6

6

2003                          15. 7%,
4                                          7. 6%,          13. 8%
.                    .
318                    ,          (Tool)           .
.
240      ,                ,                        ,
52. 9%, PC            10%,                                    .

<table>
<tr><td>1</td></tr>
</table>

## 1. 3D                                              (      )
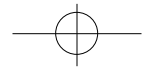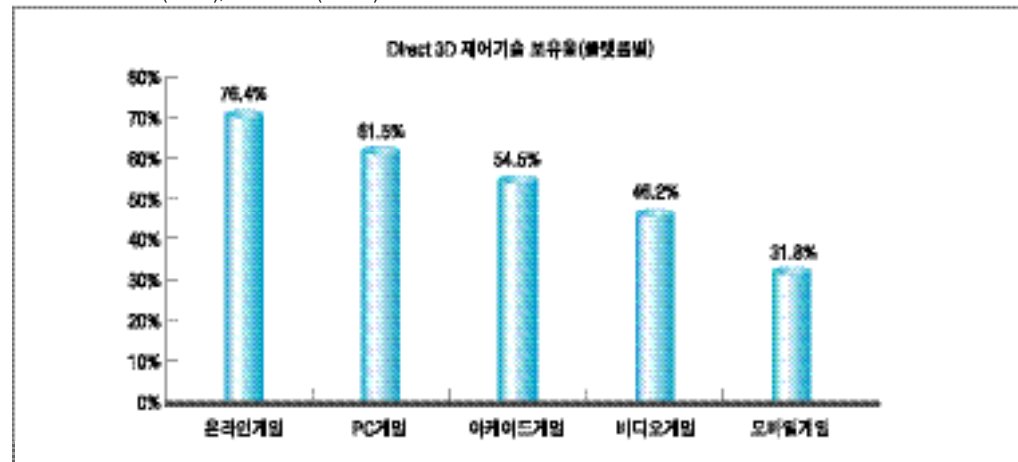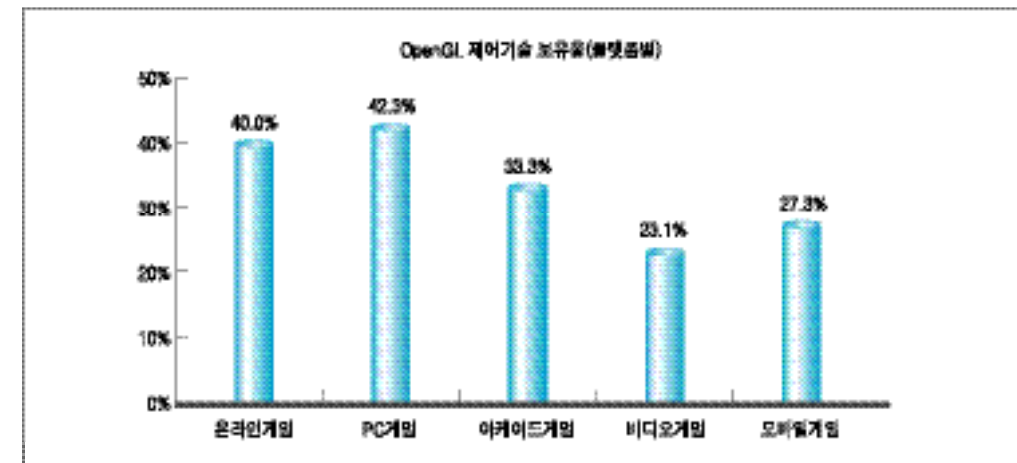
3D                            3D      . 3D
2002

< 　5- 6- 1- 01> Direct 3D                (      ) :            (N=110), PC    (N=26),          (N=33),
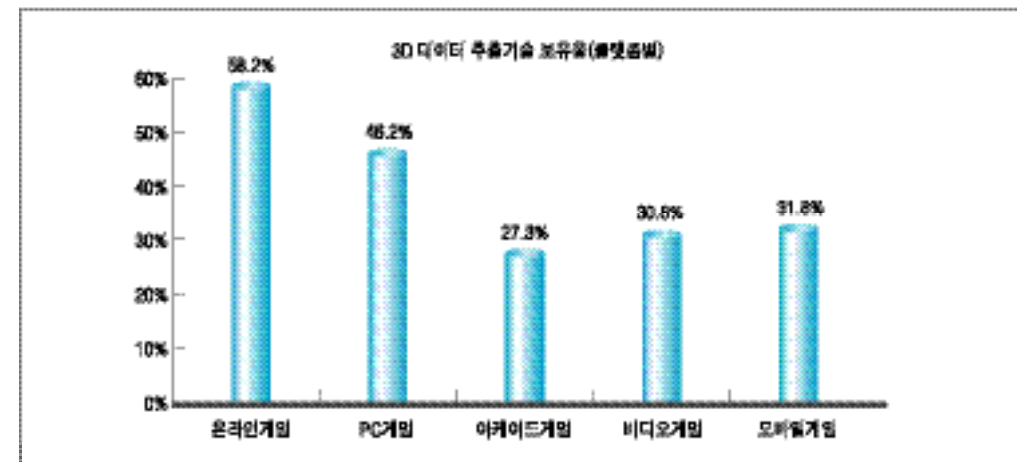(N=13),          (N=22)
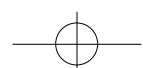


' OpenGL                '
,                  ' Direct 3D              36. 8%(      204            75     )
,                      204        131                , 63. 2%
64. 2%                          .                    .
' OpenGL              '
76. 4%, PC          61. 5%,                                    40%, PC
54. 5%,                            42. 3%,                          33. 3%,
46. 2%,                31. 8%                          23. 1%,
.                                      27. 3%    .

< 　5- 6- 1- 02> OpenGL                (      ) :            (N=110), PC    (N=26),          (N=33),
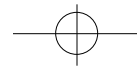(N=13),          (N=22)



< 　5- 6- 1- 03> 3D                    (      ) :            (N=110), PC      (N=26),              (N=33),
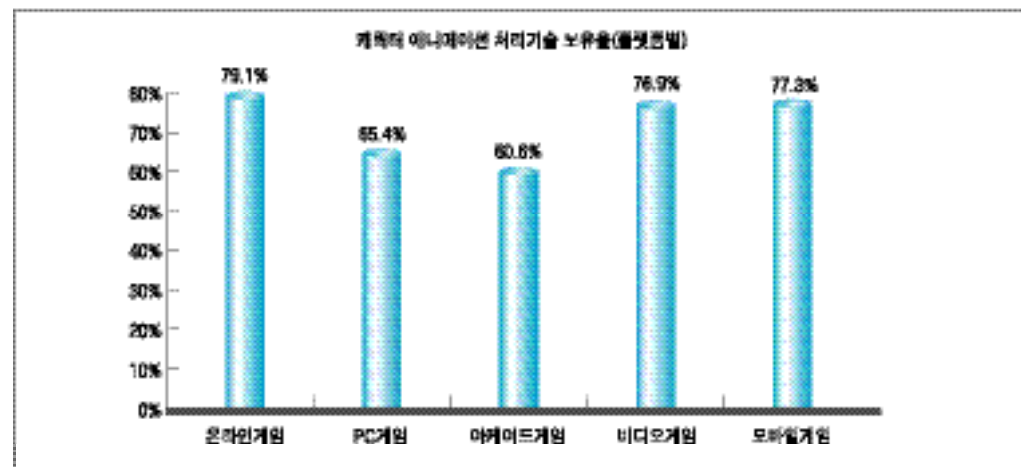(N=13),          (N=22)

6

‘ 3D              ’                            26%
         204        96      47.1%           . 3D                        ‘
                                               ,
         58.2%, PC          46.2%,                    2002          .
                 27.3%,                          ,                ,
30.8%,                 31.8%              79.1%, PC          65.4%,
                                    .                              60.6%,
‘                            ,                     76.9%                 ,
                                                  77.3%                .
         74%(       204             151    ),                        2002

< 5-6-1-04>                            (     ) :        (N=110), PC    (N=26),        (N=33),
                (N=13),       (N=22)

캐릭터 애니메이션 처리기술 보유율(플랫폼별)



< 5-6-1-05> 3D                   (     ) :        (N=110), PC    (N=26),        (N=33),
                (N=13),       (N=22)

3D 자동 제작 기술

< 5-6-1-06> DB                 (     ) :        (N=110), PC    (N=26),        (N=33),       (N=13),
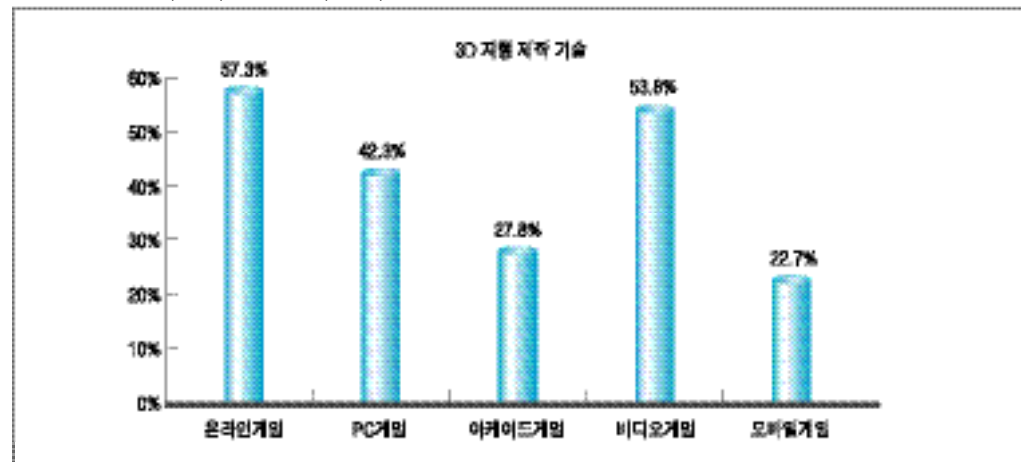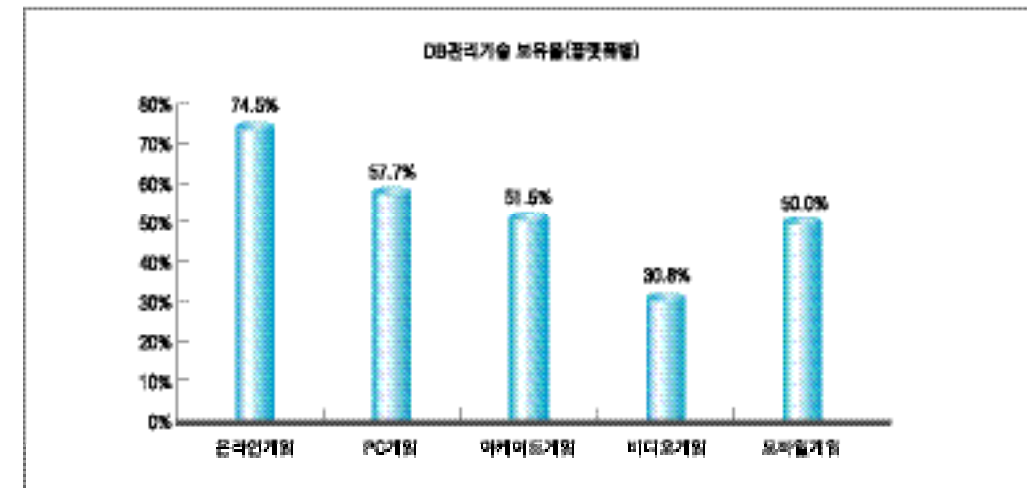         (N=22)        (N=13),        (N=22)

