Over the past decade internships have become an essential talent management strategy for organizations big and small. CERI has tracked the role of internships, finding that internships have eclipsed on-campus interviewing in bringing organizations to college campuses (http://www.ceri.msu.edu/wp-content/uploads/2010/01/Career-Fairs.pdf). Even though it is difficult to capture detailed resource requirements for internship programs, respondents to CERI’s Recruiting Trends surveys have listed this practice as one of the best ROI (return on investment) among the recruiting strategies that they utilize. Most career practitioners have gained an understanding into the mechanics of internship programs from years of close relationships with organizations partnering with their institutions. Despite our familiarity with internship programs we actually do not know a great deal about them.

Most of the research that is reported through CERI, scholarly journals, and third party sources is focused on students. From students we have gained insights about what happens in the internship recruitment process, during the internship assignment, and the connection between having an internship and the transition into their first professional work assignment. What is lacking is a broader understanding of internships, especially from the employers’ perspective.

Surveying employers is challenging because internship programs are unique to an organization. Thus, an observer would need to have a large number of employers participating in the survey to obtain universally applied characteristics on how internships are managed. Depending on the aspect of the program the survey targets, an added challenge is making sure the correct individual has access to the survey.

To capture an overview of factors that shape an organization’s internship program, a series of questions were included in MSU’s annual Recruiting Trends survey, conducted by CERI. The topics included purpose of internships in their organization, total length of pre-professional experience expected, preferred length of an internship experience, and number of internships expected, for example. Nearly 2000 employer representatives completed these questions. This convenience sample may not be reflective of the total population of organizations that offer students internships.
Purpose of Internship Program

One criticism voiced about internships is that employers simply use interns to cover work assignments of their employees who are on vacation or long-term leave. Other voices contend employers use interns as temporary staff, rather than hiring full-time employees, when faced with heavy workloads. Certainly, examples such as these can be found but from a question commonly asked in CERI’s annual recruiting survey, employers promote internships as a strategy for developing full-time talent. According to Recruiting Trends 2012-2013, the primary purpose of internship and co-op programs was:

- **57% --** identify and develop talent for full-time employment and workforce succession planning
- **23% --** supplement staffing for special projects and targeted assignments
- **15% --** support the development of future talent in our profession (K-12 education and health fields, for example)
- **5% --** fulfill the organization’s social responsibility by providing professional enrichment experiences
- **1% --** cover assignments of staff on vacation or leave

Length of Time (total) of Full-time Experience

Employers were asked the total amount of full-time pre-professional work experience that was expected of candidates whom they were considering for employment. Full-time experience would require the student to work 35 (federal definition of full-time employment) to 40 hours per week. As interpreted for this study, a typical internship of three to four months, with the student working 20 hours per week, would have to be repeated at least once to gain an equivalent of full-time employment. Co-operative education students who co-op on alternative academic terms and were working full-time would gain the required expected hours sooner than those students on half-time internships.

Employers selected the amount of experience they expected from a seven point scale, ranging from 1 to 3 months (1) to 24 months (7) with 6 to 9 months represented by the value 3. Approximately 45% of these respondents expected students to have between 6 and 12 months of full-time work experience by the time they completed their degrees. Approximately 25% to 30% of these employers expected 13 to 24 months; the remaining 30% would accept candidates with 5 months or less of full-time experience.
Total full-time requirements vary by academic program. Law (between 16 and 18 months) and nursing (12 to 14 months) graduates are expected to have the most pre-professional experience before entering the workforce. Accounting and business specialty fields, such as finance, marketing, and human resources, are expected to have gained a full year of experience prior to graduation. For most other academic disciplines, employers expected between 10 to 12 months of experience. General Business, engineering and humanities & languages were expected to obtain the least amount of professional practice at about 8 to 10 months. The following table provides an overview of the full-time expectations for groups of academic disciplines.
Table 1 Length of Pre-Professional Experience Expected by Academic Discipline

