I = interviewer; P4 = participant. Refer to DDM2020 dataset documentation for more information.

I		erm so yeah let's let's get started so in our email discussion you told me briefly about a a recent sustainable design project or a recent design project which has some sustainability relevance could you remind me of what the product is
P4		er yeah it's a series of I can show you my screen if you want or
I		yeah it's helpful you can do that in within teams you can do that as well
		if you click on yeah
P4		I don’t know if you can see
I		not yet maybe it's coming
		yeah I can see that now yes
P4		yeah er so erm this is a project that I did with a friend a few years ago like in two thousand and seventeen
I		mhm
P4		as I explain here ((showing documents and sketches on screen of a furniture design project)) er the idea erm was to improve the the market product er that the competitors from the region and we sought to manufacture or we contacted manufacturers but er no one wanted to manufacture er below like a hundred products
I		ah
P4		and we couldn’t afford that so we er we designed these products to be able to manufacture ourselves
I		oh okay
P4		yeah so that was the then like the main reason and so we developed a bending machine er and we as here we saved a lot of er of parts of the process
I		okay
P4		manufacturing process we avoid er for each ((inaudible)) we we avoided welding grinding painting and sanding and so er we have so much so much work and we we tried to use er cheap

material er this iron rod and we finished with this this product er with three these three products

and the most well I found interesting here is these numbers er that we could that we could get and that we will use er and this can err be reused right reused even more but we we sought to er to hide all the weldings right so we have to weld but we could avoid er the grinding and sanding so we we weld er from from beneath er all the weldings are hidden and here too we welded on the back so yeah we had a lot er less surface welding er

I yeah

P4 because also we we didn't need a err a grinder we can cut with a with a manual bar cutter er I don't know if you if you if you saw the ((inaudible)) er let me open here yes so er manual bar cutter ((opens browser tab while still sharing screen and googles to show it)) yeah

I okay

P4 yeah so it's like a see-saw so er you don't need to use a grinder and erm all the benefits of this of this thing of this aspect is that er when you we reduce it the manufacturing time the supply chain didn't need as much erm welding rods erm like the welding apron er we you can extend the lifespan of the of the of the equipment right and the machine also so yes the interesting is to be able to measure this kind of stuff

I yep

P4 er okay so yeah that will be will be it for this project you have the concept inspiration here ((showing screen)) why er you like the work we were trying for this project but er yeah the idea was to to to use the the least amount of material possible

I yeah okay and so there wasn't a client there wasn't a brief for this project it was just something that you and your partner came up with

P4 yes yeah I'm from Argentina and I'm now currently in Italy but Argentina doesn't okay so design haha industrial design or product design er is usually needed er to to so ((name)) the your brother and I

okay I stop my sharing my screen

		okay to improve your your current product erm yeah and gain some some market but in Argentina you don’t have much competitors the industry it's quite simple so er there usually industrial designers er design and manufacture
I		right
P4		themselves because er the furniture is easy to manufacture
I		okay so you have a workshop there or you had a workshop where you did the
P4		yeah usually I did I manufactured this product like one year and then I move er and stopped manufacturing and now I’m in Italy so yeah and haha
I		okay and erm and so what was your role in the design were you you and your partner are both designers that you work together or
P4		er we are both designers and yeah that particular project I'm er interested in sustainable design
I		uhu
P4		since a few years er and he just helped me to to manufacture
I		okay
P4		yeah er he studied a few years industrial design and left the career er yeah he helped me to develop the whole product line
I		okay
		erm so this might get a little bit more difficult but could you tell me about some of the design decisions that you had to make when you were designing this product or these products
P4		yes er so I wanted to ask you the other day about the questions but I I want to ask you something first to you so you are making this research of sustainable about sustainable design
I		yes
P4		and I wanted to know er why
I		why haha
P4		haha then I can understand er what might be important
I		so I originally studied design a long time ago but I didn't I was always interested in

sustainability and I didn't like just to put more things into the world so instead I developed a career in erm working on sustainability and supply chains I worked in West Africa in India and I focused on certifications and manufacturing working conditions and sustainability impacts of the manufacturing and then I also worked on procurement so how do you sustainable procurement how do you influence the products and by the way you set criteria when you're buying them for a big organisation and then I wanted to get back to the design end and to understand what influence you can actually have over a product when you're designing it obviously there's so many other people involved that the factors involved but I'm interested to understand what what is happening at the design stage what how are designers making these decisions about whether to go with a more sustainable or a less sustainable option and what things are influencing that what factors are limiting that or or helping that so I'm I'm interested in you know I've looked at it from so many angles and I'm interested in getting back to now understanding what designers are able to do and and what they're not able to do and and why in different contexts does that make sense