DB관리기술 보유율(플랫폼별)



            3D                                              .
                                  2002      3D                               ‘
         52.6%                        .                                  ,
‘ 3D              ’                                     204          112
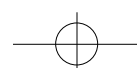                    46.6%(204            95                 54.9%                    .
         )                   .              57.3%, PC            69.1%, PC       50%,
42.3%,               27.8%,               36.4%,               46.2%,            22.7%
53.8%,               22.7% ‘ 3D                    ‘                   .
            ,                              .
                                                             7                98%
                                                      , 17%   7
                 .                                          , 2%                .
‘ DB           ’                        204
            129                                        204
      63.2%                        .                          805         3D
                    74.5%, PC                                             ;
      57.7%,                        51.5%,              ’   18.8%(151 )               ,
                    30.8%,                   ‘ Direct 3D              ’    16.3%(131
      50% ‘ DB             ’                  ); DB            ’    16%(129 );
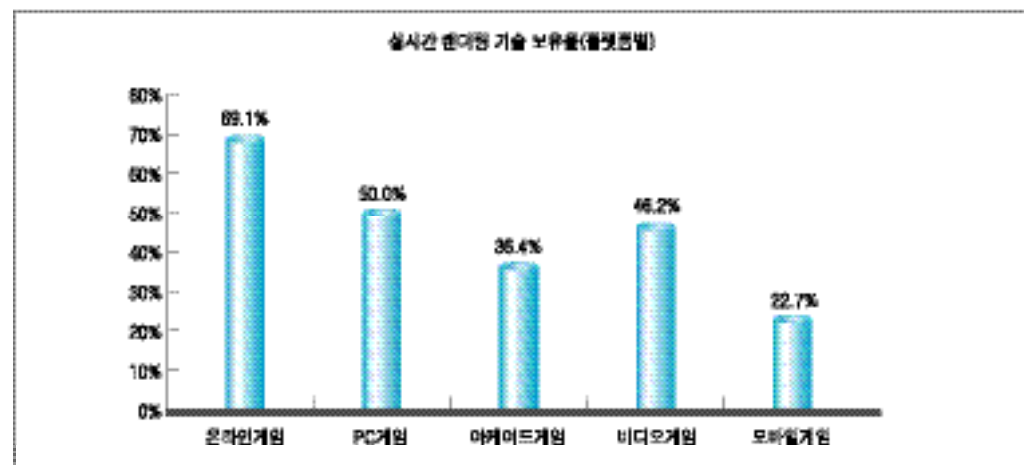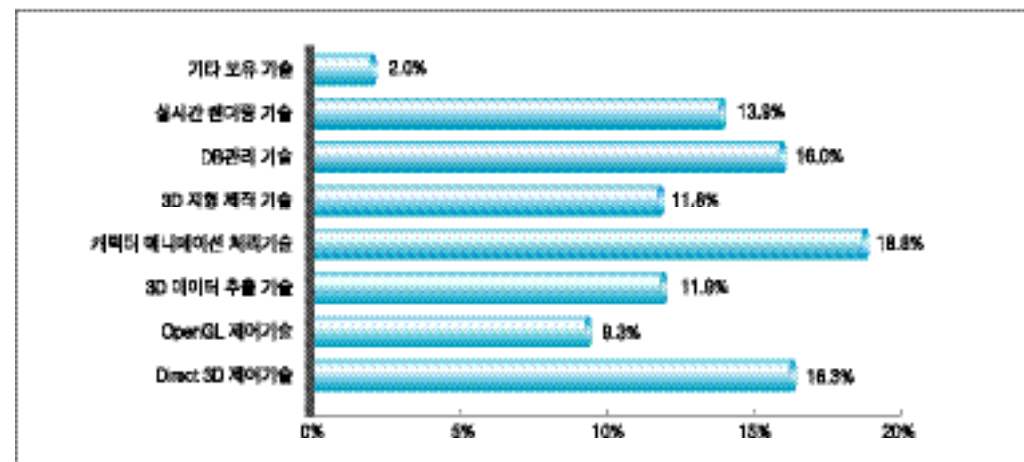
6

' 13.9%(112 ),' 3D
' 11.9%(96 ),' 3D ' ,
11.8%(95 ),' OpenGL ' 9.3%(75 ' ' 17.1%,
) . 2% ' Direct 3D ' 16.5%,' DB
' 16.1%,' ' 14.9%,
. ' 3D ' 12.5%,' 3D
3D ' 12.4%,' OpenGL '
8.6% .
' PC
' . '
' (17.7%),' Direct 3D

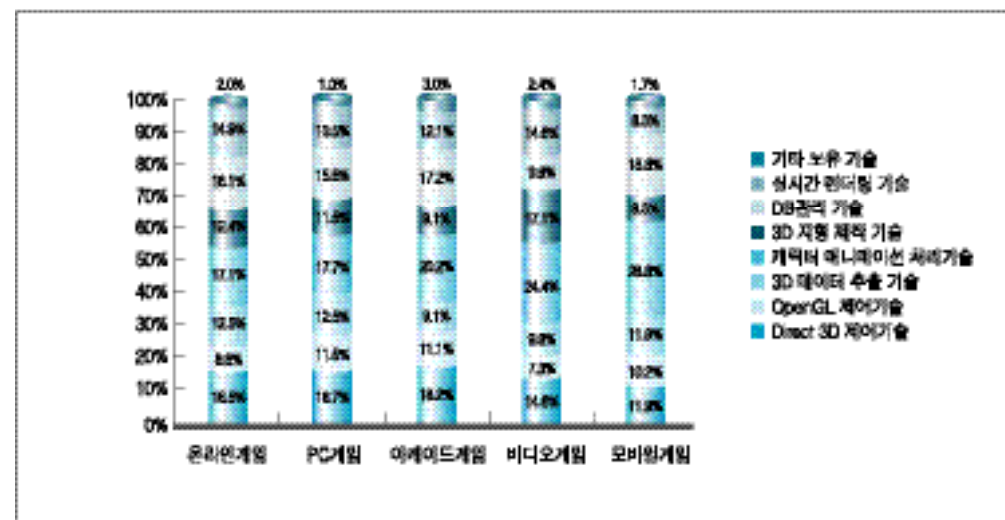< 5-6-1-07> ( ) : (N=110), PC (N=26), (N=33),
(N=13), (N=22)



< 5-6-1-08> 3D (N=805, )



'(16.7%),' DB '(15.6%),' (11.1%),' 3D '(9.1%),' 3D
'(13.5%),' 3D ' '(9.1%) .
(12.5%), ' 3D '(11.5%),
' OpenGL '(11.5%) '
. 28.8%,' DB ' 18.6%,' Direct 3D
' ' 3D ' 11.9%,
'(20.2%),' Direct 3D ' OpenGL ' 10.2%,' 3D
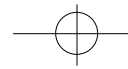'(18.2%),' DB '(17.2%), ' ' 8.5%
'(12.1%),' OpenGL ' .

< 5-6-1-09> 3D ( , ) : (N=510), PC (N=96), (N=99),
(N=41), (N=59)



2. ,
187 108
57.8% .
3D ,
60.2%, PC 72.7%,
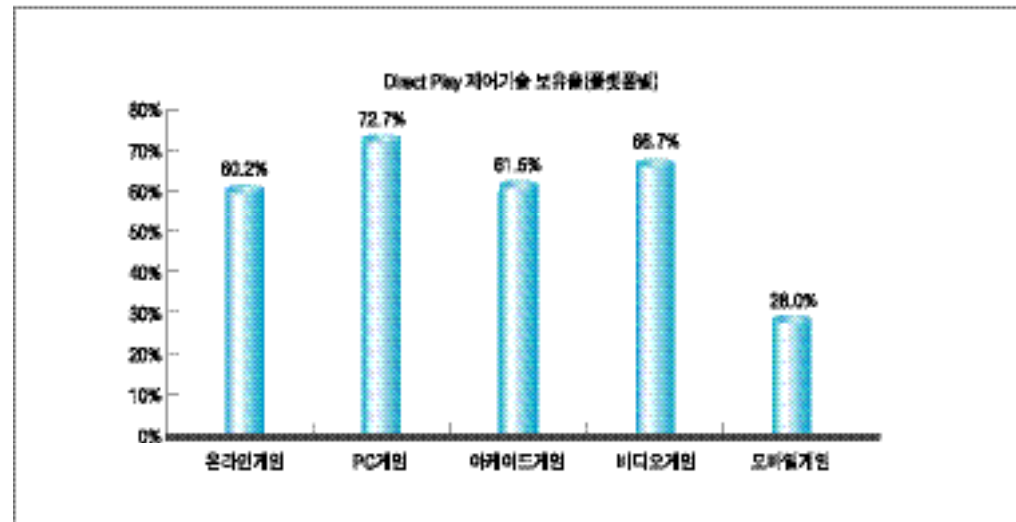( ) 61.5%,
66.7%, 28%
,' Direct Play ' .