<table>
<thead>
<tr>
<th>Academic Program</th>
<th>5 months or less (%)</th>
<th>6 – 12 Months (%)</th>
<th>13 months or more (%)</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law</td>
<td>19</td>
<td>33</td>
<td>48</td>
<td>4.66</td>
</tr>
<tr>
<td>Nursing</td>
<td>20</td>
<td>42</td>
<td>38</td>
<td>4.16</td>
</tr>
<tr>
<td>Accounting</td>
<td>28</td>
<td>42</td>
<td>30</td>
<td>3.86</td>
</tr>
<tr>
<td>Business (finance, marketing, HR)</td>
<td>29</td>
<td>41</td>
<td>30</td>
<td>3.82</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>28</td>
<td>43</td>
<td>29</td>
<td>3.80</td>
</tr>
<tr>
<td>Biological and Physical Sciences</td>
<td>28</td>
<td>45</td>
<td>27</td>
<td>3.80</td>
</tr>
<tr>
<td>Computer Science</td>
<td>29</td>
<td>44</td>
<td>27</td>
<td>3.72</td>
</tr>
<tr>
<td>Agriculture &amp; Natural Resources</td>
<td>29</td>
<td>45</td>
<td>26</td>
<td>3.71</td>
</tr>
<tr>
<td>Communication and Media Studies</td>
<td>29</td>
<td>44</td>
<td>27</td>
<td>3.66</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>34</td>
<td>41</td>
<td>25</td>
<td>3.53</td>
</tr>
<tr>
<td>Performing Arts</td>
<td>34</td>
<td>42</td>
<td>24</td>
<td>3.52</td>
</tr>
<tr>
<td>Engineering</td>
<td>33</td>
<td>47</td>
<td>20</td>
<td>3.46</td>
</tr>
<tr>
<td>General Business</td>
<td>34</td>
<td>46</td>
<td>20</td>
<td>3.43</td>
</tr>
<tr>
<td>Humanities &amp; Languages</td>
<td>37</td>
<td>41</td>
<td>22</td>
<td>3.38</td>
</tr>
</tbody>
</table>

Total time requirements vary by size of organization. Statistical comparisons by organizational size revealed that size did not differ significantly on the amount of internship experience they expected for students graduating from the social sciences, general business, biological and physical sciences, humanities and performing arts, and agriculture and natural resources. Significant differences were found among comparisons for the other academic fields. In general, smaller companies held higher expectations than larger companies that students would have more pre-professional experiences when they graduated. The exception was in the field of law.
The following presents the mean ratings by size for the academic disciplines with significant ANOVA results. Values for the very small organizations (less than 9 employees) have not been included because of the low number of these organizations reporting having internship programs.

Table 2 Length of Pre-professional Experience Expected by Size of Company

<table>
<thead>
<tr>
<th>Academic Program</th>
<th>Fast Growth (&lt;100 employees)</th>
<th>Small (101-500 employees)</th>
<th>Mid-size (501-3,999 employees)</th>
<th>Large (&gt;4000 employees)</th>
<th>ANOVA Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Law</td>
<td>4.19</td>
<td>4.41</td>
<td>4.81</td>
<td>5.36</td>
<td>F=4.368, .002</td>
</tr>
<tr>
<td>Nursing</td>
<td>3.93</td>
<td>4.47</td>
<td>4.58</td>
<td>3.27</td>
<td>F=3.067, .018</td>
</tr>
<tr>
<td>Accounting</td>
<td>4.10</td>
<td>4.03</td>
<td>3.89</td>
<td>3.36</td>
<td>F=5.965, .000</td>
</tr>
<tr>
<td>Business (finance, marketing, HR)</td>
<td>3.88</td>
<td>4.17</td>
<td>3.87</td>
<td>3.34</td>
<td>F=6.967, .000</td>
</tr>
<tr>
<td>Computer Science</td>
<td>3.80</td>
<td>4.02</td>
<td>3.96</td>
<td>3.40</td>
<td>F=5.022, .001</td>
</tr>
<tr>
<td>Communication and Media Studies</td>
<td>3.66</td>
<td>3.90</td>
<td>3.74</td>
<td>3.50</td>
<td>F=2.372, .050</td>
</tr>
<tr>
<td>Engineering</td>
<td>3.51</td>
<td>3.70</td>
<td>3.41</td>
<td>3.21</td>
<td>F=2.602, .035</td>
</tr>
</tbody>
</table>

**Total time requirements vary within economic sector.** Even though the overall average indicated that engineers, for example, were expected to have 8 to 10 months of total experience, we wanted to know if the minimum length of an experience was consistent across all economic sectors. When we compared the means we found wide differences across economic sectors within each academic discipline group. For example:

- For companies employing engineering interns, Financial Services and Construction have the lowest minimum requirements at 4 to 6 months while Information Services, Agriculture, Government, and Health Services expect a minimum of 12 months per experience.
• For computer science, Construction, Retail, Arts & Entertainment, and Professional, Business & Scientific Services had the lowest minimum time of 6 to 8 months. The Professional Services sector stands out because of the high concentration of computer design and system companies in this sector. Sectors expecting computer science candidates to have more than 12 months of full-time experience, include Health Services, Government, Agriculture, and Educational Services.

