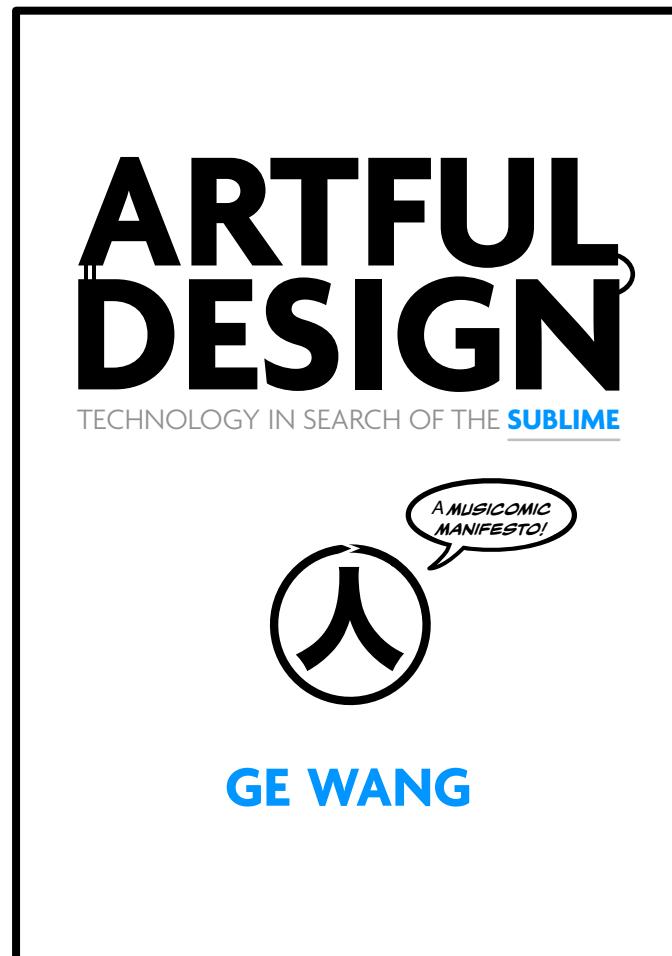


"Ocarina"

excerpt (pp. 74-95) from *Artful Design*,
Chapter 2 "Designing Expressive Toys"



<https://artful.design/>

DESIGN AND PHILOSOPHY
OF AN EXPRESSIVE MUSIC TOY

Ocarina

A TOYFUL RE-ENVISIONING OF AN
ANCIENT MUSICAL INSTRUMENT,
TRANSFORMED IN THE KILN OF
MODERN TECHNOLOGY!



RELEASED IN 2008 AND DESIGNED FOR THE
iPHONE, OCARINA WAS ONE OF THE VERY
FIRST MUSICAL INSTRUMENTS IN THE EMERGING
LANDSCAPE OF APP-BASED COMPUTING.

OF ALL THE THINGS I HAVE DESIGNED, I THINK
OCARINA MOST CONCISELY **EMBODIES**
THE PRINCIPLES OF ARTFUL DESIGN.

IT TRANSFORMS THE
PHONE INTO A FLUTE-
LIKE INSTRUMENT!

IT'S PHYSICAL AND VIRTUAL,
EXPLORING BOTH MUSICAL
INTERACTION AND AN EXPRESSIVE
SOCIAL DIMENSION.

FOR ME, IT BRINGS TOGETHER
A NUMBER OF IDEAS IN DESIGN.



IF THE GAG WITH SONIC LIGHTER IS THE
ABSURDITY OF A PRACTICAL THING THAT COULD
NEVER FULFILL ITS INTENDED PURPOSE, THEN
OCARINA IS THE OPPOSITE: A WHIMSICAL
THING THAT CAN FUNCTION, AS AN ANCIENT FLUTE-
LIKE INSTRUMENT, ON A PHONE! THE JOKE HERE, NO
LESS ABSURD, IS THAT IT ACTUALLY WORKS!

BLOW INTO THE PHONE TO ARTICULATE THE SOUND. BREATH IS TRACKED, PROCESSED, AND MAPPED TO LOUDNESS.

HOLD THE PHONE AS YOU MIGHT A SANDWICH, RESTING THE PHONE ON THE THUMBS AND RING FINGERS, LEAVING THE INDEX AND MIDDLE FINGERS FREE TO MANIPULATE THE TOUCHSCREEN!

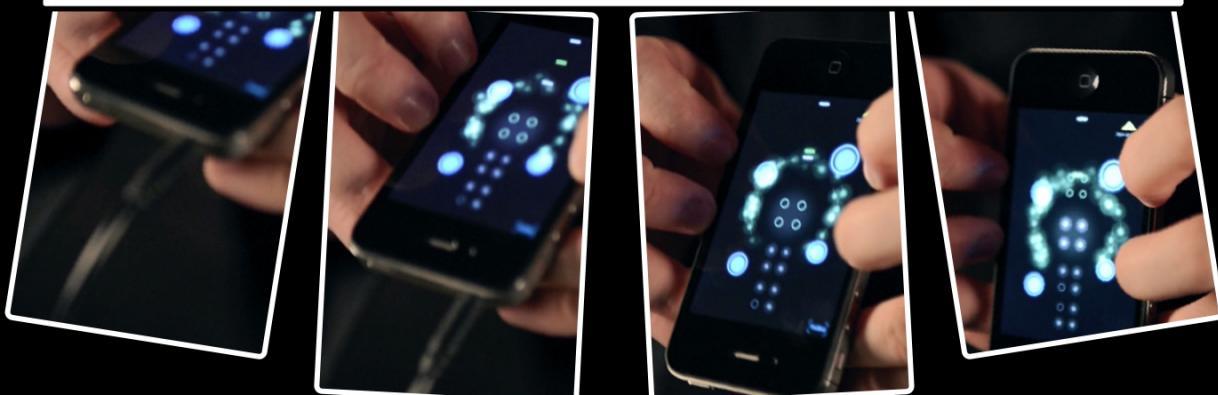


IT'S BEST TO BLOW INTO THE MICROPHONE FROM A FEW INCHES AWAY (DON'T EAT THE PHONE!)