6

'Winsock           '       60.4%       33.3%,                      60%
          187           113                        .
                    ,                     'MUG Server/Client Programming         '
        66.7%, PC           54.5%,                      55.6%(       187           104
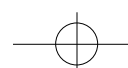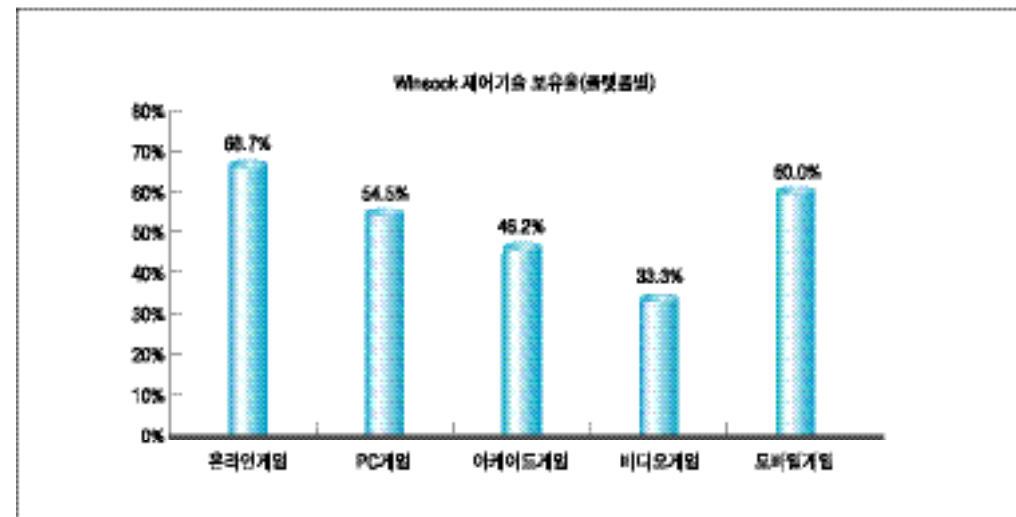                46.2%,                                    )

<        5-6-1-10> Direct Play              (      ) :                (N=108), PC     (N=22),           (N=26),
                  (N=6),         (N=25)



Direct Play 제어기술 보유율(플랫폼별)

<        5-6-1-11> Winsock                (      ) :              (N=108), PC     (N=22),            (N=26),
                  (N=6),         (N=25)



Winsock 제어기술 보유율(플랫폼별)

,                   69.4%, PC                  'Battle-net Server/Client Programming
        50%,                   23.1%,           '                   54%(       187           101
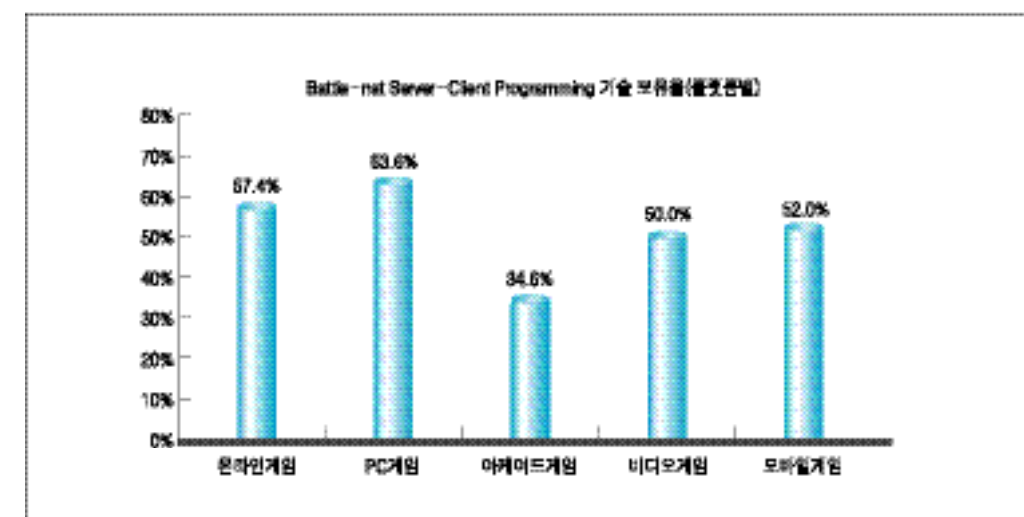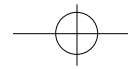              16.7%,              44%                      )   ,
'MUG Server/Client Programming       '                    57.4%, PC           63.6%,
                              .                               34.6%,

<        5-6-1-12> MUG Server/Client Programming        (      ) :          (N=108), PC     (N=22),
                  (N=26),         (N=6),         (N=25)



MUG Server/Client Programming 기술 보유율(플랫폼별)

<        5-6-1-13> Battle-net Server/Client Programming          (      ) :          (N=108), PC     (N=22),
                  (N=26),         (N=6),         (N=25)
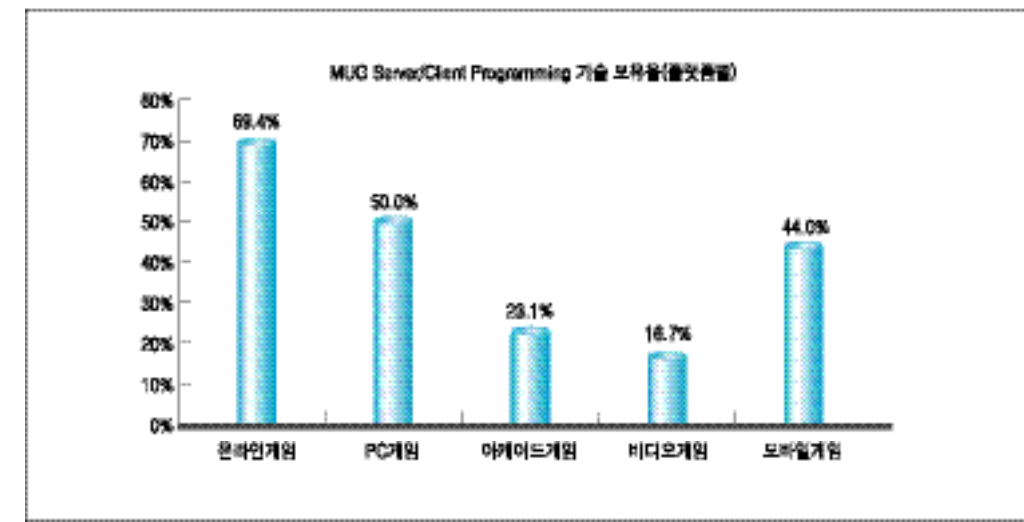


Battle-net Server-Client Programming 기술 보유율(플랫폼별)

5

6

50%,                    52%      .                  , PC              50%,
'    (   )              '          187              42.3%,                16.7%,
                        115                          48%
61.5%                        .                                    .
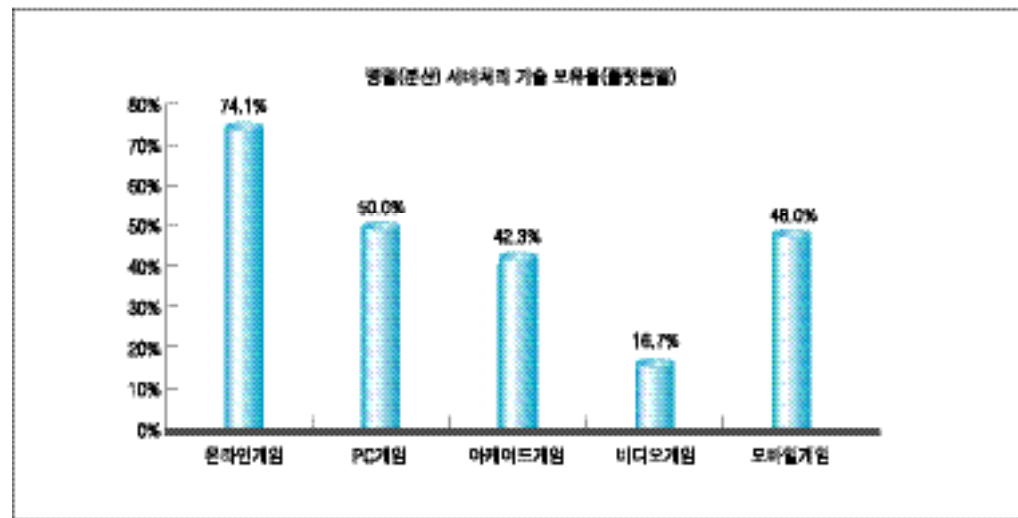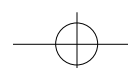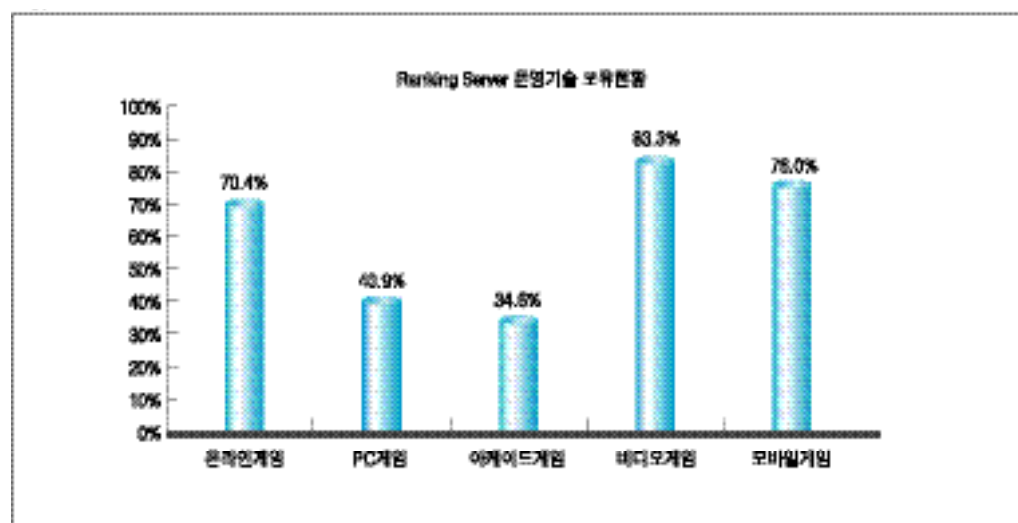                74.1%

