New display technologies: the most desired usage properties and their perception during product interaction

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BOTH PRODUCTS (n = 77)				
USAGE PROPERTY	**Chi-Square (dof = 2)**	**Asymptotic Sig (2-sided test) p**	**TECHNOLOGIES (highest value in bold)**	**Adjusted Significance value p**
Realism	0.063	0.969	2D – 360º	1.000
			2D – AR	1.000
			360º – AR	1.000
Angle	40.136	< 0.001	2D – **360º**	0.000
			2D – **AR**	0.001
			360º – AR	0.082
Usefulness	2.325	0.313	2D – 360º	1.000
			2D – AR	1.000
			360º – AR	0.925
Trust	1.151	0.562	2D – 360º	1.000
			2D – AR	1.000
			360º – AR	1.000
Easiness	32.558	< 0.001	2D – 360º	0.143
			2D – AR	0.000
			360º – AR	0.023
Comfort	20.163	< 0.001	2D – 360º	1.000
			2D – AR	0.003
			360º – AR	0.014
Satisfactory experience	1.744	0.418	2D – 360º	1.000
			2D – AR	1.000
			360º – AR	1.000
Fun	26.206	< 0.001	2D – **360º**	0.002
			2D – **AR**	0.000
			360º – AR	1.000
Interactivity	39.132	< 0.001	2D – **360º**	0.000
			2D – **AR**	0.000
			360º – AR	1.000
Immersivity	32.467	< 0.001	2D – **360º**	0.014
			2D – **AR**	0.000
			360º – AR	0.094
Availability	17.096	< 0.001	2D – 360º	1.000
			2D – AR	0.003
			360º – AR	0.061
Tangibility	11.375	0.003	2D – 360º	0.061
			2D – **AR**	0.028
			360º – AR	1.000
Decision	2.827	0.243	2D – 360º	0.523
			2D – AR	1.000
			360º – AR	1.000
Expectation	6.972	0.031	2D – 360º	1.000
			2D – AR	0.471
			360º – AR	0.094

Table S1: Significant differences between technologies, in the assessment of their properties and affective indicators. Results from the Friedman test, for related samples, in responses including AR for both products. Significance level: $p < 0.05$. Significance values have been adjusted by the Bonferroni correction for multiple tests. Significant differences are marked with gray cells, and the technology with the highest rating is in bold.

SIDEBOARD (N = 38)				
USAGE PROPERTY	**Chi-Square (dof = 2)**	**Asymptotic Sig (2-sided test) p**	**TECHNOLOGIES (highest value in bold)**	**Adjusted Significance value p**
Realism	1.633	0.442	2D – 360º	1.000
			2D – AR	1.000
			360º – AR	0.875
Angle	17.148	<0.001	2D – **360º**	0.001
			2D – **AR**	0.014
			360º – AR	1.000
Usefulness	0.187	0.911	2D – 360º	1.000
			2D – AR	1.000
			360º – AR	1.000
Trust	0.894	0.640	2D – 360º	1.000
			2D – AR	1.000
			360º – AR	1.000
Easiness	8.419	0.015	2D – 360º	1.000
			2D – AR	0.105
			360º – AR	0.370
Comfort	4.909	0.086	2D – 360º	1.000
			2D – AR	0.433
			360º – AR	1.000
Satisfactory experience	1.135	0.567	2D – 360º	1.000
			2D – AR	1.000
			360º – AR	1.000
Fun	10.481	0.005	2D – 360º	0.128
			2D – **AR**	0.028
			360º – AR	1.000
Interactivity	17.825	<0.001	2D – **360º**	0.004
			2D – **AR**	0.006
			360º – AR	1.000
Immersivity	17.186	<0.001	2D – 360º	0.155
			2D – **AR**	0.001
			360º – AR	0.266
Availability	2.043	0.360	2D – 360º	1.000
			2D – AR	0.991
			360º – AR	0.991
Tangibility	4.588	0.101	2D – 360º	0.671
			2D – AR	0.266
			360º – AR	1.000
Decision	1.960	0.375	2D – 360º	1.000
			2D – AR	0.875
			360º – AR	1.000
Expectation	1.148	0.563	2D – 360º	1.000
			2D – AR	1.000
			360º – AR	1.000

Table S2: Significant differences between technologies, in the assessment of their properties and affective indicators. Results from the Friedman test, for related samples, in responses including AR only for the sideboard. Significance level: $p < 0.05$. Significance values have been adjusted by the Bonferroni correction for multiple tests. Significant differences are marked with gray cells, and the technology with the highest rating is in bold.