• The most consistent sector across all the academic majors was manufacturing which desired approximately 9 to 10 months of experience for all majors they considered for employment.

Minimum number of experiences

The total amount of time can be segmented into several experiences or one long experience. We asked employers the number of internship or co-op experience they expected candidates to have when applying for a position with their organization. Thirty-four percent indicated that one experience was sufficient for employment consideration. Fifty-five percent indicated two experiences while the remaining 10 percent desired three or more experiences.

Figure 2 The Number of Experiences Employers Expect

We found no significant differences by organizational size. Comparisons across different economic sector did reveal significant differences (F=3.815, .000). Administrative Services, Wholesale and Financial Services were more likely to require only one experience. Accommodations (Food & Lodging), Non-Profit organizations, Agriculture, Information Services,
and Mining and Oil preferred two experiences. The means of the other sectors clustered between 1.70 and 1.89 which suggested that they favored at least two experiences.

Minimum length of experience

After asking employers the total amount of experienced expected and the number of individual experiences desired, a question on the length of time for an individual experience was posed. Respondents were asked the minimum length of an internship or co-op experience to insure that it was meaningful for the student and the organization. A range of options was presented ranging from 1 to 2 months (1) to more than 12 months (7).

Slightly more than 30 percent indicated that a meaningful experience could be gained in an experience of 3 to 4 months while 30% indicated that the experience had to last at least 12 months or longer. Twenty-five percent felt that 5 to 6 months were sufficient while 9% opted for periods of 7 to 10 months. Around 5% believed an experience of 2 to 4 months would be meaningful.

Figure 3 Length of Individual Experience Expected by Employers

Comparisons based on organizational size revealed significant differences ($F = 4.028, .003$). Employers with 100 to 4,000 employees (small and mid-size firms) believed that experiences had to approach 7 to 8 months to be meaningful. On the other end, large employers (more than 4,000 employees) were comfortable with experiences of 5 months. Fast growth and entrepreneurial organizations felt 6 to 7 months appropriate for a meaningful experience.
Sector differences were also found ($F = 3.560, .000$). Construction firms reported the shortest period at 5 to 6 months. Sectors that felt a longer period of 7 to 9 months was needed included: Transportation, Non-profits, Utilities, Health Services, Education, and Accommodations. The remaining sectors expectations ranged from 4 to 7 months.

**Four Interesting Groups**

Four clusters of employers were found when number of experiences and length of experience were cross tabulated. Group 1 consisted of employers who prefer one or two experiences with a minimal length of 3 to 6 months. Group 2 consisted of employers who prefer three to four experiences with a minimal length of 3 to 6 months. Group 3 consists of employers who prefer one or two experiences with minimal length of 12 months. Group 4 consists of employers who prefer three to four experiences with a minimal length of 12 months. We profiled each group based on employer characteristics.

**Group 1: A few short experiences**

- Co-op comprised 23% of this group (overall co-op represented 18% of the sample population).
- Organizational Size:
  - Less than 100 employees: 45%
  - 101 to 500 employees: 22%
  - 501 to 4,000 employees: 17%
  - Over 4,000 employees: 18%
- Economic Sectors:
  - Professional, Business & Scientific Services: 27%
  - Manufacturing: 17%
  - Financial Services: 8%
  - Non-profit Organizations: 8%
- Key Subsectors
  - Manufacturing (Surgical Equipment – 14%; Machinery – 10%; Chemical – 9%; Food Processing – 9%; Automotive – 8%)
  - Professional Services (Computer Systems – 24%; Accounting – 13%; Engineering Services – 10%; Advertising & PR – 9%)
Group 2: Multiple short experiences

- Co-op comprised 26% of this group (overall co-op represented 18% of the sample population).