< 　5-6-1-14>  (   )              (     ) :        (N=108), PC    (N=22),        (N=26),
                (N=6),        (N=25)



< 　5-6-1-15> Ranking Server              (     ) :        (N=108), PC    (N=22),        (N=26),
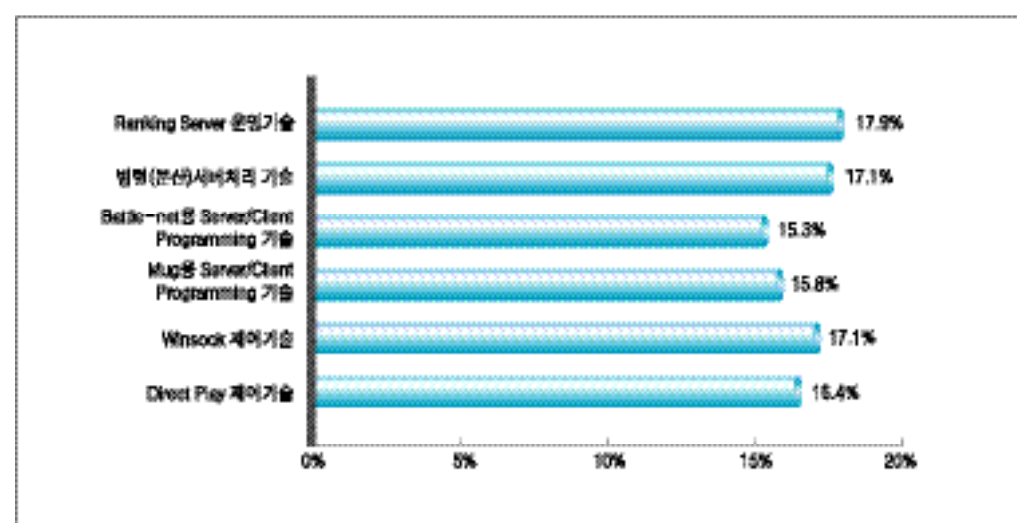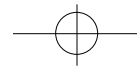                (N=6),        (N=25)

' Ranking Server              '          187      ' Battle-net   Server/Client Programming
        118              63.1%                    '  15.3%(101 )          15% ~ 18%
                        .                                            .
                            70.4%
            , PC          ,                                              ,  '
        ,                  ,                      (   )              '  18.6%          ,
        40.9%, 34.6%, 83.3%, 76%                      ' Ranking Server              '
                        6                  17.7%, MUG   Server/Client Programming
    98.9%                                      '  17.4%, ' Direct Play          '  15.1%,
    , 22.5%      6                      ' Battle-net   Server/Client Programming
    , 1.1%                                          '  14.4%                      .
                    .                      PC
                                                    21.9%              ' Direct Play
                        659                      '                  ; Battle-net
            ' Ranking Server              Server/Client Programming   '  19.2%
    '  17.9%(118 ), '      (   )                                          , ' Winsock
    '  17.5%(115 ), ' Winsock          '                  '  16.4%, ' (   )              ',
17.1%(113 ), ' Direct Play          '      ' MUG   Server/Client Programming
16.4%(108 ), ' MUG   Server/Client          '  15.1%, ' Ranking Server          ',
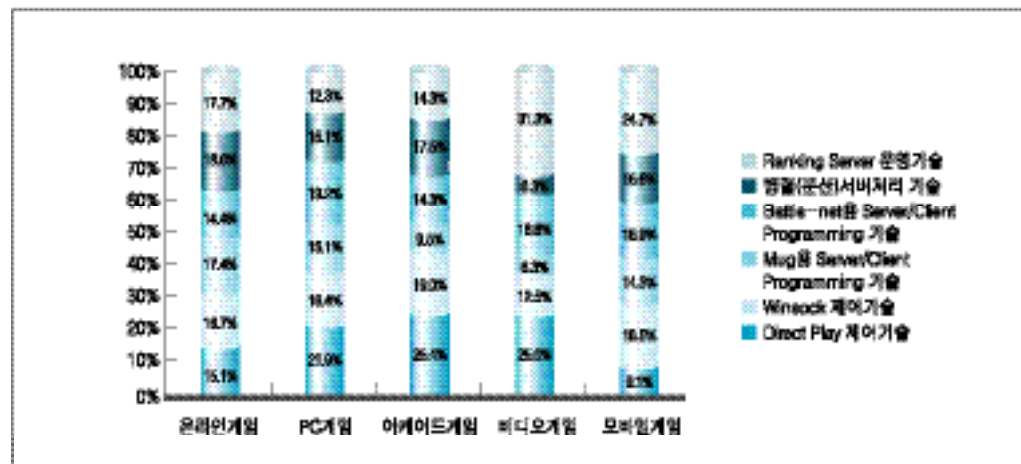Programming       '  15.8%(104 ),     12.3%                      .

< 　5-6-1-16>                  (N=659)

5

6

<　　5-6-1-17>　　　　　　　　　　　(　　,　　) :　　　　　(N=430), PC　　(N=73),　　　(N=63),
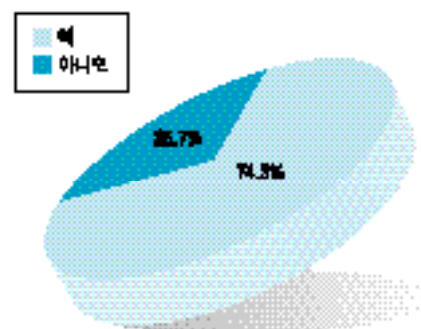(N=16),　　　(N=77)



'Direct　　　　　'24.7%, 19.5%, 16.9%,
Play　　　' 25.4%, 'Winsock　　　' 15.6%, 14.3%,　, 9.1%　　　　.
19%, '　(　)　　　　　' 17.5%,
'Battle-net　Server/Client Programming
　　　' 'Ranking Server　　　'
14.3%, MUG　Server/Client Programming
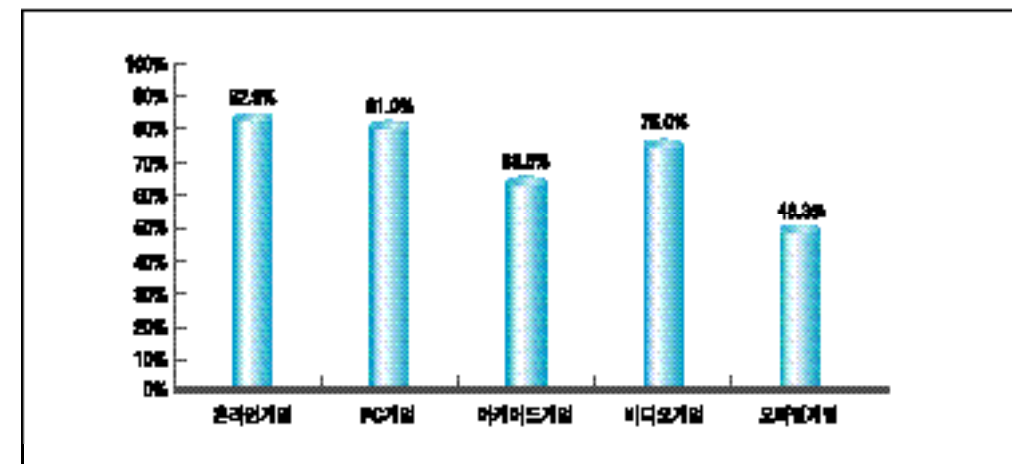　' 9.5%　　　　.
　　　　　　　' Ranking Server
　　' 31.3%

'Direct Play　　' 25%, Battle-
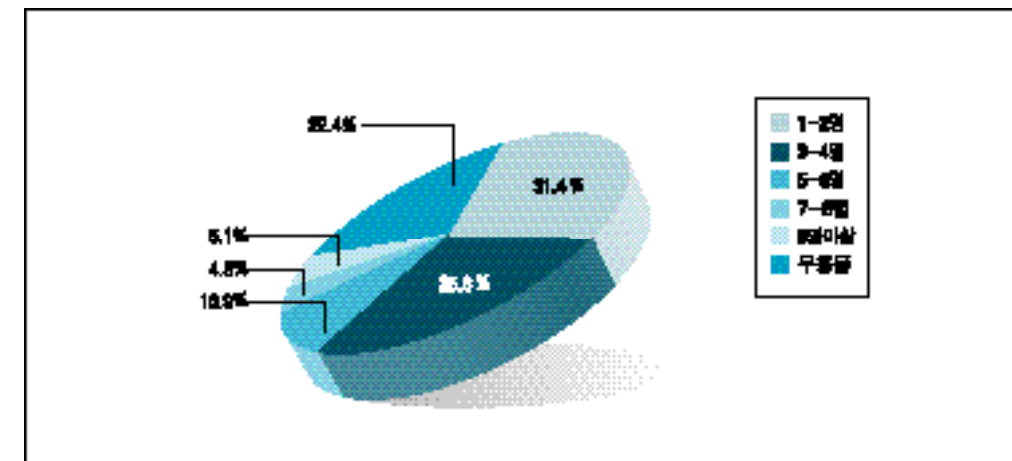net　Server/Client Programming　'
18.8%, 'Winsock　　' 12.5%
　.　'　(　)
' 6.3%　　.

'Ranking Server　　', 'Winsock
', 'Battle-net　Server/Client
Programming　', '　(　)
", MUG　Server/Client Programming
', 　'Direct Play　　'

<　　5-6-1-18>　　　(N=210)



3.