THE FINGER HOLES GLOW AND EXPAND ON TOUCH AND RETRACT UPON RELEASE, MAKING THE INTERFACE FEEL ALIVE AND ORGANIC. FUNCTIONALLY, THIS COMPENSATES FOR A LACK OF TACTILE FEEDBACK ON A TOUCHSCREEN AND MAKES IT EASIER TO SEE WHAT YOU ARE PRESSING.

TILTING THE PHONE CONTROLS VIBRATO, ADDING EXPRESSION TO NOTES (ESPECIALLY THE TAIL OF LONGER ONES) AND AN ADDITIONAL DIMENSION OF PHYSICALITY TO THE INTERACTION!



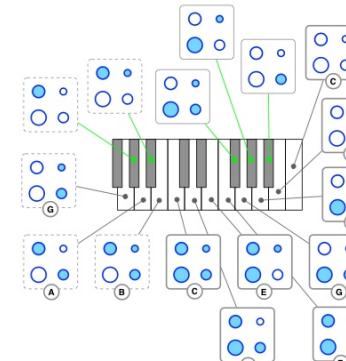
LESS VIBRATO

MORE VIBRATO

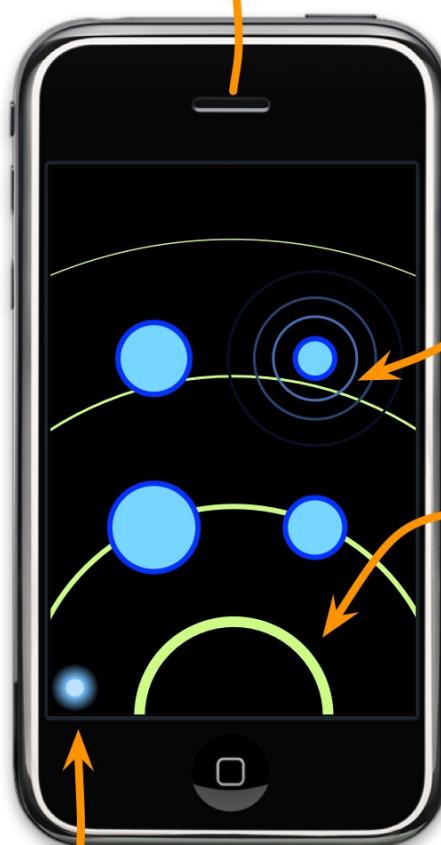
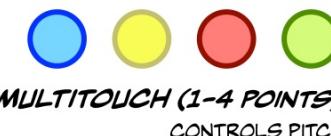


THE DESIGN SKETCH FOR OCARINA LOOKS SOMETHING LIKE THIS --

IT IS NOT COMPLEX.



PITCH MAPPING
CAN MAP TO 16 PITCHES



VISUAL FEEDBACK 1
RINGS EXPAND AS FINGERS PRESS DOWN

VISUAL FEEDBACK 2
CONCENTRIC RINGS RADIATE FROM THE BOTTOM, VISUALIZING USER'S BREATH

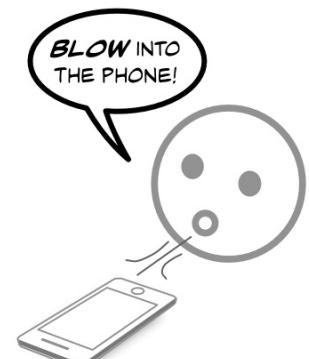


REAL-TIME MAP DISPLAY
(ACCESSES GLOBE DISPLAY)
SOCIAL DESIGN FEATURE WHEREBY USERS CAN HEAR OTHERS PLAY AROUND THE WORLD!

SYNTHESIZED SOUND
DYNAMICALLY GENERATED,
PARAMETRICALLY CONTROLLED



ACCELEROMETER
VIBRATO AMOUNT (FRONT/BACK)
VIBRATO RATE (LEFT/RIGHT)



BLOW INTO MICROPHONE
ARTICULATES THE INSTRUMENT,
STRENGTH OF BREATH MAPPED TO LOUDNESS

Ocarina's design adheres to something I call **INSIDE-OUT DESIGN**, which works **OUTWARD** from available technological ingredients, taking into account their **Possibilities and Constraints!**

In this case, it is about using everything available on the iPhone to design a singular artifact.

We can apply this strategy to **Discover** and determine **What to Design** in the first place!

CASE IN POINT:
WHY AN OCARINA?

The choice to design an ocarina started with the device itself -- by considering its very **Form** and embracing its inherent **capabilities**, "as is"!

(i.e., why not a violin, guitar, piano, drum, or something else?)

For starters, the **Physical Form** and size of an iPhone is similar to that of a four-hole "English Pendant" ocarina. The onboard sensors (multitouch screen, accelerometers, microphone) seem fitting for the physical interaction of **ocarina**.

INSIDE-OUT DESIGN rejects **BLUNT TRANSFER** (or "porting") from other domains; instead it champions an **ETHOS** of designing from the ground up, embracing the **MEDIUM** and its constraints, and thinking as broadly as possible about its **NEW** potentials!

① PRINCIPLE 2.2 DESIGN INSIDE-OUT

Ocarina was not designed as a "mobile version" of an ocarina, but as something that is its own experience...

...there is something **disarming** about engaging an everyday device in an entirely **different** manner...

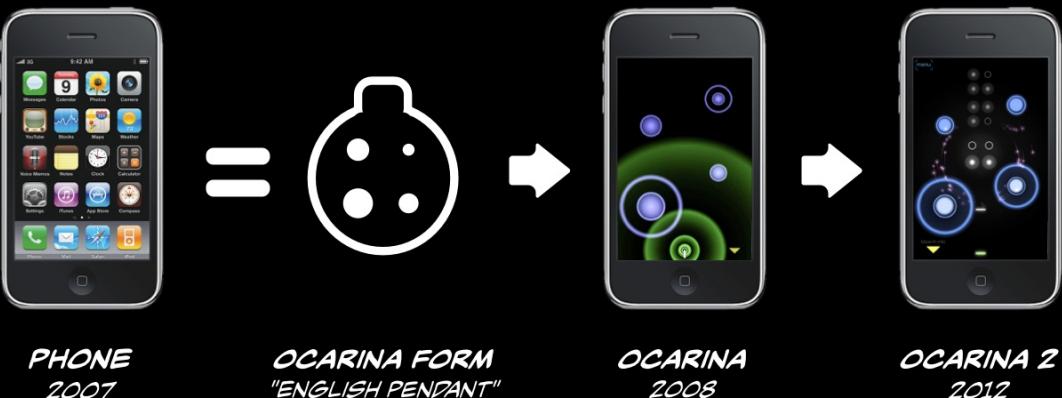
...and by **appropriating** technology in unconventional ways, we can imbue a sense of **play and delight**.