GOOSENECK LAMP (N = 39)				
USAGE PROPERTY	**Chi-Square (dof = 2)**	**Asymptotic Sig (2-sided test) p**	**TECHNOLOGIES (highest value in bold)**	**Adjusted Significance value p**
Realism	1.727	0.422	2D – 360º	1.000
			2D – AR	1.000
			360º – AR	0.707
Angle	24.535	<0.001	2D – **360º**	0.000
			2D – AR	0.081
			360º – AR	0.043
Usefulness	4.875	0.087	2D – 360º	1.000
			2D – AR	0.707
			360º – AR	0.291
Trust	0.847	0.655	2D – 360º	1.000
			2D – AR	1.000
			360º – AR	1.000
Easiness	25.705	<0.001	2D – 360º	0.081
			2D – AR	0.000
			360º – AR	0.081
Comfort	16.831	<0.001	2D – 360º	1.000
			2D – AR	0.005
			360º – AR	0.004
Satisfactory experience	3.306	0.191	2D – 360º	1.000
			2D – AR	1.000
			360º – AR	0.464
Fun	15.750	<0.001	2D – **360º**	0.013
			2D – **AR**	0.001
			360º – AR	1.000
Interactivity	21.444	<0.001	2D – **360º**	0.001
			2D – **AR**	0.000
			360º – AR	1.000
Immersivity	15.377	<0.001	2D – 360º	0.119
			2D – **AR**	0.002
			360º – AR	0.537
Availability	18.982	<0.001	2D – 360º	0.537
			2D – AR	0.001
			360º – AR	0.066
Tangibility	7.115	0.029	2D – 360º	0.119
			2D – AR	0.144
			360º – AR	1.000
Decision	2.926	0.232	2D – 360º	0.912
			2D – AR	1.000
			360º – AR	0.537
Expectation	7.585	0.023	2D – 360º	1.000
			2D – AR	0.291
			360º – AR	0.098

Table S3: Significant differences between technologies, in the assessment of their properties and affective indicators. Results from the Friedman test, for related samples, in responses including AR only for the gooseneck lamp. Significance level: $p < 0.05$. Significance values have been adjusted by the Bonferroni correction for multiple tests. Significant differences are marked with gray cells, and the technology with the highest rating is in bold.

BOTH PRODUCTS (N = 77)				
USAGE PROPERTY	**Chi-Square (dof = 2)**	**Asymptotic Sig (2-sided test) p**	**TECHNOLOGIES (highest value in bold)**	**Adjusted Significance value p**
Realism	9.291	0.026	2D – 360º	0.177
			2D – ni_VR	1.000
			2D – i_VR	0.060
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Angle	37.453	< 0.001	2D – **360º**	0.000
			2D – ni_VR	1.000
			2D – **i_VR**	0.031
			360º – ni_VR	0.000
			360º – i_VR	0.077
			ni_VR – i_VR	0.601
Usefulness	2.666	0.446	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Trust	5.424	0.143	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	0.246
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Easiness	13.007	0.005	2D – 360º	1.000
			2D – ni_VR	0.141
			2D – i_VR	0.372
			360º – ni_VR	0.077
			360º – i_VR	0.221
			ni_VR – i_VR	1.000
Comfort	16.070	< 0.001	2D – 360º	1.000
			2D – ni_VR	0.499
			2D – i_VR	0.027
			360º – ni_VR	0.548
			360º – i_VR	0.031
			ni_VR – i_VR	1.000
Satisfactory experience	2.491	0.477	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Fun	58.654	< 0.001	2D – **360º**	0.000
			2D – **ni_VR**	0.000
			2D – **i_VR**	0.000
			360º – ni_VR	1.000
			360º – i_VR	0.198
			ni_VR – i_VR	0.198
Interactivity	72.823	< 0.001	2D – **360º**	0.000
			2D – **ni_VR**	0.000

