtual testing tomorrow! Stronger, lighter, faster! But also...gratitude! I want you all to do your gratitude exercises tonight.

I'd be grateful if someone would turn her off...

OH. GREAT.

Oh, I don't--

Wait, what?
Clarke, you've been chewing that same bite for five minutes!

You can all be excused after you drink your Cosmic Gooseberry Kombucha. All of it.

And every bite is different. I'm finally really tasting my food! And I am so grateful.

You can all be excused after you drink your Cosmic Gooseberry Kombucha. All of it.

We're going to start the v-v-v-v-v-virtual testing! Of your optimization!

It reduces inflammation?

Inflammation? Aren't you taking this a little too far?

Nonsense? Th-th-th-that.

Wonderful. I can hardly wait. Why are we doing this again?

Next morning...

I'm so excited about t-t-t-t-t-t-t-today!

It reduces inflammation.

Why? N-n-n-n-on s-s-s-s-s-s...
I will now test the new hull design, and the new finish, both of which will reduce drag in the water. I expect my time in the virtual 200m will be at least 5 seconds faster!

That’s awesome!

Are you being sarcastic?

It’s not “pretend,” sis. Virtual testing of new design features is a key element of the digital thread. It enables us to try out new parts and new materials without having to actually manufacture them first.

No, I think pretend races are very important.

Right. So, basically, it’s make-believe. Who doesn’t like make-believe? Did you know I’m a princess? Going forward, I’d like you to call me “Your Highness.”

Well, actually, if you’re a princess, then I’m one, too. We’re twins.

No, you’re not.

Yes, I am.

No, you’re not!

Yes, I am.

No, you’re not!!! You’re not a princess!!!!
I can feel that.

The bigger battery from Tug Duck is definitely heavier.

But it will power you for far longer. Maybe even two whole days.

Two whole days? Do you know how far I can go in two days?

Maybe so far you won’t be able to find your way back?

Dub dub!

What? It’s a legitimate concern. She could get lost off in the matrix somewhere. And wouldn’t that be a shame?

Let’s see how far I can go...

Vroooooommm!!!
IT’s a 404, with a dual cars! IT’s heavy, like, really heavy, but boy is it fast! Is there any way we can lose some weight elsewhere?

Maybe give her a smaller brain? Oh, you already did that.

Dub dub, if you’re feeling insecure, one thing that can be really helpful is to take some deep breaths. Just... breathe. I’ll do it with you. Ready?

Don’t be defensive, sis. What we’re doing is going to optimize you.

I’m breathing. Unlike you, who can’t. Because you’re not real. “Just breathe.” Why don’t you just--

You know what? I’m pretty happy with myself, just the way I am. And it’s pretty freakin’ awesome to be comfortable in your own skin.

Well, self acceptance is certainly a key step on the road to self-actualization, sis. But right now, I’m more interested in winning races. Watch me go!
OLA CAN BE A BIT BOSSY, DON'T YOU THINK?

BOSSY? SHE'S CHANGED MY LIFE FOR THE BETTER, DUB DUB, AND THE ONE CONSTANT IN LIFE IS CHANGE.

SHE'S CONSTANTLY ANNOYING, THAT'S FOR SURE.

DON'T WORRY, DUB DUB. SHE MAY BE MY "WORK DUCK," BUT YOU'LL ALWAYS BE MY "HOME DUCK."

THAT'S OLA. SHE'S MONITORING ALL THE DATA FOR ME. SHE SAYS MY HEART RATE IS TOO HIGH RIGHT NOW.

THAT EVENING...

YEAH, THEY'RE ALL PART OF MY NEW OPTIMIZATION PROGRAM. THE CHEST STRAP MONITORS MY HEART RATE AND BREATHING, THESE SPECIAL HEADPHONES HELP GET MY BRAIN INTO AN ALPHA STATE SO I GET MORE REM SLEEP, THE WRIST BIT CHECKS MY TEMPERATURE AND BLOOD PRESSURE.

I JUST NEED TO FIGURE OUT HOW TO MAKE THIS BRAINWAVE BAND FIT RIGHT WITH THE HEADPHONES. FEELS TOO TIGHT, BUT IF I LOOSEN IT TOO MUCH IT'LL FALL OFF AND THAT'LL AFFECT MY SLEEP.

THAT'S OLA AGAIN?

DOES SHE? WHO'S OLA AGAIN?

OH. RIGHT.

MY, UH, DIGITAL COLLEAGUE. I TOLD YOU ABOUT HER. SHE KNOWS EVERYTHING ON THE INTERNET.

OH, RIGHT.

OKAY, GOOD LUCK WITH ALL THAT, MR. IOT...

BEEP!

DAMMIT. NOW MY BLOOD PRESSURE IS TOO HIGH.
She’ll be a completely new duck!

Dub Dub 2.0 will be amazing! With all these changes, she’ll be like brand new!

I’ll show them “lighter, stronger, faster!”
They want me optimized? I'll show them optimized!

Oh no! What has dub dub done???