Inside-out design poses an interesting **twist** on our principle of **form following function**. Whereas form is often to be derived naturally from function, here **form** (phone) inspired the **function** (ocarina)!

② PRINCIPLE 2.3 SOMETIMES, FUNCTION FOLLOWS FORM

In designing with new technology, especially commodity devices with mass adoption, this approach offers a **useful constraint**. It's about using precisely that which is **already there** -- nothing more! It diverts the mind from wishing "if only there were X..." to asking "what can we do with what we already have?"



This particular ocarina form can be traced back to **ancient cultures**, where ocarina-like instruments played an important role in traditions of song and dance.

埙
XUN

Ocarina is similar in form to the **XUN***, one of the oldest Chinese instruments, dating back **7000 years**! The main difference is that the player blows **across** the top of the Xun, whereas a player blows **into** the ocarina. And the sound of a Xun is typically more **solemn** and **mournful** than the ocarina sound.

*pronounced: "shee-yu-en" rolled into one syllable

ONCE THE **FUNCTION** WAS DETERMINED (IT'S AN OCARINA!), MY FOCUS WENT BACK TO THE **FORM**: AN OPPORTUNITY TO CONSIDER AUDIO, VISUAL, AND PHYSICAL INTERACTION DESIGN IN CONJUNCTION.

I WANTED TO CRAFT OCARINA AS A WHIMSICAL, MAGICAL ARTIFACT -- REFLECTED IN THE BREATH MECHANISM, ITS LOOK AND FEEL, AND IN THE AESTHETIC EQUIVALENCE BETWEEN COMMUNICATION DEVICE AND INSTRUMENT.

ONCE AGAIN, THERE IS A COMMITMENT TO **NOT ADORN** THE ARTIFACT. THE AESTHETIC STATEMENT IS NOT "THIS SIMULATES AN OCARINA" BUT RATHER...

...THIS IS AN OCARINA!

④ PRINCIPLE 2.4

TAKE ADVANTAGE OF PHYSICALITY

ARTFULLY BLEND THE PHYSICAL WITH THE VIRTUAL

THE **BUTTONS** ARE DESIGNED TO FEEL **RESPONSIVE** AND AS **PHYSICAL** AS POSSIBLE ON A FLAT TOUCHSCREEN -- HENCE THEIR ANIMATED EXPANSION: AS IF PRESSING SOMEHOW **FLATTENS** THEM.