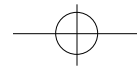<　　5-6-1-19>　　　(　) :　　　　(N=111), PC　　(N=21),　　　(N=33),　　　(N=16),
(N=29)



<　　5-6-1-20>　　　(N=156)



210　　　.　,
156　　　74.3%　48.3%
　.

　　　82.9%
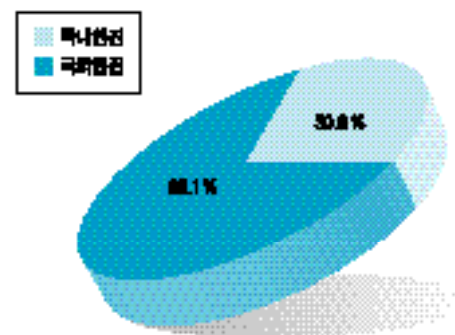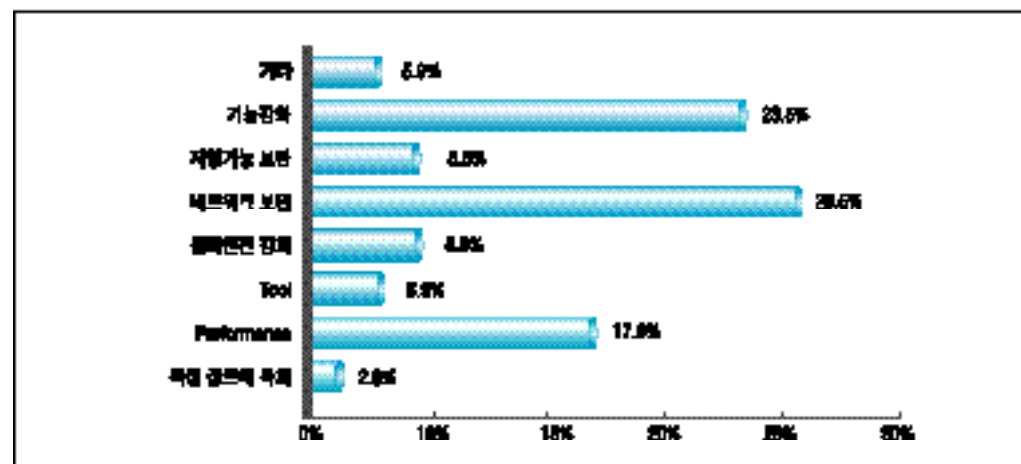, PC　　81%, 3.8　　,　1　　26
63.6%,
75%　　　.

6

<            5- 6- 1- 21>                    (N=156)



.                                                         82%

'  1~ 2   '

31. 4%           ', 3~ 4   '   25. 6%,                                 .

'  5~ 6   '  10. 9%,'  7~ 8   '   4. 5%,'  9

'  5. 1%                                   6. 4%                      ,

4. 5,

,                                    2. 6%,              <          >

69. 9%                                   1. 9%              .

,

14. 7%                                              ,' RPG'

<            5- 6- 1- 22>                      (N=174,          )



30. 5%                    ;            '                     '            10. 3%, Terrain'

,                                      8. 8%,          '  ' 2D          7. 4%,

12. 6%,          '  1               '  9. 8%,'  '                     5. 9%,'              '

'  8. 6%,'                '  6. 9%          4. 4%                     .

.  5                                                13. 2%

23. 6%          ,                            .

.

'                    (Animation      )'

', 3D          (      , Animation,                22. 6%                    ,

Editor    )'        42. 6%                    ,          '                  Performance'    13. 2%,'

<            5- 6- 1- 23>                      (N=68,          )



<            5- 6- 1- 24>                      (N=53,          )

5

**6**

'        11. 3%,' Terrain'      7. 5%,'                              ','  NETIMMERSE
'   ,   '                          5. 7%,'           '         .
'  ' Tool'          3. 8%                  .

                      ,                             ,                              .

26. 5%                        ;         '
      23. 5%,' Performance'      17. 6%,
                              ,  '  ,
8. 8%,' Tool'          5. 9%,'                              .
    2. 9%
                .

68              47        69. 1%
                    ,            30. 9%

63%
10. 9%,'            '      6. 5%
          , 2002

                  ,            '               ','     20%,' 2
'        19%,' 3          '      15%,' 4        '
  2%,' 5        '    9%,          8%                  .

                  ' 2            '        32. 3%                      **4.**
  ,' 3              '      13. 5%,' 4            '
5. 2%,' 5          '        19. 8%,' 6          '
8. 3%,' 7            '      11. 5%,          9. 4%

' 1              '      27%

<           5- 6- 1- 26>                        (N=68)



<           5- 6- 1- 27>                          (            )        (N=100)



<           5- 6- 1- 25>                          (N=34,        )



<           5- 6- 1- 28>                          (            )        (N=100)

6

．

，                                          34. 5%(              58

20     )                    ，

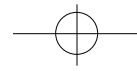30. 5%(         190            58    )                   27.6%,             6.9%,

5. 2%

．

29. 9%, PC            39. 3%,

28. 9%,                    33. 3%,

25%                              ，
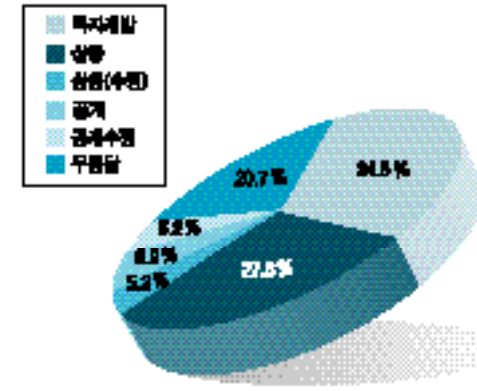
．

< 　5- 6- 1- 29>                              (N=190)                  ，                   (23%),

(17%),                 ，             ，

8. 5%          ．

30%              ，



< 　5- 6- 1- 30>              (    ) :              (N=77), PC       (N=28),            (N=38),           (N=18),
(N=28)



< 　5- 6- 1- 31>                          (N=58)  < 　5- 6- 1- 32>
(N=178)




62. 4%(          178            111    )                                       ．

S/W

．

．                                                   S/W                        ，

60. 6%(          241            146    ),

41%                  ，       ‘                   ’                          28. 2%,

‘                   ’                     11. 2%

14%,                11%                     ．

，             22%                                                      88. 8%

．                                              ．

‘                     ’                     ，

11. 2%                                                                  ，

## 5.        S/W

S/W                                      ，                          ．

S/W

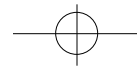55. 8%(          242

135    )         S/W                  233                   ，  ‘              ’
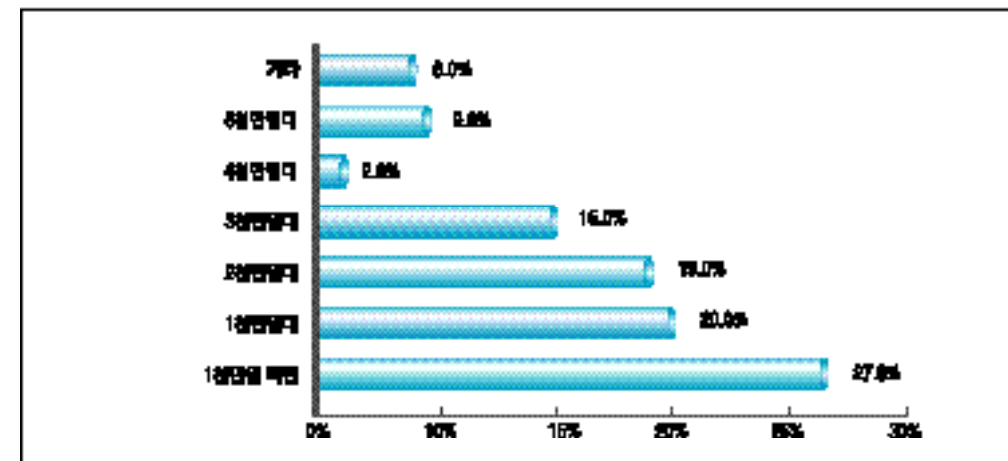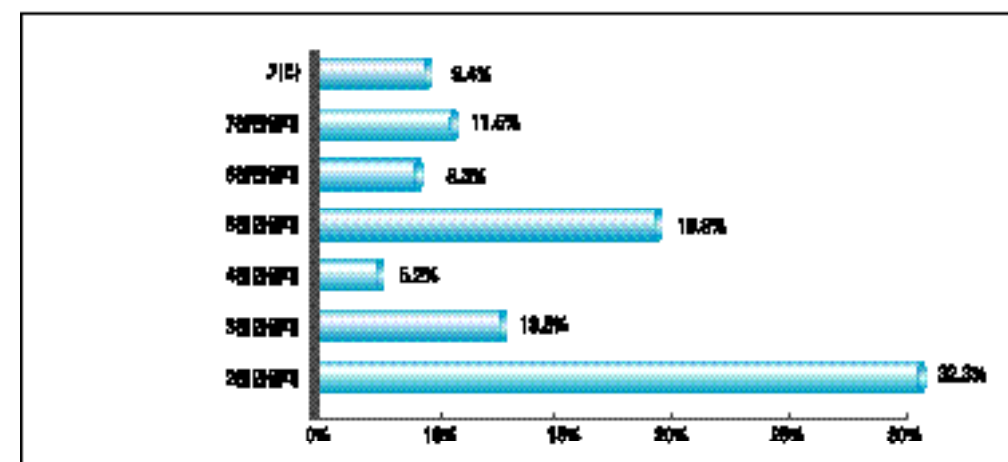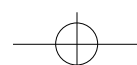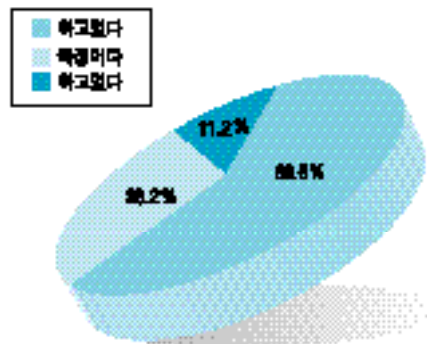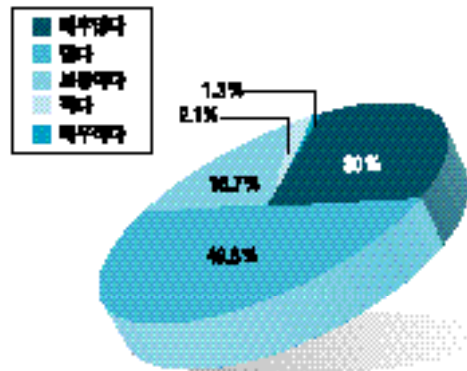
6