P4 yeah a lot of sense and yes so we have a lot of er responsibility er when we design a product er many designer don't think about it

I yeah

P4 ((inaudible)) it isn't relevant at the moment because er we have bigger problems

I yes yes

P4 we have bigger problems so now no one is interested in sustainability that's why I'm travelling to here to Europe to work how does the sector work in this area so I see sustainable design as yeah if you if you I I'm I'm sure that you know that it has three main pillars the social or human aspect the economic aspect and the environmental so it's like a ((inaudible)) for the linear economy right and now I'm studying about er circular design

I yeah

P4 that is basically sustainable design within a erm circular economy

I mhm

P4 so when I say that it's about is you do what you can to improve er all all these things or you play with with certain things er so to diminish er okay so the current er industry is user centred

I mhm

P4 the design so many designers talk about that

I yeah

P4 er forget about the environmental aspect and focusing on the human and economic aspect led us here right so the problems that we that we have now

I yeah

P4 um so when I talk about sustainable design or when I think about sustainable design it's er that to add that one that environmental aspect to the product so in this case and these er furniture was er like an exercise of designing er from the what if we don't use certain process right so we we didn't want er to weld it's like er playing for a while at the beginning right you the thinking approach or the design process

I mhm

P4 and er and at the beginning you know you make a research and you establish certain challenges so er we took the liberty of thinking what if we don't weld what if we er we don't use the the common material play ((inaudible)) and played and found something that we like err but

I so how did you

P4 yeah so there are two main two main decisions there

I yep

P4 er try to make something different so the ((inaudible)) or the the usual processes this one weld and to join the material like so what if we can make er ues one material so and avoid the welders err you weld to join two parts what if you don't have to join that two parts er so yeah that would be one decision what if we can erm question the the this this this methodology of questioning every everything er exploring every possibility of course that when you make a project for yourself you have unlimited time er it can be messy too but yeah it's usually for any project er know your the the schedule know at

what part how much time do you have to explore and you finalise the problem well or the challenges er know how much time to do you have to play and with which things you can play erm and then explore and take a decision

I mhm

P4 on what you found and that will be one and the other will be I forgot haha erm yeah I forgot

I okay so I guess which what decision related to this product do you think was the most important for sustainability

P4 erm for this for this product we we had a rational approach so it was the the decision to avoid you saying the yeah so diminsh the use of of welding and try to make a product modular

I right

P4 from the manufacturer er from manufacturing aspect and

I mhm

P4 yeah that's replacing the the the welding on the joins er for the bending same material so yeah we tried to not com not to compromise the functionality or the the structural aspect and and at the same time diminishing the manufacturing costs and steps

I mhm

P4 so that should be haha these kind of question that appears on the page two that we I can I can share you again my screen but

I I can look I have another screen where I opened it so I can see it

P4 haha yeah okay so this page er we made the research we established er the our market er had simple manufacturing technologies a lot of manufacturing operations that the products were ((inaudible)) oversighted structurally oversighted so we sought to simplify that and we ask these kind of questions what if we use another material er avoid the ((inaudible)) of certain processes so later er one year later I explored ah a more sustainable approach on this so

I okay

P4 yeah er I I don't I have a pdf but it sucks because I I lost my computer there so yeah but the main idea was to er here ((pointing using mouse on screen)) you you have the structure welded er together right

I mhm

P4 er the you only have to screw the the wooden lids so the next logical or sustainability yeah yeah the next logical step in a sustainability approach will be to er make a product that can be disassembled

I mmm

P4 so what if the the we eliminate all the welding erm the welding joins and er this product is er silver and it's painted right er it has coated er powder coating

I uhu

P4 so what if we don't have to paint the material and we have always the spray gun the paint the equipment and the steps and of course being able to to recycle the material later on so what if we use er aluminium rod that you have to paint the aluminium you can keep it natural and we er we join the the we solve the joins with some kind of a metal plate or