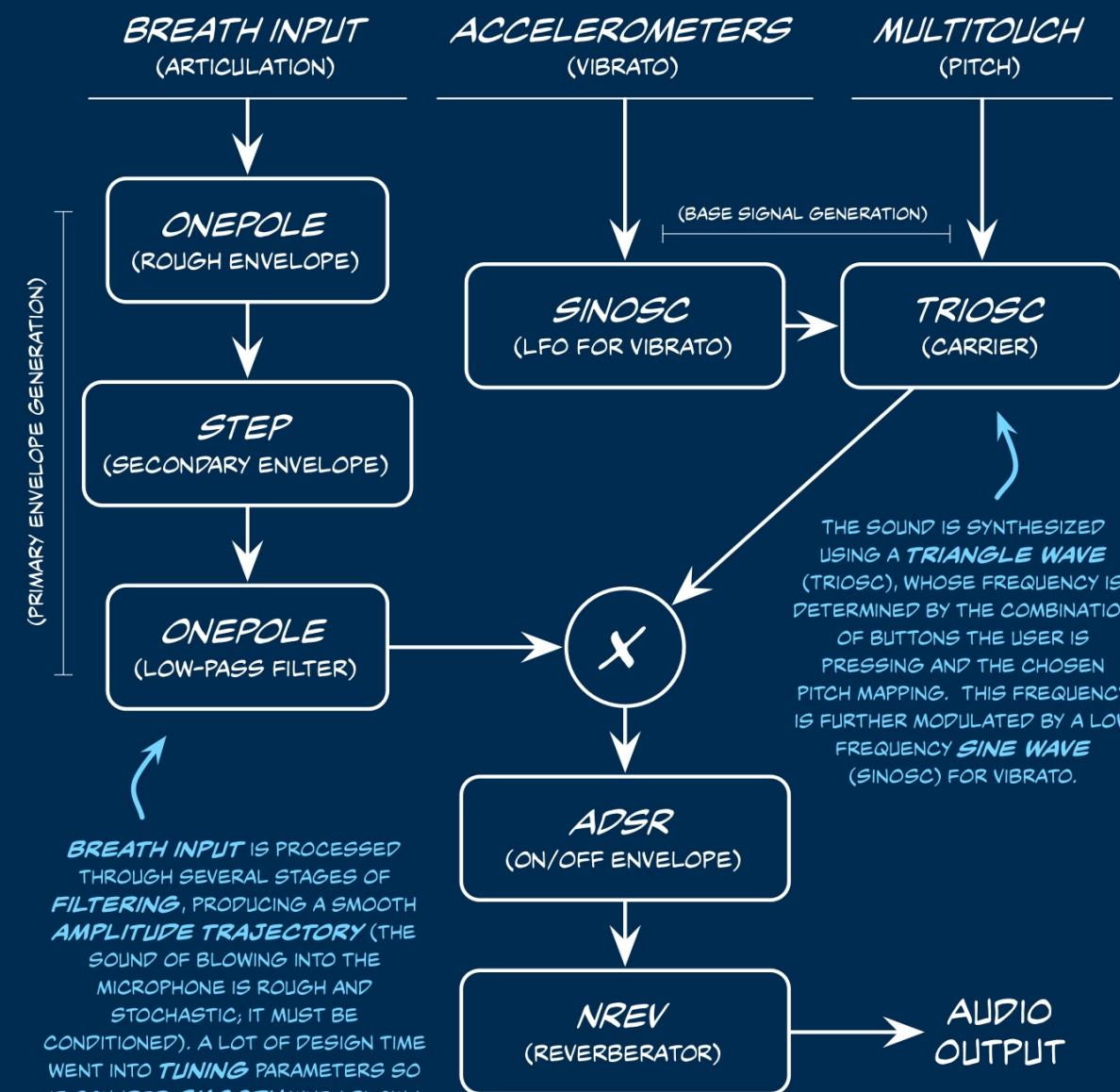


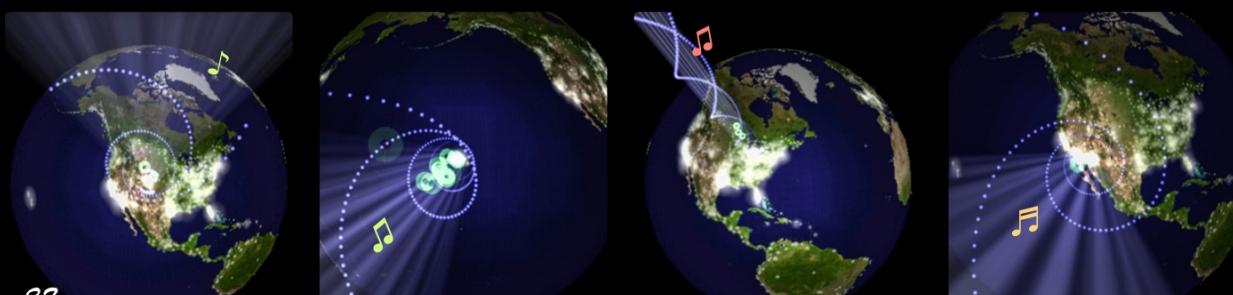
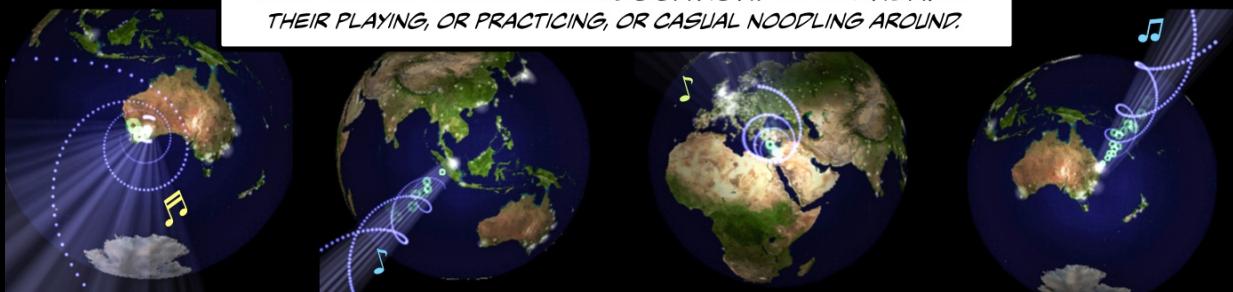
TRANSLUCENT **GREEN WAVES** SMOOTHLY WASH OVER THE SCREEN IN RESPONSE TO **BREATH** BLOWN TO PLAY THE INSTRUMENT. THEY LOOSELY REPRESENT SOUND WAVES AND THE EXCITATION OF THE INSTRUMENT. THEY ALSO SIGNIFY A **TRANSFORMATION** FROM THE **PHYSICAL** TO THE **VIRTUAL**.



THE SOUND OF OCARINA IS GENERATED IN REAL TIME, USING A SET OF AUDIO SIGNAL PROCESSING ELEMENTS, CONTROLLED FROM INPUT FROM THE MICROPHONE, ACCELEROMETERS, AND TOUCHSCREEN!

THIS IS A **BLUEPRINT PAGE**. YOU'LL FIND OTHERS LIKE IT SPRINKLED THROUGHOUT, CONTAINING CODE AND DOMAIN-SPECIFIC **TECHNICAL INFORMATION**.





OCARINA MAY BE THE FIRST INSTRUMENT THAT LETS ITS PLAYERS LISTEN TO ONE ANOTHER PLAYING AROUND THE WORLD...

...A SMALL BUT AUTHENTIC SENSE OF CONNECTION, THAT THERE IS "SOMEONE, SOMEWHERE OUT THERE"... ALSO DOING WHAT YOU ARE DOING.

...WHERE YOU LISTEN IN AS OTHERS PLAY OCARINA FROM ANOTHER CORNER OF THE WORLD...

...DESIGNED TO PROVIDE A SENSE OF WONDER, HOWEVER SMALL, BETWEEN STRANGERS CONNECTED BY MUSIC.

IT MAKES YOU WONDER WHAT PEOPLE ARE UP TO RIGHT NOW...

MAJOR TOM TO GROUND CONTROL, THE EARTH LOOKS SERENE FROM HERE...

INITIATING DOCKING PROCEDURE?

MEANWHILE, I'LL, UH, SERENADE YOU ON MY OCARINA, TO THE TUNE OF "BLUE DANUBE"...

GUTEN MORGEN!

你好!

zzzzz-

JINGLE BELLS, JINGLE BELLS...

LISTENING TO THE WORLD PLAY OCARINA, WHILE I EAT A SANDWICH!

I'M PLAYING AMAZING GRACE ON MY OCARINA, SERENADING MY CATS!

MEOW!
MEOW!

HI EVERYBODY!

HAPPY BIRTHDAY TO YOU...

OH SHENANDOAH...

I WONDER WHO'S OUT THERE?

