An Empircal Study on the Effects of Knowledge

- Strategy using Balanced Performance Model

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Abstract

ABSTRACT

An Empirical Study on the Effects of Knowledge
- Strategy using Balanced Performance Model

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Department of Shipping Management

The Graduate School of

Korea Maritime University

The current world economy has changed from capital based economy to knowledge based economy. It means that company has recognized knowledge as a core. Strategic power for its survival and prosperity and has come to have new management paradigm, so called knowledge management for increasing company competitiveness.

However, it is not easy to measure the outcome of knowledge management since it is invisible.

This study uses the balance performance model of Kaplan and Norton to effectively measure the outcome of knowledge management.

The purpose of the study is to show the importance of knowledge management as a management renovation method for increasing competitive power and improving company values.

This study suggests four performances measurement factors and shows how they influence the competitiveness of a company by an

empirical research.

A questionary survey was done to get the research results on a randomly chosen set of large Korea domestic companies which started to knowledge management.

The statistical analysis was done with SPSS 8.0, and the reliability co-efficient total sample was 95.58%.

According to factor analysis, 6 variables were factor 1(management renovation and knowledge ability), 8 variables were factor 2(inner process), 5 variables were factor 3(financial factor), 4 variables were factor 4(customer value).

Using the above 4 factors as independent variables, a multiple regression analysis was done to show how they influenced the four dependent variables of this study; the regression analysis showed that all the four independent variables were positively related to the four dependent variables.

All the 16 hypothesis describing these positive relationships were accepted. Especially the factor 1(management renovation and knowledge ability) was found to be the most dominant factor influencing the dependent variables except the inner environment correspondence ability.

This strongly supports the major assertion of this study that it is not financial factor any more , but knowledge that makes a company competent in today's business environment.

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1)   ,   , 1998, 9   , p.2.

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Kritzner(1997)

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2) Krizner I. M., "Entrepreneurial Discovery and the Competitive Market Process An Austrian Approach". *Journal of Economic Literature*, Vol. 35, 1997, pp.60-61.

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3)   ,   , 21   , 1999, p.1-6.

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(Factor Analysis)   (Principal

Components Analysis)   .

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(Multiple Regression Analysis)   .

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(1993) '   '   20

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4) Druker, P. F., *Post- Capitalist Society,* Oxford. Butterworth Heinemann, 1993,
pp.198- 199.

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(fact)   (data)

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.   (information)

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.   (knowledge)

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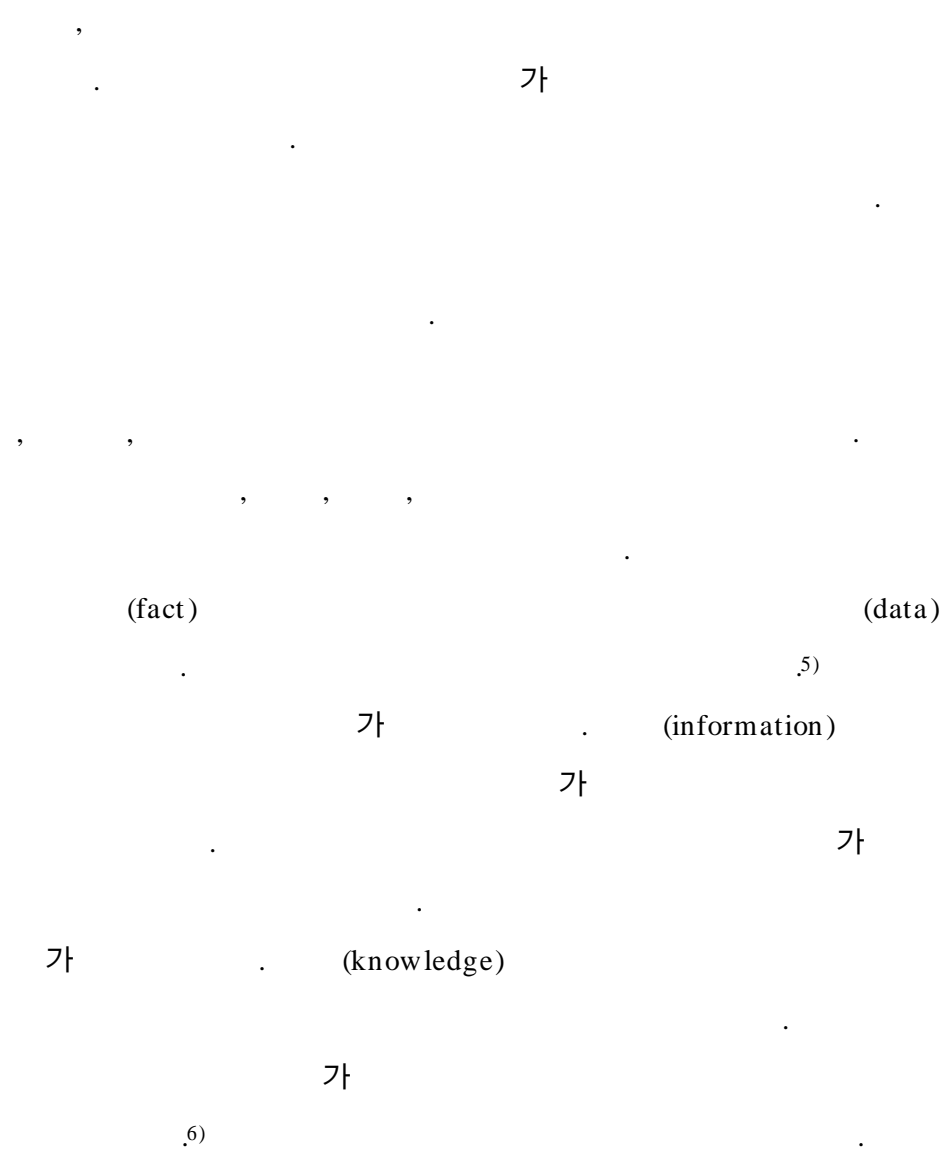
5) Pastor R., *The Importance of the Getting Smart*, CIO, March, 1995, p.63.
6)   ,   ;   ,   , 1997,   pp.202-203.