  - Organizational Size:
    - Less than 100 employees: 54%
    - 101 to 500 employees: 14%
    - 501 to 4,000 employees: 14%
    - Over 4,000 employees: 17%

- Economic Sectors:
  - Professional, Business & Scientific Services: 23%
  - Manufacturing: 16%
  - Non-profit Organizations: 13%
  - Agriculture: 4%

  - Key Subsectors
    - Professional Services (Computer Systems – 27%; Accounting – 11%; management Consulting Services – 13%)
    - Non-profit Organizations (Civil & Social Org. – 17%; Voluntary Health – 13%; Environmental – 30%)
    - Financial Services (Insurance – 70%)

Group 3: A few long experiences

- Co-op comprised 18% of this group (overall co-op represented 18% of the total sample population)
• Organizational Size:
  - Less than 100 employees: 42%
  - 101 to 500 employees: 23%
  - 501 to 4,000 employees: 19%
  - Over 4,000 employees: 15%

• Economic Sectors:
  - Professional, Business & Scientific Services: 20%
  - Manufacturing: 14%
  - Education: 11%
  - Non-profit Organizations: 10%
  - Financial Services: 9%

• Key Subsectors
  - Professional Services (Computer Systems – 23%; Engineering Services – 14%; Accounting – 10%)
  - Manufacturing (Machinery – 12%; Fabricated Metals – 9%; Other Not classified – 28%)
  - Non-profit Organizations (Social Advocacy 22%; Business and Professional Associations – 16%)
  - Financial Services (Insurance – 39%; Securities and Investment – 20%; Commercial Banking – 22%)
  - Education (K-12 Institutions – 71%)

Group 4: Multiple long experiences

• Co-op comprised 14% of this group (overall co-op represented 18% of the total sample population)
• Organizational Size:
  o Less than 100 employees: 45%
  o 101 to 500 employees: 28%
  o 501 to 4,000 employees: 18%
  o Over 4,000 employees: 8%

• Economic Sectors:
  o Professional, Business & Scientific Services: 16%
  o Non-profit Organizations: 16%
  o Education: 13%
  o Manufacturing: 10%
  o Financial Services: 7%
  o Health Services: 7%

• Key Subsectors
  o Professional Services (Computer Systems – 41%; Engineering Services – 7%; Accounting – 10%; Advertising & Public Relations – 10%)
  o Manufacturing (Food & Beverage Processing – 28%; Computer Electronic Equipment – 11%; Other Not classified – 22%)
  o Non-profit Organizations (Social Advocacy – 22%; Environmental – 15%; Civil and Social Organizations – 10%; Voluntary Health – 10%)
  o Financial Services (Insurance – 36%; Securities and Investment – 27%; Commercial Banking – 27%)
  o Education (K-12 Institutions – 64%)
  o Health Services (Hospitals – 50%; Out Patient – 17%)

Some observations:

• The higher concentration of co-op employers in Groups 1 and 2 emphasizes the historical roots of today’s internship and co-op environment. Co-op programs are structured around alternating terms between academic pursuits on campus and full-time employment at the host organization. Many of these programs were on established when schools were on the quarter
system (three months), converting to semesters (four to five months) when institutions realigned their academic calendars. Since most of the co-ops were in manufacturing, employers in this sector used the same structure when expanding their internship programs. Groups 1 and 2 are dominated by employers who have a long history with internships and co-ops and hold tight to their structures despite changing demands for skill and competency development within their organizations.

- Fewer manufacturing employers are found in Groups 3 and 4 where the experiences are longer. Professional, Business and Scientific Services have a large sub-section designated as Engineering Services. This sub-group tends to be spread out across Groups 1, 3 and 4. So engineers that seek employment outside of manufacturing face different sets of expectations depending on the organization.
- Smaller companies while making up more than half of Group 1 are dominant in groups that expect longer experiences.
- Organizations that comprise the service economy tend to want multiple experiences that are longer in length.

The length of the experience is set by historical precedence that accommodated the academic cycle. It is very difficult to break this pattern with pressure for longer experiences. Yet, change can be achieved as demonstrated in Canada. A number of Canadian institutions now offer students the option of a full year professional experience between their third and fourth years. The University of Toronto has the largest Professional Year program with over 70% of engineering and computer science students and a growing number in the sciences and allied health fields. What started as a special request from one of their key employers and initially involved only three students has now become a model of what can be done to effectively extend work-education experiences.

Relevancy of experience

A frequent question from parents and individuals seeking information about internships and co-ops concerns the relevancy of an internship to the position to which a candidate applies. A survey query was framed around this question where employer representatives were asked how relevant the internship experience needed to be to the position the student was seeking. Employers selected from a 5 point scale where 1 = not at all relevant to 5 = highly relevant. The overall average was 2.88 or approximately “moderately relevant.” Sixteen percent of respondents indicated the internship or co-op did not have to be at all relevant to the position being sought while twelve percent said that the experience needed to be highly relevant.