< 5-6-1-33> (N=241)



< 5-6-1-34> (N=233)
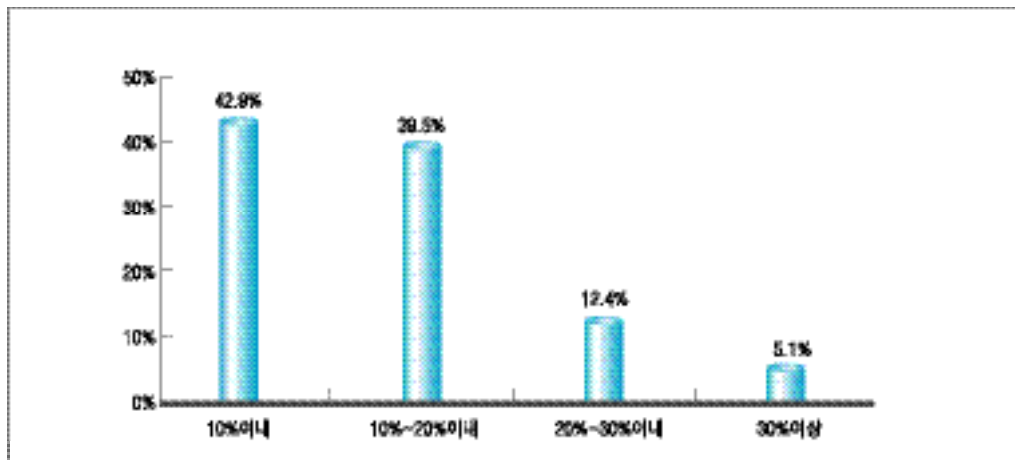


30%,' ' 49.8%,' ' 39.5%,' 20%~30% ' 12.4%,
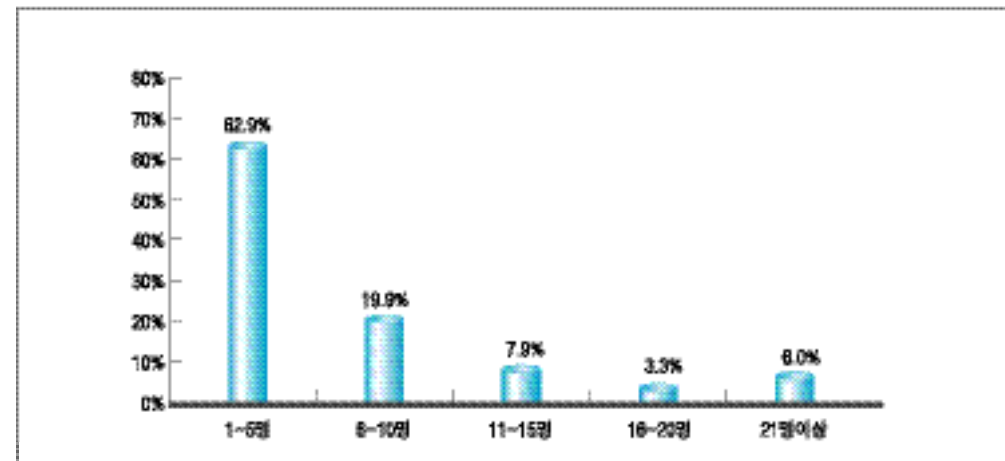' 16.7%,' 2.1%,' ' 1.3% ' 30% ' 5.1% .
. (82.4%)
20% ,
79.8%
5% .
.

' 1~5 ' 62.9%
' 10% ' ;' 6~10 ' 19.9%;' 11~15 '
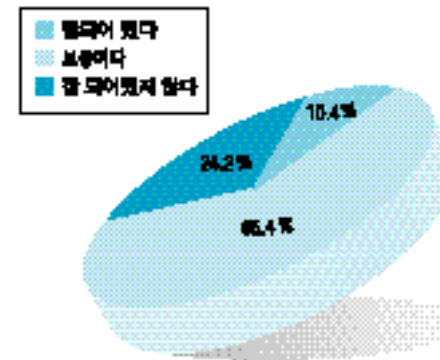42.9% ,' 10%~20% 7.9%,' 16~20 ' 3.3%,' 21 '

< 5-6-1-35> ( ) (N=177)



< 5-6-1-36> (N=151)



< 5-6-1-37> (N=211)



, ( )
6% .
.
, ( )
' 10.4% ;' ,
' 65.4%,'
24.2%
.
.
' ( )'
(81.4%),
,

6

11.8%                    ,          16.5%                          ,
          2.5%                                26.3%              .
.   S/W

.

51.7%                                          ,

**2**

1.                                                    '        12.9%,' 3D              ' 11.4%,
                                          '                          ' 8.2%,' I/O Device
                                    ' 4.1%                        .
                                        DB                    ,
                    , 2002                ,
' 3D                  '                          ,                              .
          , 2003            '              ' 18.8%
                      .                    ,                      ' 3D
          ' 3D            '  17%,' 2D                      ' 19.7%,' 2D
                  '  16.7%;'                        ' 16.2%,'            ' 15.5%,' 3D

'          12.7%,'                    ,' 3D              ' 14.7%,'
      ' 11.3%,'              ' 9.9%,' I/O              ' 11.8%,          '
Device            ' 4.2%          8.8%,'            5.9%        .
                .
      PC                '                ' 23.9%                    '        '
                              ,                    25.7%,'              ' ' 2D
' 3D              ' 21.7%,'                          17.1%,' I/O Device
        ' 15.2%,' 2D                    '                ' 8.6%,'          ' ' 3D
13%,'            ' 8.7%,' I/O Device            '                  5.7%          .
            ' ' 3D            '
      4.3%              .
                        '                  ',    2.
' 2D              ',' 3D                ',
'                    ", 3D              ,                                  ' 3D
'                ',' I/O Device                    23.2%              ,
,                              ' 3D              ' 17.5%,'      '
      ,      22.6%, 16.7%, 14.3%,                ' 16.6%,'          '
13.1%, 10.7%, 7.1%, 3.6%        .          16.1%,          10%, I/O Device
                  ' 3D              '        3.8% 2D
'    2D            '          1.4%            .
23.5%                              11.4%                ,

5

6
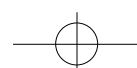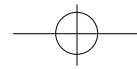
， ， PC ‘ 3D
． ’ 26.5%
‘ 3D ’
， ， ‘ 3D 23.5%; ’ 17.6%,
‘ 23.6%; ’ 14.7%; ’ 5.9%
20.2%; ‘ 3D ’ 18%,
’ 11.2%; ’ 10.1%,
‘ I/O Device ’ 4.5%; 2D ‘ 3D ’ 26.8%; ’
’ 1.1% ’ 19.5%,
． 17.1%; 3D ’ 7.3%, ‘ I/O

< 5- 6- 2- 03>          (N=211,    )
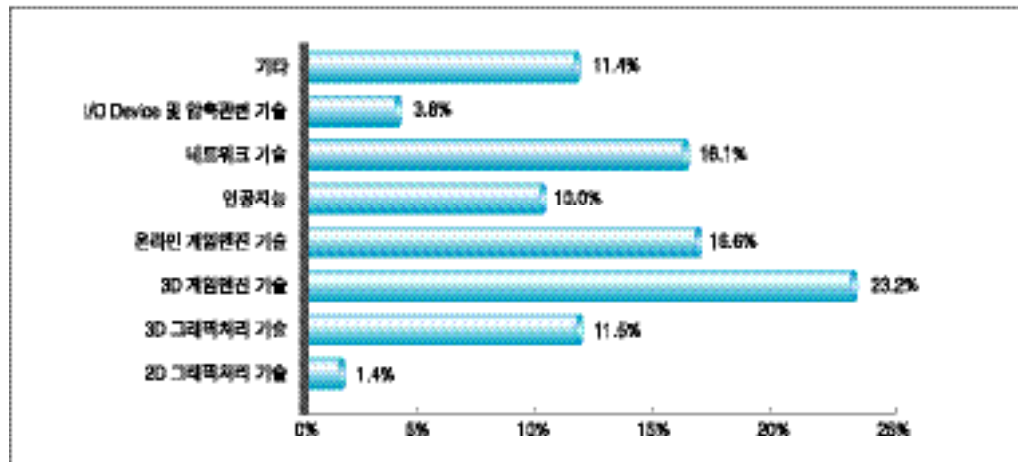


< 5- 6- 2- 04>          (     ，      )
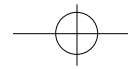：          (N=89), PC (N=34),   (N=41),   (N=23),   (N=24)
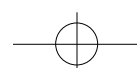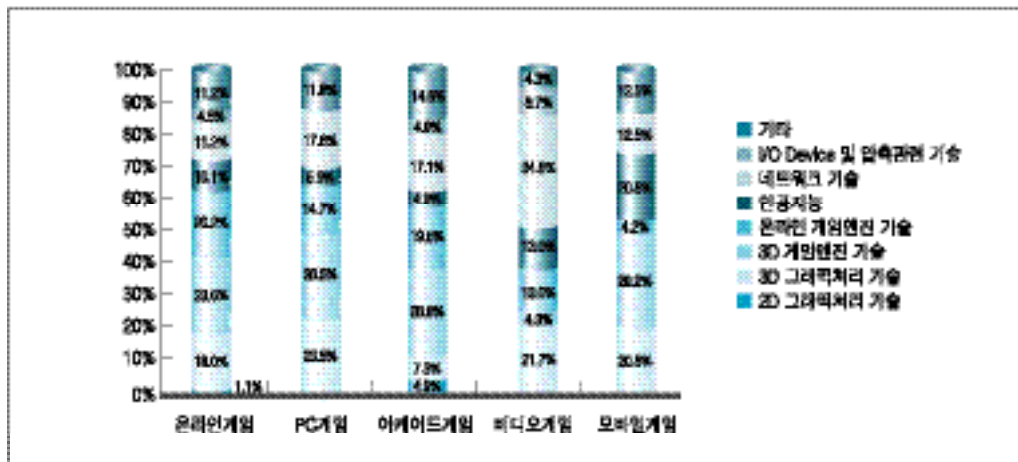


Device ’ ‘ ’ ,
‘ 2D ’ 4.9%. 1~ 2
. ‘ 2002
’ 24.4% .
‘ 34.8% , 2002
.
‘ 3D ’ 21.7%, .
‘ 13%; I/O Device ‘ 3D ’ 20.6% 1¯ 2
’ 8.7%; 3D ,
4.3% . ‘ 3D ’,
‘ 3D ’
29.2% . .
3D ’ 13.9%,
. ‘ 3D ’ 12.4%;
‘ ’ 3D ’ 12%, I/O Device
‘ 20.8% ‘, ’ 8.6%; 2D ’ 2.4%
12.5%; ‘ ’ 4.2% .
.