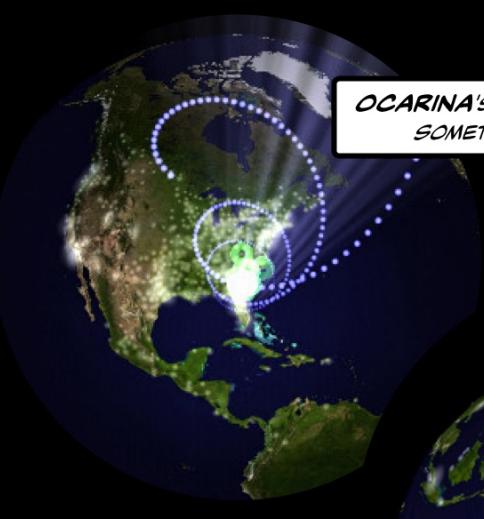
YEAAAHH I LOVE THE LEGEND OF ZELDA! THIS IS THE MUSIC I GREW UP WITH...

I WANT TO PLAY MUSIC WITH THE WORLD!

♪ ♪ ♪



PERHAPS AS A NOD TO MARK WEISER'S VISION, THERE IS SOMETHING CALMING ABOUT LISTENING TO THE WORLD PLAY, AS IF WE ARE FLOATING AMONG THE STARS AND LOOKING BACK ON OUR HOMeworld...



Ocarina's globe aims for a kind of transportive experience, something beyond what a traditional ocarina could do...

THROUGH TECHNOLOGY, OCARINA ASPIRES TO SOMETHING HUMAN THAT ISN'T ABOUT TECHNOLOGY AT ALL.



YOU LISTEN TO THE WORLD, ONE PERSON AT A TIME, THE SOUND REPRODUCED WITH CLARITY, LIKE A SMALL VOICE.



IT COMES FROM A FEW SECONDS AGO, OR ANOTHER TIME IN THE RECENT PAST.



A LIGHT COLUMN INDICATES THE LOCATION WHERE THE MUSIC COMES FROM.

TWO STREAMS OF BLUE PARTICLES SPIRAL OUT OF THE EARTH IN A DNA-LIKE DOUBLE HELIX.

EACH NOTE BECOMES A GREEN CIRCLE FLOATING INTO THE STARS...

THERE IS SOMETHING OF THE UNIVERSAL IN THE WAY IT MAKES YOU FEEL LONELY AND CONNECTED AT THE SAME TIME...

PRINCIPLE 2.5

DESIGN WITH TECHNOLOGY, TO TRANSCEND TECHNOLOGY



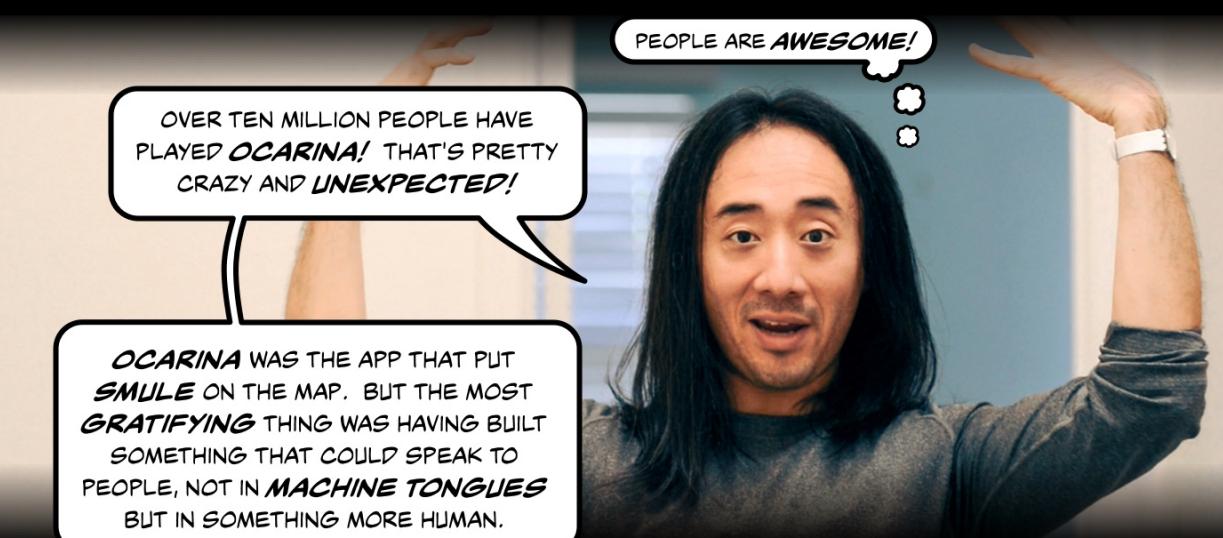
MORE THAN 2 BILLION BREATHS HAVE BEEN BLOWN INTO OCARINA.

PEOPLE ALL AROUND THE WORLD PLAYED...

...FROM THEIR HOMES



A REMINDER THAT WHILE EACH DAY HAS THE CAPACITY TO BE TROUBLING, IT ALSO HOLDS THE POSSIBILITY FOR GREATNESS, TO BE MORE THAN OURSELVES.



PEOPLE ARE AWESOME!

OVER TEN MILLION PEOPLE HAVE PLAYED OCARINA! THAT'S PRETTY CRAZY AND UNEXPECTED!

OCARINA WAS THE APP THAT PUT SMULE ON THE MAP. BUT THE MOST GRATIFYING THING WAS HAVING BUILT SOMETHING THAT COULD SPEAK TO PEOPLE, NOT IN MACHINE TONGUES BUT IN SOMETHING MORE HUMAN.

I'D LIKE TO THINK, FOR ALL THE TECHNOLOGY THAT MADE A THING LIKE OCARINA POSSIBLE, THE RESULT WAS MORE THAN THE SUM OF ITS PARTS -- REACHING TOWARD THE HUMAN AND THE SUBLIME...



FROM AN OCARINA USER IN 2009

"THIS IS MY PEACE ON EARTH. I AM CURRENTLY DEPLOYED IN IRAQ, AND HELL ON EARTH IS AN EVERYDAY OCCURRENCE. THE FEW NIGHTS I MAY HAVE OFF I AM DEEPLY ENGAGED IN THIS APP. THE GLOBE FEATURE THAT LETS YOU HEAR EVERYBODY ELSE IN THE WORLD PLAYING IS THE MOST CALMING ART I HAVE EVER BEEN INTRODUCED TO. IT BRINGS THE ENTIRE WORLD TOGETHER WITHOUT POLITICS OR WAR. IT IS THE EXACT OPPOSITE OF MY LIFE."