I mhm

P4 I haven't solved it properly yet so that er I didn’t like the the solution but that would be the next step to to make something that you can assemble and disassemble and so you will have err two it's one part repeated right so you have this part that is the same so you have rotate that done and the product will be er the packaging will okay so one product packaging will wear ah how haha you diminish the packaging volume so if you are able to disassemble this so the user the user will have to will have to assemble the product

I yeah

P4 and we should so did that assembling er in as simple a way possible right

I mhm

P4 that will be the next step I think to avoid the painting to keep er trimming or simplifying the the manufacturing process and to er diminish the shipping costs and the and yeah if you don’t weld

		you don't need the work the equipment the goggles the vision goggles the welding apron so
	I	right yeah
	P4	yeah it's so almost like rational design right there nice rationalism of the of the german yeah german on the eighties or so we have a yeah we our our how can I say erm yeah they teach us or our models hmm our university uses the same programme as the er as the german or bauhaus or ((inaudible)) er programme so we we learn rational design
	I	okay
	P4	so that er always leads us to so a rational approach and a sustainable er approach we have simple technologies or we have er new technologies right and we have ((inaudible)) and three d printing but are quite expensive so we try to design with simple technologies and that like narrowing the the design with those elements it's useful to solve to explore or to yes to explore further those technologies or they say that er if you narrow or if you play with fewer er parts or components or you tend to increase creativity right so you find and keep exploring and finding er original solutions or better solutions er I think that that they say that about the Japanese too they perfection perfect perfected their designs over hundreds of years
	I	uhu
	P4	so I like a lot they use er in carpentry they use er as less material as possible er have improved their designs a lot
	I	and so yeah what what does this so this rational approach that you take erm and and limiting the possibilities what what does this what does the process look like what design process do you follow to do this
	P4	hmm erm so so let me think so it looks like errr if I have to if I have to show something similar to that it's it's like a let me open this I don't know of this is the word like a map errr okay let me show this okay so
		((doorbell goes))
	I	okay someone's just rang my doorbell I'm sorry it's just a parcel that's quite important
	P4	oh

I I just need to run for one moment I'll be very quick

P4 yeah no problem

((interviewer leaves to get the door then returns))

I sorry about that I was hoping it wasn't gonna happen during the interview

P4 no problem

I so the process

P4 yeah erm so I think that errr it’s you know ((doorbell goes okay now

((both laughing))

P4 okay give me a second ((laughing))

((P4 answers his door, we hear talking in Italian))

P4 okay okay I'm back

I okay haha

P4 I was not expecting that okay yeah so ah the design thinking approach that everybody talks right

I yeah

P4 so it's all about err actually I er I like to test methodologies and I'm adding this like a play yeah I allowed me to play within this this this phase so you have to define certain things right so you have to like this kind of approach er for each aspect so you have the environmental aspect th economic and social and you explore all these kind of process you you you begin to ask questions and you make like like a tree there um I don't know how to say ((pointing on screen to a spider diagram)) but you keep adding like branches

I yeah

P4 and yeah you try to find err you try to find err a branch that balances all the all the aspects er so I think that it's just asking questions I don't know ah that's the hard thing about design or yeah that you have to make it and to to to it's like okay so I like to explain I like to explain er just industrial design graphic design as a language so you have to or or learning an instrument so you have to do it to learn how to

do it you have the theory and you have to then you have to play and explore and and and learn how to so I think that this phase the the the strategy phase is the most relevant for all the products so because it's the one that lets err it's the one where you take the decisions and then you can solve it anyone could solve the technical aspects erm

I yeah

P4 but yeah it's this thinking part so it's I don't know if if that helps I think that it's just keep asking questions and the more time you have to ask questions er the better will be will be the result erm

I yep and then if you if you have so many ideas and different concepts how do you decide which one to take forward

P4 erm okay so you make like a diversion er phase and then converge

I mhm

P4 so you converge

I yep

P4 if you had that I like about the sharing the screen again but yeah that's usually the hard part

I yeah

P4 err that's why I like to I'm working with this process of defining okay so it depends on each business or each er company what they're looking for so you work within that er framework

I yeah

P4 and you have to set or establish the challenges for the company has and the challenges that you want to er to solve with this with this project so you have like long term challenges and short term challenges and long term goals and short term goals