BOTH PRODUCTS (N = 77)				
USAGE PROPERTY	**Chi-Square (dof = 2)**	**Asymptotic Sig (2-sided test) p**	**TECHNOLOGIES (highest value in bold)**	**Adjusted Significance value p**
			2D – **i_VR**	0.000
			360º – ni_VR	1.000
			360º – i_VR	0.411
			ni_VR – i_VR	0.337
Immersivity	71.956	< 0.001	2D – **360º**	0.013
			2D – **ni_VR**	0.000
			2D – **i_VR**	0.000
			360º – ni_VR	0.177
			360º – **i_VR**	0.000
			ni_VR – i_VR	0.087
Availability	19.563	< 0.001	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	0.001
			360º – ni_VR	1.000
			360º – i_VR	0.011
			ni_VR – i_VR	0.099
Tangibility	29.245	< 0.001	2D – 360º	0.304
			2D – **ni_VR**	0.011
			2D – **i_VR**	0.000
			360º – ni_VR	1.000
			360º – i_VR	0.060
			ni_VR – i_VR	0.931
Decision	6.197	0.102	2D – 360º	0.221
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	0.856
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Expectation	4.326	0.228	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	0.499
			360º – i_VR	1.000
			ni_VR – i_VR	1.000

Table S4: Significant differences between technologies, in the assessment of their properties and affective indicators. Results from the Friedman test, for related samples, in responses including VR, for both products. Significance level: $p < 0.05$. Significance values have been adjusted by the Bonferroni correction for multiple tests. Significant differences are marked with gray cells, and the technology with the highest rating is in bold.

SIDEBOARD (N = 38)				
USAGE PROPERTY	**Chi-Square (dof = 2)**	**Asymptotic Sig (2-sided test) p**	**TECHNOLOGIES (highest value in bold)**	**Adjusted Significance value p**
Realism	14.056	0.003	2D – 360º	0.121
			2D – ni_VR	1.000
			2D – **i_VR**	0.007
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	0.229
Angle	20.945	< 0.001	2D – **360º**	0.000
			2D – ni_VR	1.000
			2D – **i_VR**	0.041
			360º – ni_VR	0.041
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Usefulness	5.375	0.146	2D – 360º	0.790
			2D – ni_VR	1.000
			2D – i_VR	0.357
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Trust	5.289	0.152	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	0.471
			360º – i_VR	1.000
			ni_VR – i_VR	0.614
Easiness	5.367	0.147	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	0.357
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Comfort	10.562	0.014	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	0.357
			360º – ni_VR	0.614
			360º – i_VR	0.142
			ni_VR – i_VR	1.000
Satisfactory experience	10.795	0.013	2D – 360º	0.121
			2D – ni_VR	1.000
			2D – i_VR	0.102
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Fun	28.929	< 0.001	2D – 360º	0.060
			2D – ni_VR	0.050
			2D – **i_VR**	0.000
			360º – ni_VR	1.000
			360º – i_VR	0.471
			ni_VR – i_VR	0.539
Interactivity	37.854	< 0.001	2D – **360º**	0.001
			2D – **ni_VR**	0.002

SIDEBOARD (N = 38)				
USAGE PROPERTY	**Chi-Square (dof = 2)**	**Asymptotic Sig (2-sided test) p**	**TECHNOLOGIES (highest value in bold)**	**Adjusted Significance value p**
			2D – **i_VR**	0.000
			360º – ni_VR	1.000
			360º – i_VR	0.698
			ni_VR – i_VR	0.411
Immersivity	38.840	< 0.001	2D – 360º	0.050
			2D – **ni_VR**	0.002
			2D – **i_VR**	0.000
			360º – ni_VR	1.000
			360º – **i_VR**	0.010
			ni_VR – i_VR	0.196
Availability	9.483	0.024	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	0.086
			360º – ni_VR	1.000
			360º – i_VR	0.142
			ni_VR – i_VR	0.698
Tangibility	25.225	< 0.001	2D – 360º	0.357
			2D – ni_VR	0.050
			2D – **i_VR**	0.000
			360º – ni_VR	1.000
			360º – i_VR	0.102
			ni_VR – i_VR	0.614
Decision	9.208	0.027	2D – 360º	0.229
			2D – ni_VR	0.891
			2D – i_VR	0.142
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Expectation	3.000	0.392	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000