.7)

(wisdom)   .

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        Broking (1996)   ,   ,

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        Nonaka (1996)   ,   ,   ,

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        Stewart (1997)   ,   ,   ,   ,   ,

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                                    .10)

7) Tobin D. R., *Knowledge and Skill* : The Keys to Company Success, The Knowledge-Enabled Organization. AMACOM, 1998, p. 24.
8)   ,   , 1997, p. 202.
9)   ,   , 21   , 1998, p. 93.
10) Stewart, T. A., *The Treasure Map* : Intellectual Capital, Doubleday Currency, 1997, pp.171-172.

Krogh(1998)

(cognitive perspective)

(construction perspective)   .

                              .   .

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                                                      .[11)

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Nonaka   4

        .

·   (socialization):   ,   ,

·   (externalization):

·   (combination):

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11) Krogh,G., "Care in the Knowledge Creation," *California Management Review*, Vol. 40, 1998, p. 133.

· (internalization):

Brooking(1996)

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<   2- 1>

:   (1998), p. 116.

Stewart(1997)   ,   ,

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· (human capital):   ,

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·　　　　　　　(structural capital)：

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·　　　　　　(customer capital):

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1983 1998 3 .

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Druker(1993) ' (knowledge

worker)'

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(intellectual capital : knowledge capital) .

1991 Stewart "

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Prusak(1996) "

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1 (1983- 1990)	· 1959 penrose 1990 prahalad and Hamel · Vian (1983)Glaser(1988)
2 (1991- 1995)	· · (1991, 1995) · , Orlikowski(1983) Collins(1995) heonard Barton(1995)
3 (1996- 1998)	· . · Spender(1996) Drew(1997) Devenportet. al(1998) · 1996 . · , , .

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Macintosh (1998)

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.13)   .

Barclay   Murray   ,

,   (best practice)

.14)

Nonaka (1998)   '

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12) Karl, Erik, Sveiby, *Intellectual Capital and Knowledge Management*, 1998,
   (onoline available) URL ; http://www.sveiby.com.au/IntellectualCapitalpubs.html.
13) Macintosh A., *Knowledge Management*, 1998,
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   Press, 1995, pp. 167-169.

Prusak(1998)

.16)

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16) Prusak L, *Introduction to Knowledge in Organizations*, Butterworth Heinemann. 1997, p. 168.

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Balanced Score Card)'   .