I yep

P4 so that allows you to to measure and to guide and to narrow the process so you when you have to converge you trim the branches with these with these attributes or these goals that you have to make so you have the I don't know if there okay so you have the er the challenges on one side and

the goals on the other side and what you explore in the in the middle are like all these branches and you hope that one connects er with the other side or maybe you have I don't know three challenges and three goals and it's hard that one branch or one concept er solves all these er yeah gives like an answer so the three challenges and the three goals erm

I and do you do you write this down or is this in your mind or is this some kind of tool that you're using or

P4 I think many that's err okay so I think that everybody can er design and make this process and that's why they came thinking it's more er relevant nowadays because we've got a democrat democrat democratises the the design process err some people say that designers are like born this way right you have to or you need some a few attributes like curiosity and er being like obsessive with er with exploring right you you need to you have to curiosity and you need to see the processes as a cir circle or cycle

I mhm

P4 or the design approach er can be natural when you try something you fail you evaluate why you fail and you start over

I yep

P4 so err I think er that yeah you have to write that down because you can forget about it

I right

P4 so write everything and then you have to curate what you what you thought but based on these err key words or main ideas or challenges and those

I okay yep

P4 you can get lost many designers don't er know how there this works or don't know how to explain design process

I yeah

P4 so making they make it like natural so you have making an analogy you can have the best er I don't know tennis player er but he can't teach you how to be a good player so design is the same thing

I mhm

P4 you can be a great designer but maybe you can't teach how how you think and how you solve

I yeah

P4 and then I like to think that if that's possible and everybody can design because it's just a way of er think thinking

I yeah

P4 er so yeah I think that you should write everything that you think and the truth is there are a lot of ted talks and other talks that that give a lot of this of this advices that big creatives or successful creatives have

I mhm

P4 as part of their personality so in this society or economy err allows certain personalities so to fit better err in certain on certain roles err so if you like to work all day you're you will be better than someone that right you're competing all the time er so the designer has certain habits that are writing everything they think er and even have a notebook beside beside their bed

I yeah

P4 you can forget

I yeah

P4 I have a actually one design advice is that if you have one week solve a problem er try to explore the first two days leave your brain and and forget about the problem make other go to see ted talks go to walk ah make something that you want to to make

I uhu

P4 like for two days and give the brain like a time to process it all

I mmm

P4 and that seems to work er pretty well

I yeah

P4 and yeah when when you force a solution it tends to be harder to solve it

I yeah

P4 I don’t know there are many examples I think that when you're having a conversation and you say

		something and later you think oh I said I wanted to
I		yeah
P4		or when you're in the shower or when you're about to sleep when you have when you clear your mind
I		mhm
P4		usually the brain solves the problem or figure outs the problem many creatives force that
I		yeah yeah
P4		yeah it's just exploring and seeing what works for each one
I		yeah
P4		I think ((laughing))
I		and going back to the product that you talked about something you didn't mention was the the type of wood or the the material for the top surfaces was that a sustainability consideration at all
P4		erm yea we we so you have to make some compromises right so errr if we used err a composite wood like ((inaudible)) or mdf
I		mhm
P4		those are cheaper but also harder or impossible to to to recycle
I		yeah
P4		but erm so we wanted to use erm solid wood
I		mhm
P4		and in Argentina we don't have we have plenty of of solid wood and we don't have if we have these deforestation problems err are because er agriculture not for other I don't know lumbering or cutting to to make products
I		right
P4		so yeah we have we don't have that kind of of certifications in Argentina
I		oh okay
P4		but but it's usually when you buy some wood from from another country
I		right okay

P4 but we tired er yeah to work with er with established er wooden companies

I uhu

P4 like and to use er wood dried wood dried wood year so you know that it's stable and it's not er it's going to to last longer but it's expensive so er aimed for a for a certain target a certain yep user

I yeah

P4 so if you if we made that decision we will had to consider that and about the wood you also have to protect the wood so

I mhm

P4 here it's protected with er with a paint er I don't know how to say it okay but it's not ecological at all

I yeah

P4 but the you can make some two things to you can use a water-based er paint

I mhm

P4 my my other approach for the improvement was to use err beeswax

I right

P4 so I found that's possible actually I trialled er the problem actually is that you need er the user need to er maintain the product