Table S5: Significant differences between technologies, in the assessment of their properties and affective indicators. Results from the Friedman test, for related samples, in responses including VR only for the sideboard. Significance level: $p < 0.05$. Significance values have been adjusted by the Bonferroni correction for multiple tests. Significant differences are marked with gray cells, and the technology with the highest rating is in bold.

GOOSENECK LAMP (N = 39)				
USAGE PROPERTY	**Chi-Square (dof = 2)**	**Asymptotic Sig (2-sided test) p**	**TECHNOLOGIES (highest value in bold)**	**Adjusted Significance value p**
Realism	0.797	0.850	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Angle	17.788	< 0.001	2D – **360º**	0.003
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	0.010
			360º – i_VR	0.167
			ni_VR – i_VR	1.000
Usefulness	1.678	0.642	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Trust	3.000	0.392	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Easiness	10.297	0.016	2D – 360º	1.000
			2D – ni_VR	0.196
			2D – i_VR	0.102
			360º – ni_VR	0.614
			360º – i_VR	0.357
			ni_VR – i_VR	1.000
Comfort	6.616	0.085	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	0.196
			360º – ni_VR	1.000
			360º – i_VR	0.539
			ni_VR – i_VR	1.000
Satisfactory experience	1.187	0.756	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Fun	30.066	< 0.001	2D – **360º**	0.008
			2D – **ni_VR**	0.010
			2D – **i_VR**	0.000
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Interactivity	35.490	< 0.001	2D – **360º**	0.001
			2D – **ni_VR**	0.000

GOOSENECK LAMP (N = 39)				
USAGE PROPERTY	**Chi-Square (dof = 2)**	**Asymptotic Sig (2-sided test) p**	**TECHNOLOGIES (highest value in bold)**	**Adjusted Significance value p**
			2D – **i_VR**	0.000
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Immersivity	34.030	< 0.001	2D – 360º	0.539
			2D – **ni_VR**	0.001
			2D – **i_VR**	0.000
			360º – ni_VR	0.229
			360º – **i_VR**	0.004
			ni_VR – i_VR	1.000
Availability	10.241	0.017	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	0.028
			360º – ni_VR	1.000
			360º – i_VR	0.196
			ni_VR – i_VR	0.411
Tangibility	7.208	0.066	2D – 360º	1.000
			2D – ni_VR	0.471
			2D – i_VR	0.196
			360º – ni_VR	1.000
			360º – i_VR	1.000
			ni_VR – i_VR	1.000
Decision	3.319	0.345	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	1.000
			360º – ni_VR	0.891
			360º – i_VR	0.891
			ni_VR – i_VR	1.000
Expectation	8.516	0.036	2D – 360º	1.000
			2D – ni_VR	1.000
			2D – i_VR	0.698
			360º – ni_VR	0.309
			360º – i_VR	0.086
			ni_VR – i_VR	1.000

Table S6: Significant differences between technologies, in the assessment of their properties and affective indicators. Results from the Friedman test, for related samples, in responses including VR only for the gooseneck lamp. Significance level: $p < 0.05$. Significance values have been adjusted by the Bonferroni correction for multiple tests. Significant differences are marked with gray cells, and the technology with the highest rating is in bold.