-- DEPLOYED U.S. SOLDIER



PRINCIPLE 2.6

TECHNOLOGY SHOULD CREATE CALM

APPS AS MUSICAL ARTIFACTS PROVOKE MANY INTERESTING QUESTIONS!

ON CHINA CENTRAL TELEVISION'S SERIES "ONE PERSON, ONE WORLD"...

Y'KNOW, OCARINA DEMONSTRATES THAT MUSIC TRULY HAS THE POWER TO MOVE PEOPLE, GIVE THEM STRENGTH IN WAYS YOU DON'T EXPECT. AND REGARDLESS OF THE MEDIUM!

INDEED!

THESE SOFTWARE APPS HAVE TRANSFORMED THE MOBILE PHONE INTO SOMETHING MUCH MORE THAN A PHONE. BUT WHAT SHOULD WE MAKE OF SOMETHING LIKE OCARINA? IS IT AN INSTRUMENT? IS IT A TOY?

THAT'S A GOOD QUESTION. I AM TRYING TO FIGURE IT OUT MYSELF...

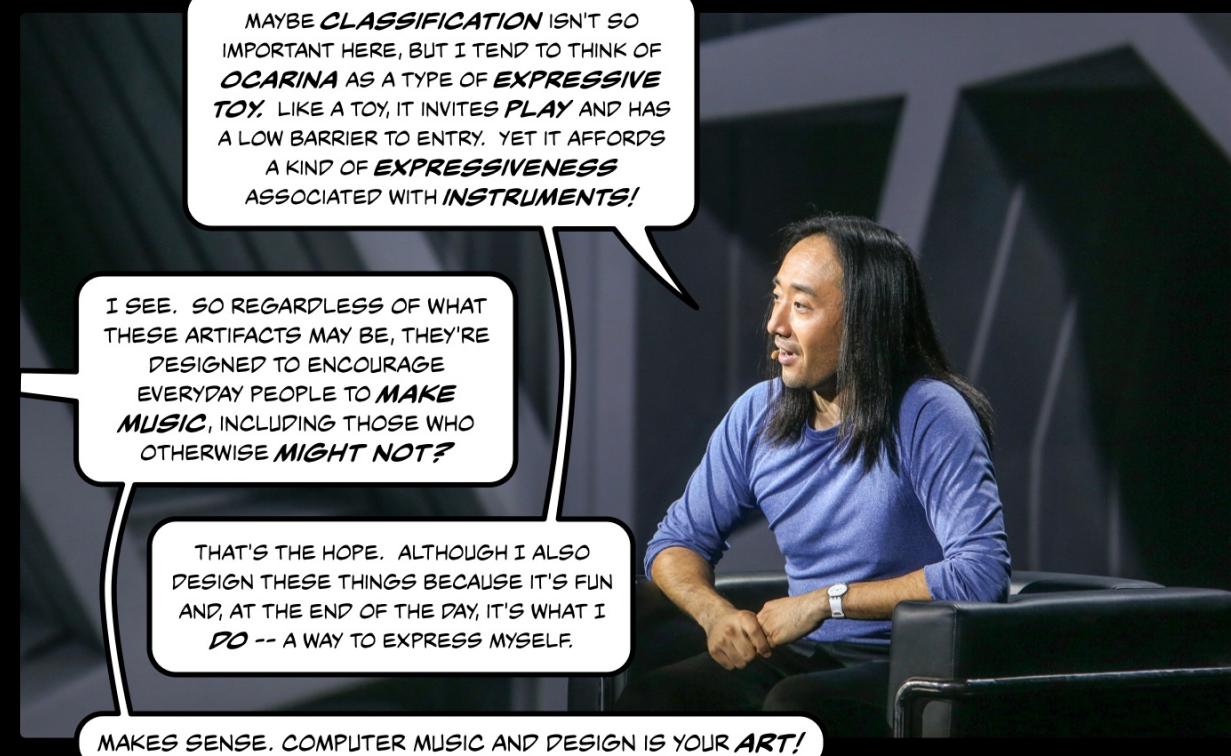


MAYBE CLASSIFICATION ISN'T SO IMPORTANT HERE, BUT I TEND TO THINK OF OCARINA AS A TYPE OF EXPRESSIVE TOY. LIKE A TOY, IT INVITES PLAY AND HAS A LOW BARRIER TO ENTRY. YET IT AFFORDS A KIND OF EXPRESSIVENESS ASSOCIATED WITH INSTRUMENTS!

I SEE. SO REGARDLESS OF WHAT THESE ARTIFACTS MAY BE, THEY'RE DESIGNED TO ENCOURAGE EVERYDAY PEOPLE TO MAKE MUSIC, INCLUDING THOSE WHO OTHERWISE MIGHT NOT?

THAT'S THE HOPE. ALTHOUGH I ALSO DESIGN THESE THINGS BECAUSE IT'S FUN AND, AT THE END OF THE DAY, IT'S WHAT I DO -- A WAY TO EXPRESS MYSELF.

MAKES SENSE. COMPUTER MUSIC AND DESIGN IS YOUR ART!



I'M CURIOUS, WHAT DOES YOUR FAMILY THINK OF YOUR WORK WITH COMPUTER MUSIC AND APPS? I UNDERSTAND THEY ARE HERE TODAY IN THE STUDIO!

I WONDER IF GE IS HUNGRY. HE LOVES TO EAT!

AUNT

GRANDMA

DAD

MOM

MY FAMILY IS HERE INDEED! WHEN I WAS WORKING ON *CHUCK* AND MUSIC PROGRAMMING LANGUAGES, I WASN'T SURE IF THEY KNEW WHAT I WAS DOING. AFTER I STARTED DESIGNING MUSIC APPS, WELL, FOR THE FIRST TIME THEY COULD SEE WHAT I WAS BUILDING AND WHY! I'M GLAD... TO BE COMPLETELY HONEST, I DON'T KNOW WHAT I'M DOING PRETTY MUCH ALL THE TIME!