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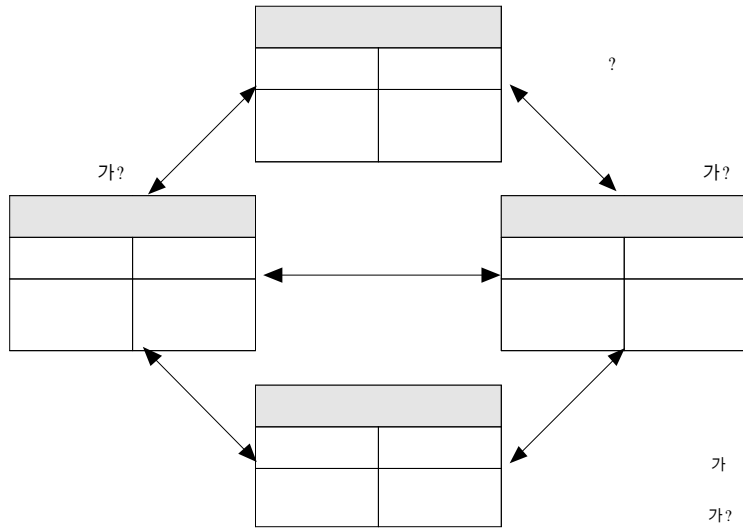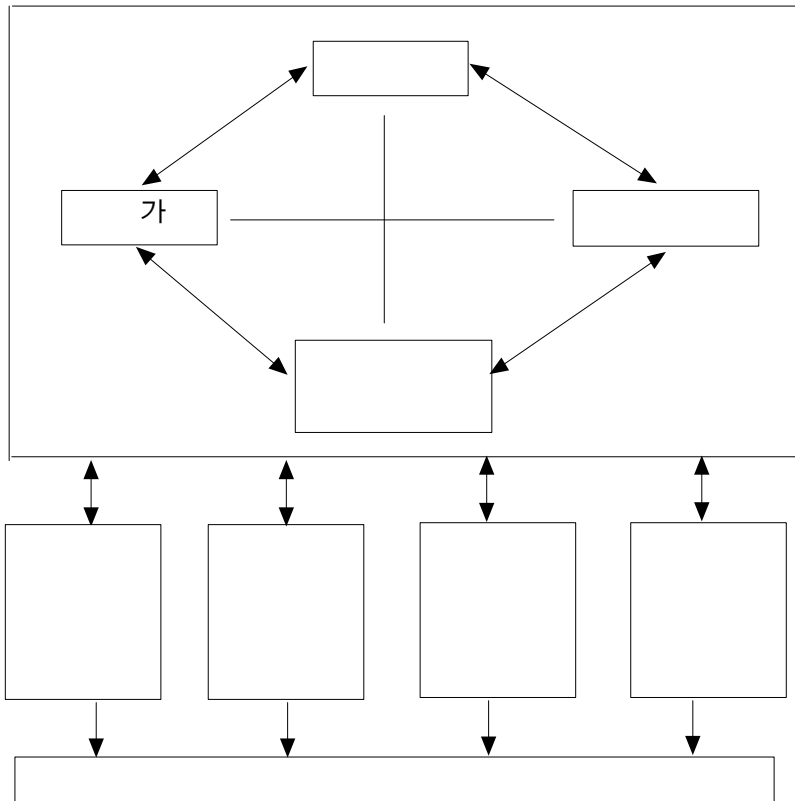
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(Survey Research)

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(Reliability)

Cronbach's Alpha

(Construct Validity)   (Factor Analysis)

.

(principal components)   ,

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(Determinant of Correlation Matrix)   .0000000   ,

                                                        KMO

(Kaiser-Meyer-Olkin Measure of Sampling Adequacy)   0.92656

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Bartlett   (Bartlett Test of Sphericity)   1797.4021

                 0.00000   [17].

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        , 6   (   )

        , 8   (   )   .

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                                        (1),   (2),

            (3),   (4)   .

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17) Hair, Anderson, Tatham and Black, *Multivariate Data Analysis*, 5th,
    Prentice-Hall, 1998, pp.120-131.
            ,   , SPSSWIN   ,   , 1998, pp.185-196.

,   (ALPHA   )

                                    .   (4   )

        (   )   95.58 %   ,   ,

        ,

90.88 %,   91.41 %, 84.07 %, 84.28 %

                              .

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		(Factor)				(Communality)
		1	2	3	4	
(1)	,	**.75827**	.32620	.26055	.12356	.74194
		.58996	.13205	.12402	.47396	.60550
		.69646	.25063	.28982	.25621	.69742
		.60876	.31319	.32784	.19748	.61515
		.67792	.36219	.29481	.19595	.71607
		.74896	.28348	.27184	.16353	.76453
(2)	,	.58330	**.59725**	.05722	.28639	.78223
		.23879	**.67497**	.33479	.15756	.64951
		.18170	**.65535**	.38014	.26011	.67467
		.33253	**.61866**	.05312	.21770	.54353
		.45442	**.62485**	.26873	.05147	.67810
		.42952	**.59524**	-.02736	.33923	.65462
		.16969	**.80778**	.26358	.18249	.78408
		.20804	**.62933**	.31661	.25312	.60366
(3)		.21257	.10338	**.77648**	.21055	.70312
		.39326	.13023	**.59948**	.24094	.58904
		.46327	.28391	**.57860**	.06577	.63433
		.10645	.32182	**.68470**	.20671	.62645
		.29225	.36350	**.58542**	.20112	.60071
(4)		.45398	.13240	.29835	**.54361**	.60816
		.37837	.28869	.22806	**.67858**	.73899
		.21698	.22728	.18615	**.82422**	.81272
		.04995	.29009	.23944	**.72940**	.67600
		11.74591	1.30041	1.24443	1.20351	
		51.1	5.7	5.4	5.2	

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			(ALPHA)	
(　　1)	,	CKS CON KAU MHS MIC CKS	.9088	
(　　2)	,	CBS EES ETC EUC KSS MOC PEC SRE	.9141	N=114
(　　3)		CHS CRC MSC RCC ROE	.8407	
(　　4)		MRC REL SAT SER	.8428	

2.