I yeah yeah

P4 so you're add you're adding steps to

I yeah

P4 for for the user but I don't know I like er leather products er I I like leather products and in Argentina again the leather is er erm I don't know ah I can't find the word ah it would be waste you you have leather because you have a lot of cow production

I yeah

P4 so it's the leather is usually good quality and cheap

I right

P4 a good leather product can last like ten fifteen years or more so I like that if if it going to if

608		it is going to end up in err in a landfull er
609		better be used and try to to extend that life er
610	I	yeah
611	P4	spans so err leather the leather goods need need
612		care right so you have you I think that should be
613		an important approach if you want to make a
614		product er a furniture that needs maintenance you
615		have to see it as as a leather product haha
616	I	yeah
617	P4	because to to I don't know to change the function
618		or the relationship with the user
619	I	sure yeah
620	P4	so it's something that I was er thinking with a
621		friend errr I was talking a few few weeks ago how
622		can you create like a bond or like a relationship
623		with a furniture
624	I	yeah yeah
625	P4	er er so yeah it shouldn't be it should be a good
626		thing to solve because the logical this this
627		logical cycle of maintaining your own your own
628		products
629	I	yeah okay so but with the current product what
630		was the solution in the end for the wood did you
631		you said you painted it or
632	P4	yeah
633	I	yeah
634	P4	yeah it's painted with er I don't know a solvent-
635		based er
636	I	yep
637	P4	paint er
638	I	okay
639	P4	because
640	I	yep
641	P4	in Argentina we didn't have good quality water
642		water based-paint
643	I	yeah okay
644	P4	so we thought that at least the the this paint
645		would last longer
646	I	yep

P4 so we had two options or you have to make to take these kinds of decisions that at least the product lasts longer

I yep

P4 with the less convenient solution you have to make a a balance right

I yes okay and then the the last thing I wanted to ask about you said at the very beginning that a designer has to take responsibility could you tell me a bit more about how you feel about the responsibility you have as a designer

P4 yes so design is kind of tricky in all the all the design branches like graphic design etcetera errr because the last twenty of thirty years the the industry and market is focused on on aesthetics basically and and developing or replacing the products once a year so they value or the industry value more er the aesthetics work

I yeah

P4 and not the environmental aspect because you don't want the product to have a a long lifespan

I yeah sure

P4 err so luckily now that has errr that's beginning to change but usually as I told you er when I asked a few designers er a few great designers or recognised designers in Argentina they don't think or didn't think about the ecological aspects

I yeah

P4 which I like to imagine that their product is going to be on a shelf all er all its life or that the user will ((inaudible)) the product

I yeah

P4 er yeah but that's not that's not true right haha you're er I I am a designer or I happen to be a designer because it fits of my hobbies I like to creater err ((inaudible)) I'm young errr but if I like again it it's kind of err a conscious thing or an educational thing if you er and what your values are and what you the people in society demand from you

I yeah

P4 so if the yeah if a company or if the society or yourself don't demand these ecological or

environmental aspects er you don't think and if it's if now if no one demands that it has no value er if you say this is this lasts longer could be could be seen bad err from a from a company so again luckily now that's beginning to change but yeah it it's until it's until it wasn't valued until it wasn't valuable designers er didn't have to think of that

I yeah

P4 that would be the ((inaudible)) thing for it

I yeah so you feel you feel you've got your own values related to sustainability so you feel like a personal responsibility as a designer to to

P4 because I like nature

I yeah

P4 I like nature since I'm a child and I'm I like to create things

I yeah

P4 so at some point I saw that er my own work could interfere with my beliefs

I yeah

P4 so that's where usually designers er it's like I don't know vegans the the vegans when you gain consciousness about how the the animals are treated and actually I was vegetarian and vegan for a long yeah for several years and so so it's like all related to er err consciousness I think I you are worried about the environmental aspects or nature errr you will you will care about sustainable design

I yeah but if you work if you are a designer working in a company or working for a client that doesn't care about sustainability you still feel you have a responsibility to to push it or

P4 yeah if that is completely personal

I yeah

P4 I think so yeah so but I always try to if you like something you're going to about err ((inaudible)) it so I always try to I always seek to to improve and to defend my designs from an objective viewpoint so I don't like to discuss er a ((inaudible)) from a client a subjective viewpoint so I like it or not er I like to talk