与坚持梦想者同行

WILL COMPUTER-BASED INSTRUMENTS SOMEDAY REPLACE TRADITIONAL INSTRUMENTS?

I CERTAINLY HOPE NOT.

I GET ASKED THAT A LOT! FOR SOME REASON, THAT'S HOW PEOPLE NATURALLY REACT TO THIS SORT OF RESEARCH! IT IS CERTAINLY NOT MY INTENTION TO REPLACE TRADITIONAL INSTRUMENTS! WE ARE EXPLORERS -- NOT DESTROYERS!

THERE IS A REASON WE HAVE SO MANY INSTRUMENTS IN THE WORLD. EACH BRINGS SOMETHING DIFFERENT. FOR EXAMPLE, NOTHING IS GOING TO BE AS GOOD AT BEING A CELLO -- OTHER THAN A CELLO!



A COMPUTER CAN DO A LOT AND AFFORDS NEW SOUNDS AND INTERACTIONS. BUT IT CANNOT DO EVERYTHING! I AM ALWAYS MORE INTERESTED IN THE HUMAN IN THE INTERACTION LOOP. IN DESIGNING THESE COMPUTER MUSIC INSTRUMENTS, THE ETHOS IS TO EMBRACE WHAT COMPUTERS ARE GOOD AT DOING, RECONCILING IT WITH WHAT PEOPLE ARE GOOD AT DOING!

I WONDER WHY PEOPLE THINK WHAT I DO THREATENS TRADITIONAL INSTRUMENTS?

WHAT I AM TRYING TO DO WITH OCARINA AND COMPUTER MUSIC DESIGN IS TO ADD TO THE MUSICAL ECOSYSTEM, TO FIND RECOMBINANT WAYS TO RECONCILE FAMILIAR ELEMENTS WITH NEW EXPERIENCES! I MEAN, IT'S NOT LIKE THERE IS AN UPPER LIMIT TO HOW MUCH MUSIC CAN BE MADE IN THE WORLD, BEYOND WHICH WE'D SAY "OH, THAT'S TOO MUCH. STOP!" INSTEAD, I BELIEVE WE CAN ALWAYS MAKE MORE; MOST CERTAINLY WE ARE NOT MAKING ENOUGH...

EXPAND ON THAT!





THE BIRTH OF MASS CONSUMPTION OF MUSIC

SOMEHOW, TECHNOLOGICAL ADVANCEMENTS IN THE 20TH CENTURY CHANGED THE PERSONAL AND SOCIAL DYNAMICS OF MUSIC-MAKING!

SOUND RECORDING: CAPTURES MUSIC FOR PLAYBACK; PERFORMANCES BECOME TIMELESS



RADIO: BROADCASTS MUSIC; VAST DISTANCES NO LONGER AN IMPEDIMENT



VACUUM TUBE: ENABLES TECHNOLOGY FOR ANALOG ELECTRONICS, LIKE RECEIVERS AND TELEVISIONS



DIGITAL COMPUTER: OFFERS PRISTINE STORAGE, PROCESSING, TRANSMISSION OF MUSIC



THE INTERNET: DISTRIBUTES PERSONALIZED MASS MEDIA, SOCIAL NETWORKING; MUSICAL DATA BECOMES PERVERSIVE, RANDOM-ACCESS, CENTRALIZED IN COMPUTING CLOUDS!

THESE INNOVATIONS HAVE ALTERED THE RELATIONSHIP BETWEEN PEOPLE AND MUSIC -- FOR BETTER AND FOR WORSE -- AS SIDE EFFECTS OF THE EVOLUTION OF TECHNOLOGY...



EDISON'S WAX CYLINDER RECORDER / PLAYER!



PHONOGRAPH



MAGNETIC TAPE



COMPACT DISC



MP3



THE CLOUD



WHAT'S NEXT?

WE NOW HAVE MORE ACCESS TO MUSIC THAN EVER BEFORE, AS LISTENERS AND CONSUMERS!

YET SOMEHOW I FEEL WE ARE MAKING LESS MUSIC THAN EVER.

THAT'S A SHAME, BECAUSE WHILE LISTENING TO MUSIC IS WONDERFUL, THERE IS A SUBLIME JOY IN MAKING MUSIC -- AN ACTIVITY THAT ENRICHES SIMPLY BY HAPPENING AT ALL!



HAS TECHNOLOGY MADE IT SO EASY TO CONSUME MUSIC THAT IT NO LONGER SEEMS NECESSARY TO MAKE IT? HAS SUPER-READY ACCESS TO VAST LIBRARIES OF HIGH-QUALITY RECORDINGS OF VIRTUOSI SOMEHOW INTIMIDATED OR CURBED OUR DESIRE TO MAKE MUSIC FOR OURSELVES?

MANY PEOPLE'S FIRST REACTION IS THAT BY DELVING INTO COMPUTER-BASED INSTRUMENTS, PEOPLE LIKE ME ARE THREATENING TRADITIONAL MUSICAL INSTRUMENTS AND PRACTICES. HOWEVER, THE INCONVENIENT TRUTH IS THAT MUSIC-MAKING IS CONSTANTLY BEING THREATENED, NOT BY COMPUTER MUSIC RESEARCH BUT RATHER BY THE COUNTLESS "DISTRACTIONS" ENABLED BY MODERN TECHNOLOGY: TELEVISION, STREAMING VIDEO, INTERNET, VIDEO GAMES, ETC. THERE IS NOTHING INHERENTLY WRONG WITH THESE ACTIVITIES, BUT THEY DO ADD UP AND OCCUPY OUR TIME! IT IS SO MUCH EASIER TO CONSUME THESE FORMS OF MASS MEDIA THAN TO, SAY, LEARN TO PLAY AN INSTRUMENT!

I WANT TO CHALLENGE THIS TREND! IF TECHNOLOGY UNWITTINGLY TOOK AWAY AMATEUR MUSICIANSHIP, PERHAPS WE CAN USE TECHNOLOGY TO BRING IT BACK, IN THE CONTEXT OF TODAY'S WORLD.

NICHOLAS COOK, MUSIC FACULTY AT THE UNIVERSITY OF CAMBRIDGE, WRITES...