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$$Y_j = \beta_j + \beta_{1j}*X_{1j} + \beta_{2j}*X_{2j} + \beta_{3j}*X_{3j} + \beta_4 j*X_{4j}$$

Y_j :   [(ENV),

(INV),   (OW),

(STR)],

X_{1j} :   1(   )

X_{2j} :   2(   )

X_{3j} :   3(   )

X_{4j} :   4(   )

j :   (   ),   ,   i :   (   )

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	B			T		D-W
	.373608	.058639	.433458	6.371	.0000***	
	.156067	.058639	.181080	2.662	.0090***	
	.339157	.058639	.393513	5.784	.0000***	1.95098
	.298420	.058639	.346248	5.089	.0000***	
	4.096491	.058381		70.168	.0000***	
	R^2 = .49544 , R^2 = .47692 , F = 26.75734					
	= .0000					

(p　0.01 ; ***, p　0.05 ;**,　p　0.1 ;*)

$$ENV = 4.096491 + 0.373608*X1j + 0.156067*X2j + 0.339157*X3j$$
$$+ 0.298420*X4j$$

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R^2　　.49544　　　　F　　26.75734　　　　　　0.01

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.433458

0.01

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D-W(Durbin-Watson)   1.95089
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4 R^2
.45434   F   22.68982

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.386369

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	B			T		D-W
	.178414	.057368	.220042	3.110	.0024***	
	.313276	.057368	.386369	5.461	.0000***	
	.304721	.057368	.375818	5.312	.0000***	2.09863
	.275445	.057368	.339715	4.801	.0000***	
	3.921053	.057116		68.651	.0000***	
	R^2 = .45434, R^2 = .43432, F = 22.68982					
	: .0000					

(p 0.01 ; ***, p 0.05 ;**, p 0.1 ;*)

$$INV = 3.921053 + 0.178414 * X1j + 0.313276 * X2j + 0.304721 * X3j$$
$$+ 0.275445 * X4j$$

.220042

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B

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	B			T		D-W
	.394335	.057166	.453012	6.898	.0000***	
	.352308	.057166	.404731	6.163	.0000***	
	.263775	.057166	.303024	4.614	.0000***	2.30666
	.228737	.057166	.262773	4.001	.0001***	
	3.745614	.056915		65.811	.0000***	
	R^2 = .52990, R^2 = .51265, F = 30.71645					
	: .0000					

(p 0.01 ; ***, p 0.05 ;**, p 0.1 ;*)

$OW = 3.745614 + 0.394335 * X1j + 0.352308 * X2j + 0.263775 * X3j$

$+ 0.228737 * X4j$

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R^2 .52990   F   30.71645

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.453012

.404731,   .303032

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B

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2.30666

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S T R = 4 . 0 1 7 5 5 4 + 0 . 3 8 0 3 3 4 * X 1 j + 0 . 3 7 8 1 8 7 * X 2 j + 0 . 2 2 4 8 9 3 * X 3 j + 0 . 2 0 2 0 8 5

*** X 4 j**

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	B			T		D- W
	.380334	.050271	.470102	7.566	.0000***	
	.378187	.050271	.467448	7.523	.0000***	
	.224893	.050271	.277973	4.474	.0000***	1.90604
	.202085	.050271	.249782	4.020	.0001***	
	4.017544	.050050		80.271	.0000***	
	R^2 = .57916,		R^2 = .56372,		F = 37.50197	
	: .0000					

(p 0.01 ; ***, p 0.05 ;**, p 0.1 ;*)

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R^2

.57916 F 37.50179 0.01

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	+	+(***)	+	+(***)	+	+(***)	+	+(***)	
	+	+(***)	+	+(***)	+	+(***)	+	+(***)	
	+	+(***)	+	+(***)	+	+(***)	+	+(***)	

(p   0.01 ; ***)

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23 (Factor Analysis)

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12)   ,   , 21   , 1999.

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1) Tobin. D.R., *Knowledge and Skill* : The Keys to Company Success,Th e Knowledge-Enabled Organization, AMACOM, 1998.

2) Krogh. G., "Care in the Knowledge Creation" *Calfornia Managem- ent Review*, Vol. 40, 1998.

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12) Stewart. T. A., *The Treasure Map-Intellectual Capital*, Doubleday Currency, 1997.

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(21)   · | 1 | 2 | 3 | 4 | 5 |

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(28) | 1 | 2 | 3 | 4 | 5 |