734		with numbers I like to talk er with measurable
735		data or things
736	I	okay
737	P4	so I like this kind of methodology where you can
738		you can discuss so instead of say I don't like
739		this you can say okay if you want if you change
740		this you're going to affect this thing if you
741		want err if you want we can change that but you
742		are losing maybe key attributes that ((matter))
743		to the company so usually when you work with a
744		client that doesn't er that doesn't that don't
745		value design or don't know enough err you have to
746		explain the process and the the this this element
747		errr so they can understand and and you are
748		many people say that designers are like
749		translators that why that's why I say that it's
750		like a language you're translating what the
751		company wants to er and what the user the user
752		needs er with a product errr
753	I	yep
754	P4	so hahaha I forgot okay so errr what was the
755		question haha
756	I	haha the question we were talking about
757		responsibility to push if you are yeah
758	P4	yes yes within this certain when you have okay so
759		first stage you have to explore and learn er
760		learn all the options
761	I	mhm
762	P4	er of these branches that I talked about earlier
763		I try to find at least three three concepts or
764		three paths to to cover within the challenges and
765		goals
766	I	yeah
767	P4	and every each path has compromises
768	I	mhm
769	P4	so year mayone may be expensive one may be
770		cheaper but I don't know pollutes more so I try
771		to to to with what I can solve it in the in the
772		best possible way
773	I	yeah
774	P4	so I usually in that sense that happens with
775		designers work more err more hours than I should
776		because I want to er the product of the project
777		is going to have err even if you invest a week

you're going to have a repercussion right or it's going to last several years

I mhm

P4 so I don't like to work on short-term projects

I okay

P4 I have to usually I try I'm trying not to I'm trying to to to improve to be able to ((inaudible)) part of larger products and ((inaudible)) even a small change on a large product can affect more right because you are I don't know millions of other products and so yeah it's trying to to to find then a balance between the ((inaudible)) and the time that you have and doing the best way towards what you have and I don't know if this covers the question

I yeah definitely yeah okay no it's really interesting to hear just your experience and your perspectives on this quite complicated topic so thank you that those are all the questions I had was there anything else you'd like to add that you haven't covered

P4 erm yeah no I think that as I told you now I'm studying circular design

I mhm

P4 and the good thing about this new approach is that the whole companies and the whole system is applying the same concept from the beginning

I yeah

P4 so it's a company is already reducing their their energy consume their water consume err they're changing so solving these kind of problems on all the all the the areas

I yeah

P4 so if you have graphic design printing on er with water-based inks with certified paper er so I don't know haha I think that's that's what's relevant now luckily or the market is seems to be er going to

I yeah hopefully we'll see

P4 yeah er yeah otherwise if you like or if it's a part of you to or your conscious consciousness er to make er I don't know I like to design furn I I like to design I like to design some problems I like to solve problems and I thought that er I

822 could begin designing furniture here in rome but
823 apparently the the furniture industry doesn't
824 value the or don't value the sustainable aspect
825 yeah yes

826 I mhm

827 P4 so I will have to seek I I don't like to work if
828 I if I get to choose I don't like to work on non-
829 sustainable

830 I mhm

831 P4 pr products

832 I yeah

833 P4 so I'm trying to yeah to see if I can now I'm
834 trying I'm finishing my internship here in Italy
835 I'm going to Spain err

836 I okay

837 P4 going to improve my english keep studying so er
838 I'll be able to to find a job in a company that
839 that has has a bigger impact

840 I yeah

841 P4 and I would love to I for example I don't like
842 erm United States but you have the MIT there and
843 they are researching about this new er
844 sustainable or biological er yeah technologies so
845 yeah you have to on your own life or my own life
846 I will have to make some compromises

847 I yeah

848 P4 not living in the place that I like but trying to
849 to as a human contribute

850 I yeah

851 P4 or have the the most impact possible

852 I yeah

853 P4 so it's a life decision for each person and
854 professional too so yeah you make compromises
855 haha

856 I sure yeah

857 P4 with each decision

858 I yeah definitely well good luck with whatever's
859 coming next for you yeah hopefully you'll find
860 some way to to do sustainable design

861 /end/