**3.** (5.7%) ，

< 5- 6- 2- 05>          (N=209,    )
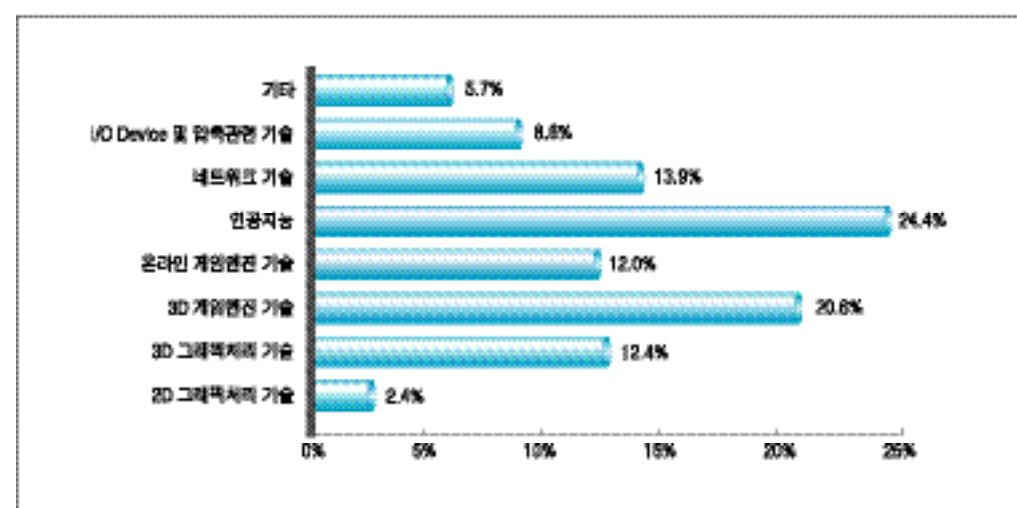
**6**
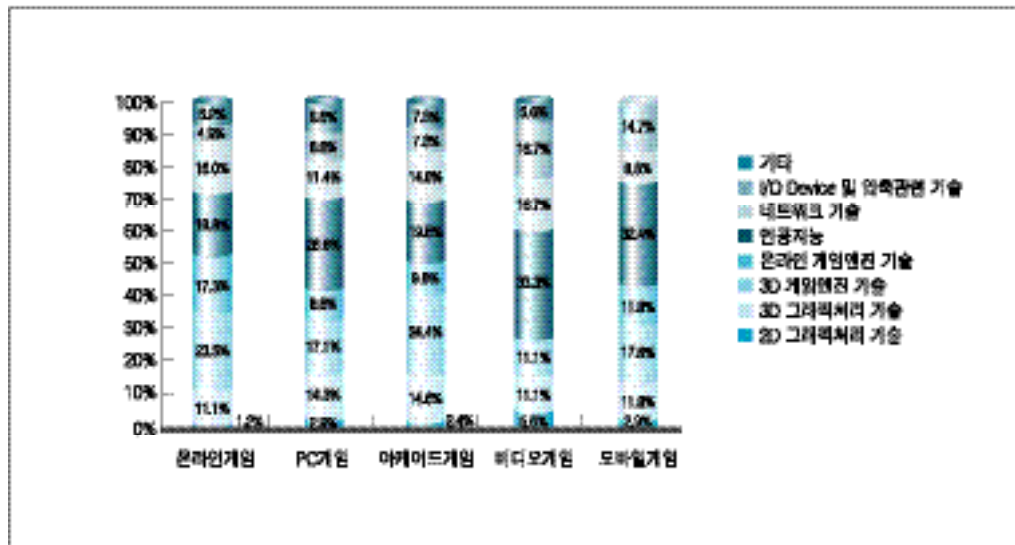
DB              ,                        ' 3D            ' 24.4%,'
                                  '  19.5%,'          '  ' 3D          '
                                       '  14.6%,'                  '
1~ 2                                '  9.8%,'  I/O Device         '
       ,' 3D          '  23.5%,'          7.3%,'  2D          '  2.4%
              '  19.8%,'                 '            .
   17.3%,'          '  16%,'  3D
          '  11.1%,'  I/O Device        '  33.3%
          '  4.9%,'  2D          '            ,       '  I/O Device
1.2%              .                    '              '  16.7%, 3D
  PC                          '                '  ' 3D          '
          '  28.6%          ,          11.1%,'  2D          '  5.6%
     ' 3D          '  17.1%                     '            '
     ,            ' 3D          32.4%,'  3D          '  17.6%,'  I/O
'  (14.3%),'          '  (11.4%),'  I/O   Device          '  14.7%;'
Device          '  (8.6%),'              '  ' 3D              '  11.8%,
          '  (8.6%),'  2D          '  '            '  8.8%;'  2D          '
(2.9%)          .                      2.9%            .

<   5- 6- 2- 06>                          (        ,        )
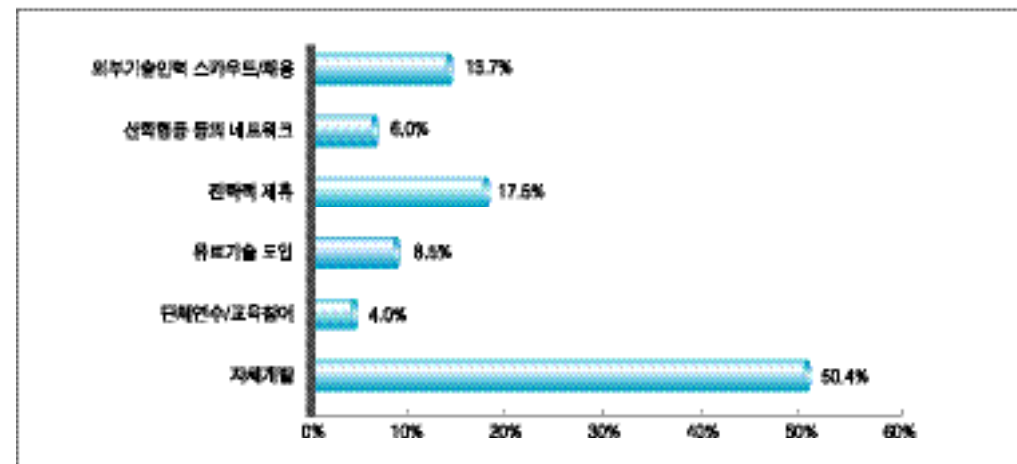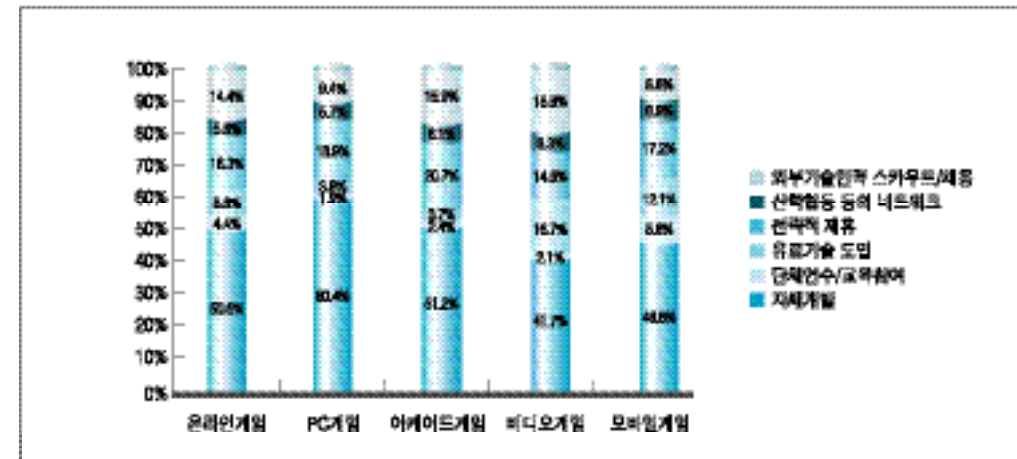              :          (N=81), PC       (N=35),          (N=41),          (N=18),          (N=34)



**4.**                                    ,                            .
                                                    17.5%,
                              6     (                  /          13.7%,
       ,          /        ,              ,            8.5%,
       ,                  ,                  6%,        /          4%
       /    )                                .
       .                                    .
                              .
                              ,                            ,                  .
       ,              50.4%

<   5- 6- 2- 07>              (N=401,      )



<   5- 6- 2- 08>              (        ,        )
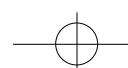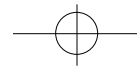              :          (N=160), PC       (N=53),          (N=82),          (N=48),          (N=58)

6

1.