USAGE PROPERTY	TECHN. (highest value in bold)	BOTH PRODUCTS (N = 77)	SIDEBOARD (N = 38)	GOOSENECK LAMP (N = 39)
Realism	AR – ni_VR	(U = 742.000, p = 0.991)	(U = 130.000, p = 0.146)	(U = 237.000, p = 0.194)
	AR – i_VR	(U = 880.000, p = 0.134)	(U = 217.000, p = 0.297)	(U = 225.500, p = 0.322)
Angle	**AR** – ni_VR	(U = 507,000, p = 0.014)	(U = 112,000, p = 0.046)	(U = 148.500, p = 0.247)
	AR – i_VR	(U = 720.000, p = 0.823)	(U = 175.500, p = 0.885)	(U = 187.000, p = 0.945)
Usefulness	**AR** – ni_VR	(U = 600.000, p = 0.132)	(U = 99,000, p = 0.017)	(U = 200.000, p = 0.792)
	AR – i_VR	(U = 678.500, p = 0.502)	(U = 143.000, p = 0.284)	(U = 197.000, p = 0.857)
Trust	AR – ni_VR	(U = 667.000, p = 0.427)	(U = 117.000, p = 0.065)	(U = 210.000, p = 0.569)
	AR – i_VR	(U = 773.000, p = 0.734)	(U = 173.000, p = 0.840)	(U = 213.000, p = 0.531)
Easiness	AR – ni_VR	(U = 791.000, p = 0.591)	(U = 148.000, p = 0.354)	(U = 242.000, p = 0.149)
	AR – i_VR	(U = 797.500, p = 0.549)	(U = 169.500, p = 0.751)	(U = 221.500, p = 0.380)
Comfort	AR – ni_VR	(U = 885.000, p = 0.124)	(U = 188.500, p = 0.817)	(U = 254.500, p = 0.070)
	AR – i_VR	(U = 712.000, p = 0.760)	(U = 140.500, p = 0.246)	(U = 207.500, p = 0.627)
Satisfactory experience	AR – ni_VR	(U = 718.500, p = 0.809)	(U = 150.000, p = 0.385)	(U = 208.000, p = 0.627)
	AR – i_VR	(U = 774.500, p = 0.720)	(U = 181.000, p = 1.000)	(U = 203.500, p = 0.708)
Fun	**AR** – ni_VR	(U = 525,500, p = 0.021)	(U = 126.000, p = 0.116)	(U = 131.000, p = 0.101)
	AR – i_VR	(U = 799.500, p = 0.516)	(U = 205.000, p = 0.488)	(U = 192.500, p = 0.945)
Interactivity	**AR** – ni_VR	(U = 554,500, p = 0.041)	(U = 122.000, p = 0.091)	(U = 155.000, p = 0.336)
	AR – i_VR	(U = 820.000, p = 0.345)	(U = 212.000, p = 0.370)	(U = 200.000, p = 0.792)
Immersivity	**AR** – ni_VR	(U = 523,000, p = 0.018)	(U = 114.500, p = 0.053)	(U = 148.500, p = 0.247)
	AR – i_VR	(U = 856.000, p = 0.162)	(U = 216.500, p = 0.297)	(U = 211.000, p = 0.569)
Availability	AR – ni_VR	(U = 917.000, p = 0.061)	(U = 202.000, p = 0.544)	(U = 257.000, p = 0.061)
	AR – i_VR	(U = 546,500, p = 0.041)	(U = 110,000, p = 0.040)	(U = 164.500, p = 0.478)
Tangibility	AR – ni_VR	(U = 768.000, p = 0.772)	(U = 191.500, p = 0.751)	(U = 194.000, p = 0.923)
	AR – i_VR	(U = 889.500, p = 0.114)	(U = 247.000, p = 0.053)	(U = 203.500, p = 0.708)
Decision	AR – ni_VR	(U = 605.500, p = 0.140)	(U = 119.500, p = 0.075)	(U = 179.000, p = 0.771)
	AR – i_VR	(U = 660.500, p = 0.388)	(U = 152.000, p = 0.418)	(U = 172.500, p = 0.627)
Expectation	AR – ni_VR	(U = 735.000, p = 0.949)	(U = 172.000, p = 0.817)	(U = 194.000, p = 0.923)
	AR – i_VR	(U = 732.000, p = 0.925)	(U = 196.000, p = 0.665)	(U = 170.500, p = 0.588)

Table S7: Significant differences between technologies, in the assessment of their properties and affective indicators. Results from Mann Whitney U tests, for independent samples. (U: Mann Whitney U coefficient; p: Asymptotic Sig (2-saided test)). Significance level: $p < 0.05$. Significant differences are marked with gray cells, and the technology with the highest rating is in bold.