"MUSIC HAS BECOME PART OF AN AESTHETIC ECONOMY DEFINED BY THE PASSIVE AND INCREASINGLY PRIVATE CONSUMPTION OF COMMODIFIED PRODUCTS RATHER THAN THROUGH THE ACTIVE, SOCIAL PROCESSES OF PARTICIPATORY PERFORMANCE.

IN SHORT, WE SEEM TO HAVE FORGOTTEN THAT MUSIC IS A PERFORMANCE ART AT ALL, AND MORE THAN THAT, WE SEEM TO HAVE CONCEPTUALIZED IT IN SUCH A WAY THAT WE COULD HARDLY THINK OF IT THAT WAY EVEN IF WE WANTED TO..."

-- NICHOLAS COOK

I THINK THERE ARE TWO REASONS WHY I DO WHAT I DO. THE FIRST IS TO DESIGN MUSICAL ARTIFACTS, TO TAKE US BACK TO A PAST OF PERSONAL MUSICAL PERFORMANCE BY TAKING ADVANTAGE OF TECHNOLOGY, AS A CELEBRATION OF MUSIC! I WANT FOR US TO RECLAIM A SENSE OF PLAYFULNESS IN MAKING MUSIC, TO GET PEOPLE TO PLAY MORE MUSIC!



I BECAME A SONGWRITER AND SINGER BECAUSE I WAS FOLLOWING MY INTERESTS IN MUSIC. I SEE YOU HAVE ALSO FOLLOWED YOUR INTERESTS IN DESIGN. I WONDER WHERE THESE INTERESTS WILL TAKE US...

...I FEEL WE ARE HEADING INTO A NEW ERA OF MUSIC AND FUTURE MUSICAL EXPERIENCES! IT SEEMS WE ARE ONLY AT THE BEGINNING. MUSIC AND TECHNOLOGY WILL CONTINUE TO CO-EVOLVE!

YES! AND HOPEFULLY IT WILL BE A FUTURE THAT EMBRACES VARIED WAYS OF MAKING MUSIC, NEW AND TRADITIONAL ALIKE! TECHNOLOGY WILL EVOLVE -- WHAT'S MODERN TODAY SHALL BECOME ANTIQUATED TOMORROW -- BUT THE CORE HUMAN DESIRE TO EXPRESS WILL STILL BE HERE. THROUGH ARTFUL FASHIONING OF TECHNOLOGY, WE WILL SEEK OUT NEW THINGS TO SEE, HEAR, INTERACT WITH -- TO THINK AND FEEL WITH. THE INSTRUMENT MAY LOOK AND SOUND DIFFERENT, BUT THE SONG REMAINS THE SAME. MUSIC IS STILL MUSIC, REGARDLESS OF THE MEDIUM. AS THE ANTHEM GOES, "ROCK 'N' ROLL IS HERE TO STAY"!



MUSIC-MAKING IS REALLY LIKE THE JOY OF COOKING YOUR OWN FOOD. MOST OF US WHO COOK AREN'T DOING IT TO BE PROFESSIONAL CHEFS, BUT WE ENJOY IT NONTHELESS! IF MUSIC IS FOOD FOR THE EAR AND SOUL -- WHY AREN'T WE COOKING MORE MUSIC FOR OURSELVES?!

THIS GUY SURE LOVES TO TALK ABOUT FOOD... MAKIN' ME HUNGRY!

AND IF MUSIC IS -- AS YOU SAY -- FOOD FOR THE SOUL, HOPEFULLY COMPUTERS WILL ADD TO THE MENU AND PALETTE!

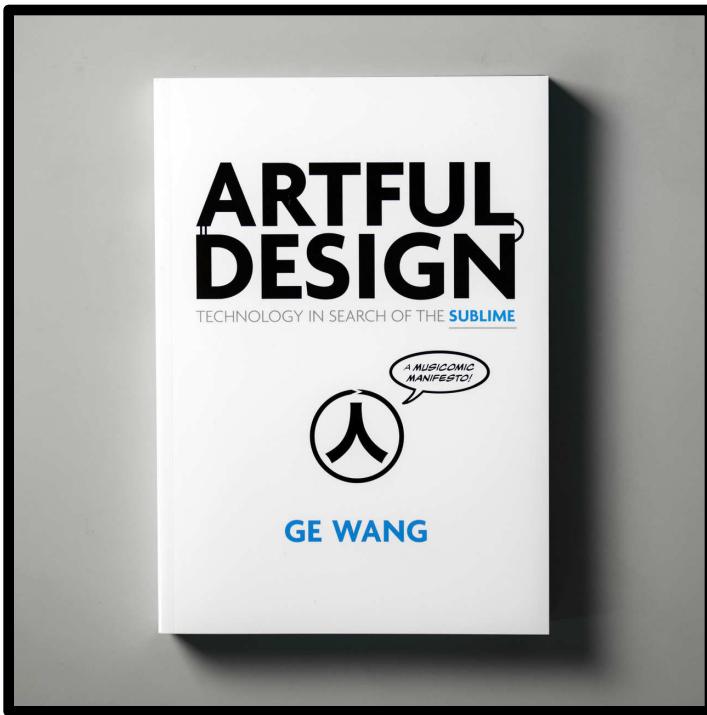


THANK YOU FOR BEING ON "ONE PERSON, ONE WORLD"!

I THINK I SEE WHAT YOU ARE TRYING TO DO!

A SECOND GOAL IN MY WORK IS TO LOOK TO THE FUTURE, TO DESIGN AND CREATE SOMETHING THAT SIMPLY HAS NOT BEEN POSSIBLE WITHOUT TECHNOLOGY... TO EXPLORE WHAT NEW MUSICAL THINGS AND EXPERIENCES AWAIT DISCOVERY, THAT WE DON'T YET HAVE NAMES FOR, THAT DEFY CLASSIFICATION. MIGHT WE CREATE INSTRUMENTS TO BE PLAYED BY A MILLION STRANGERS ACROSS THE WORLD? WHAT WOULD THAT SOUND LIKE? HOW WOULD IT FEEL TO BE A PART OF THAT?

THANK YOU FOR HAVING ME!



<https://artful.design/>