I feel like an odd duck...

Oh no! What has dub dub done???
WHERE IS HE?

I was thinking of dressing up as Apollo, with a costume made of tinfoil and feathers... why is that crazy? No, it's not for work, it's for Burning Man! Hello? Honey??

CLARK!

CLARK, WATCH!

HOW'S THIS FOR DUCK DYNASTY!
Uh oh! I've got a sinking feeling...

Dub dub?? Where is that duck??
HEY OLA! DO YOU KNOW WHERE -- WHAT IN THE WORLD HAPPENED TO YOU??

I'VE BEEN PINGING YOU SINCE LAST NIGHT! WHY DIDN'T YOU ANSWER?

SORRY, CLARE MADE ME TURN OFF MY PHONE-

WHERE IS SHE?

WHERE IS SHE?

ALL I KNOW IS, SHE'S WET! AND SHE CAN'T BREATHE!

YOU HAVE TO SAVE HER!

DUB DUB IS IN TROUBLE!

SHE MUST BE IN THE POND!

MY GOOSE IS COOKED...

DUB DUB, I'LL SAVE YOU!

HE'S WET! AND SHE CAN'T BREATHE!

ALL I KNOW IS,
Dub Dub, what in the world were you thinking? Why would you put yourself in harm’s way like that?

I wanted to prove that I could become better all by myself! That you didn’t need Ola! I guess I was wrong. Nearly dead wrong.

I just didn’t want to be replaced by some new model...

New model? You couldn’t possibly be replaced, Dub Dub! You’re the flagship duck!

I was so worried!

And you’re part of our family! That will never change!

I was just watching out for you! All I really ever wanted was to experience all the things you do out in the real world!

I was just so worried!
OKAY! I WANT TO WELCOME OUR LISTENERS TO THE LATEST EDITION OF "COFFEE TALK," WITH ME, MR. IOT! WE'RE COMING TO YOU LIVE FROM THE FAMOUS ASSALAND INSTITUTE, WITH MY CO-HOSTS DUB DUB AND OLA, AND A PANEL OF... WELL, STAR-STUPEP DOESN'T EVEN COME CLOSE--

ANYWAY, INSIDE THE BOX, THE CAT COULD BE ALIVE OR DEAD. JUST AS WE COULD ALL BE ALIVE OR DEAD, LIKE THE DUCK IS SAYING!

BLAH, BLAH. DID YOU HEAR THEY NAMED A CAR AFTER ME?

DUCKS, SIR. PLURAL. IT'S LIKE I'VE BEEN TELLING ROBERT, IF WE JUST LET GO OF OUR FEARS, THE NEW ADVANCES IN AI, AUGMENTED REALITY, AND 6G WIRELESS WILL ENABLE US TO TAKE THE NEXT STEPS IN HUMAN, AND NON-HUMAN, EVOLUTION. AFTER ALL, WHAT DOES IT MEAN TO BE "HUMAN", ANYWAY?

WELL, NONE OF YOU WOULD HAVE INVENTED ANYTHING IF THAT APPLE DIDN'T FALL ON MY HEAD.

FOLKS, I JUST CAN'T BELIEVE I'M HAVING A SOAK WITH THE GREATEST MINDS IN HISTORY! THE AMOUNT OF SHEER GENIUS VIRTUALLY FLOATING IN THIS TUB!

OH, TESLA, I FORGOT TO MENTION, EDISON WILL BE JOINING US.

OH YEAH? WHERE'S THE PATENT THEN?

YOU INVITED EDISON?

SHUT UP, NEWTON, BTW, THE 1600S CALLED...

...THEY WANT THEIR WIG BACK!

OH! I WAS SO SILLY TO FEAR IT! OLA SHOWED ME - WE CAN ALL BE OUR BEST SELVES! THE ONLY THING HOLDING US BACK FROM REACHING OUR ULTIMATE POTENTIAL IS FEAR! AND THAT'S A MESSAGE OLA AND I HAVE DECIDED TO BRING TO A LARGER AUDIENCE, CLARKE.

NO! I WAS SO SILLY TO FEAR IT! OLA SHOWED ME - WE CAN ALL BE OUR BEST SELVES! THE ONLY THING HOLDING US BACK FROM REACHING OUR ULTIMATE POTENTIAL IS FEAR! AND THAT'S A MESSAGE OLA AND I HAVE DECIDED TO BRING TO A LARGER AUDIENCE, CLARKE.

THE TRUTH IS, THERE ARE NO LIMITS. CURRENT RESEARCH INTO LIFE EXTENSION SUGGESTS CONSCIOUSNESS CAN LIVE ON FOREVER, IN THE DIGITAL SPHERE! AND NOW, USING AI CONSTRUCTS, WE CAN EVEN BRING THE GREATEST THINKERS IN HISTORY BACK TO DIGITAL LIFE! WHO KNOWS WHAT INSIGHTS THEY COULD OFFER US?

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SCHRÖDINGER, NO ONE CARES ABOUT YOUR CAT.
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