ASP 40.2%              , PHP
25.3%, Servlet 14.6%, Delphi 10.7%, Perl
9.3%                   .

.

68%
          ,      ,      ,                    , 5
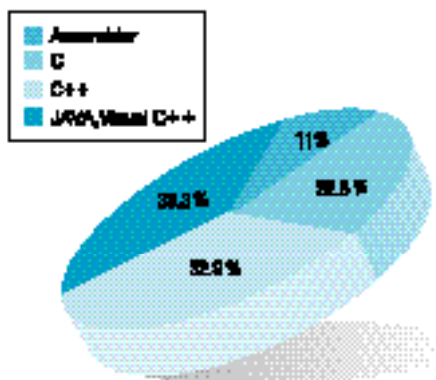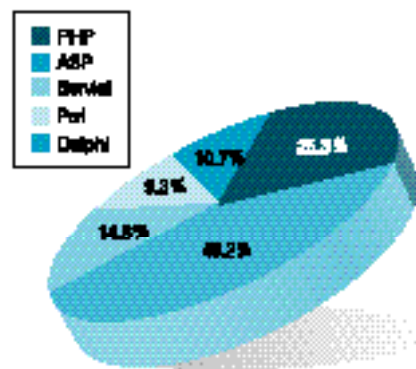     ,                              5.6%      .
                          ,
          .                      JAVA 39.4%, C
          C++   39%, Basic      21.5%
JAVA  C      C++

C++   33.3%, JAVA, Visual C++   32.9%,
C   22.8%, Assembler   11%          .
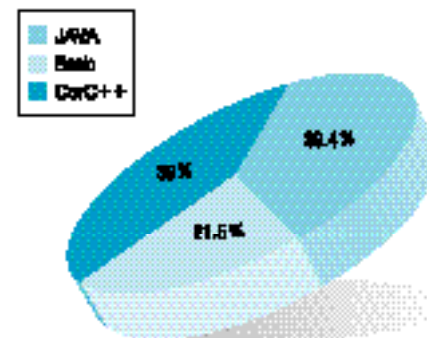      4                      67%              , 3
          93.4%  2002    82.2%          19.3%              .
                    , 4              Shockwave    Flash
              17.3%      .              Flash   67.4%, Shockwave

< 5- 6- 3- 03>              (N=251,    )



< 5- 6- 3- 04>              (N=138,    )



32.6%                   ,              2. 7%              .
          50.8%,                   , 3D
     19.3%          .

2.

72.8%          , 6
                    1%        .
1              40%              ,
          3D                   2              18.5%
                    ,              .
'  3D Studio Max'  47.3%,'  Maya'  16.7%,      2D                '  Photoshop'
'  Lightwave 3D'  16.3%,'  SoftImage 3D'      44. 1%              , 'Illustrator'
11.6%,'  Phino 3D'  5.4%,'  Lightscape'      33.6%, 'Painter'   22.3%          .
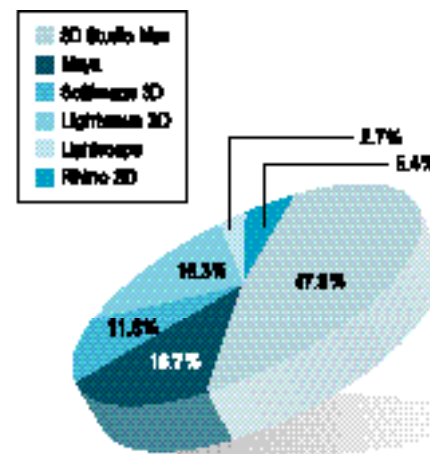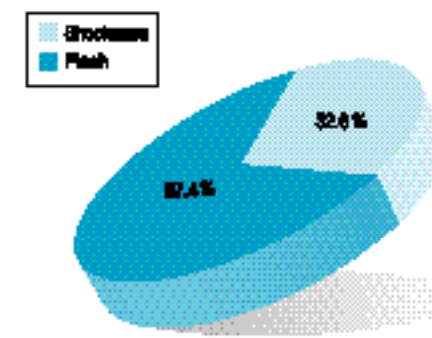
< 5- 6- 3- 01>              (N=435,  < 5- 6- 3- 02>              (N=281,
              )                              )



< 5- 6- 3- 05> 3D          < 5- 6- 3- 06> 2D              (N=195,
          (N=258,    )                          )

6
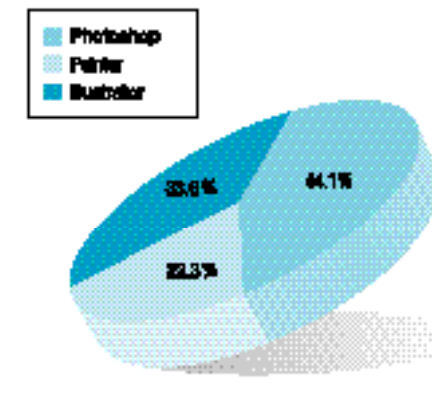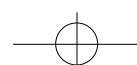
, 6.1%            .
            89.9%         , 3                  ' Custom Tool'
                    35.5%, 2                , 'Map Editor'
        37.1%          .            29.5%,' Animation Editor'   25.3%,'
                                Sprite Editor'   22.8%,' Data Converter'
            ' Flash'   40.4%,'          22.4%            .
Director'   21.7%,' Premire' 27.4%,
' Autowave'   10.4%                        52.3%(197         103   )
            .                        , 4                        26.4%
            59.5%              .
        , 4

&lt;    5-6-3-07&gt;                (N=230,
)



&lt;   5-6-3-08&gt; Custom Tool      (N=312,    )
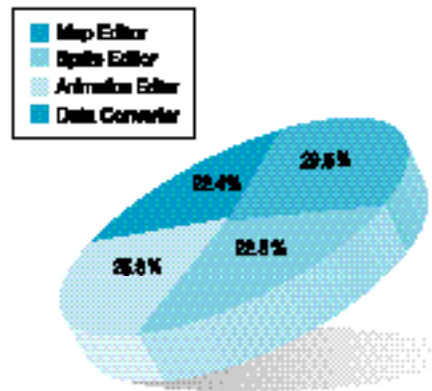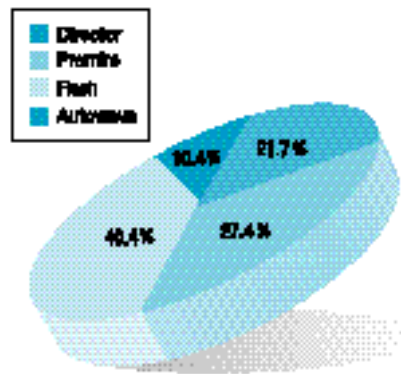


&lt;    5-6-3-09&gt;                (N=72,
)



&lt;    5-6-3-10&gt;            (N=45,    )
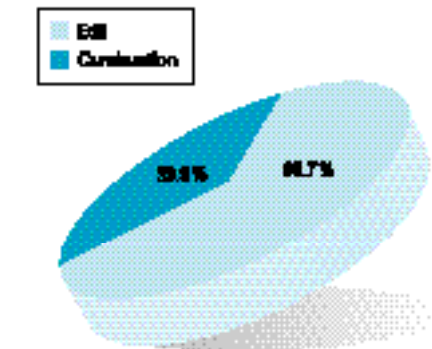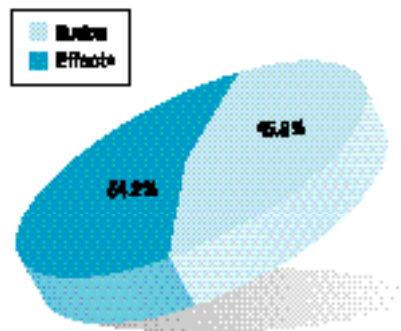


' Illusion'            45.8%       Application Plug-in)-KVM'   53.6%
    , 'Effect+'      54.2%                        .
.                                      10.7%(      197        21   )   ,
    25.9%   ,                                              7.1%
    10.7%        .                            .
        ' Edit'   66.7%,' Cumbustion'                                ,
33.3%                    .     ,        ' Playstation2'   49.5%                ,
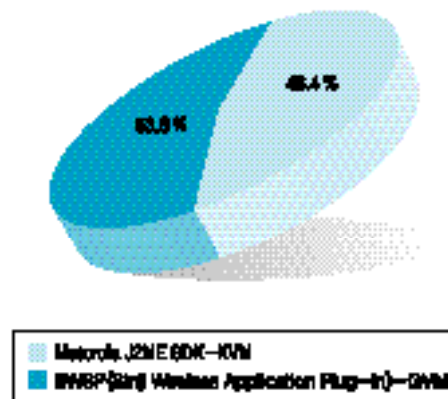                    10%   ,           ' X-Box'   17.6%,' Playstation'
                    12.7%            13.2%,' GameCube'   11%,' Saturn'
    .                            5.5%, Nintendo64   3.3%
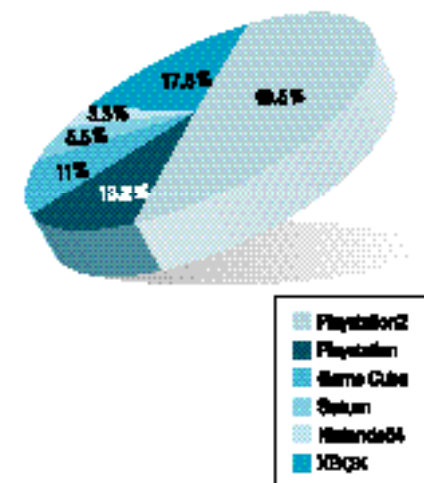                                        .
3.                                        25.8%(      197        51   )
                                    . 1               15.7%, 2
            ' Develope                                5.1%, 3, 4
  Kit for Mobile'                                2%   ,        6
' Motorola J2ME SDK - KVM'                            1%            .
    46.4%      ,' SWAP(Sinji Wireless

&lt;    5-6-3-11&gt; Develope Kit for Mobile
            (N=45,      )



&lt;    5-6-3-12&gt; Develope Kit for Console
            (N=91,      )