A comparison by organizational size found no significant differences. Mid-size organizations (500 to 4,000 employees) averaged slightly higher than other sized organizations but the mean differences were not practically meaningful.
Comparisons across economic sector did generate significant differences (F=8.572, .000).

- Educational Services, Health Services, Arts & Entertainment, and Hospitality (Food & Lodging) desired a higher degree of relevancy between the internship and the position the candidate is applying to than other organizations.

- Wholesale, Retail, Administrative Services, Government, and Leasing organizations felt that the internship had to be only “somewhat” relevant to the position. Their level of relevancy was lower than all other organizations.

**Unpaid Internships**

Even though unpaid internships have received close scrutiny from the media, some politicians, and parents since 2007, they have been with us for a long time. From anecdotal inferences from years of observing internships patterns, unpaid internships tend to become more prominent in recessionary periods when employers reduce financial expenditures on labor. Tight labor market conditions provide conditions where organizations, that typically do not pursue college students, can prey upon students’ fear of not obtaining a job by offering “experience” but at a price – no remuneration for the students’ efforts. The current business down turn has sharpened the focus on unpaid internships because of its severity. Add in the concerns over the increased amount of student debt, pressure mounts to end the practice of unpaid internships.

We do not really know the extent of unpaid internships. Since no national depository on internship engagement exists, we have to rely on surveys from individual institutions or broader surveys conducted by researchers. Surveys of students who have participated in internships suggest that 40% to 50% may be involved in unpaid positions ([http://www.ceri.msu.edu/wp-content/uploads/2010/01/Intern-Bridge-Unpaid-College-Internship-Report-FINAL.pdf](http://www.ceri.msu.edu/wp-content/uploads/2010/01/Intern-Bridge-Unpaid-College-Internship-Report-FINAL.pdf), for one example). Information from the employer side is only available from a few sources. CERI in its annual Recruiting Trends survey asks employers to indicate whether they offer unpaid internships or not (peruse [www.ceri.msu.edu](http://www.ceri.msu.edu) for recent Recruiting Trends reports).

Over the past several years, the percent of employers who only offer unpaid internships appears to have stayed fairly consistent. When we widened the employer base for the survey several years ago, the number of employers that offered unpaid internships increased. This increase in the number of unpaid internships can attributed to more non-profit organizations, social assistance groups and small companies (less than 100 employees) completing the survey. These organizations traditionally account for a large percentage of unpaid internships. The historical survey base that is comprised of manufacturing and financial organizations has a much lower percentage of unpaid internships.

We see that approximately 15% to 18% of employers are reporting that they only provide unpaid internships. Upon review of the employer characteristics, the highest concentration is among organizations with fewer than 100 employees. Organizations with more than 4,000 employees only represented 6% of organizations that provide unpaid internships. The highest concentration of unpaid internships is among non-profit organizations (31% of the group offering unpaid), followed by Health
Services and Educational Services at 11% each, Government (13%), and Professional, Business and Scientific Services (10%). Leading subsectors that offer unpaid internships include: Advertising, Public Relations & Marketing firms, Legal Services, Social Advocacy organizations and Voluntary Health organizations. The majority of government agencies that offer unpaid internships are found at the local level.

Approximately 65% to 70% of the surveyed organizations reported that they only offered paid internships. Those organizations that provide paid internships are comprised of 54% by organizations with fewer than 100 employees and 25% of employers with more than 4,000 employees. The highest concentration of paid internships is found among Manufacturing and Professional, Business and Scientific Services companies. Other sectors that are prominent in this group include Financial Services, Construction, Retail, Agriculture, and Transportation. Leading sub-sectors include: Accounting, Insurance, Engineering Services, Computer Design and Services, Business and Professional organizations, and from manufacturing companies in the automotive, machinery, and chemical sectors. For the government agencies that provide only paid internships 40% are with local government, 35% with the Federal government, and 25% with the state government.

A group that presents a conundrum involves employers who offer both paid and unpaid internships. In anecdotal conversations employers appear to pay for technical internships while not paying for human resources, marketing, advertising, public relations, and similar positions. In the latter positions the pool of applicants is considerably larger than for technical positions. It is hard to pin down the exact number of employers that are mixing their internships. We estimate 10% to 15% based on the responses over the past three years.

Employers in this group can be profiled as small (50%) with fewer than 100 employees (large employers with over 4,000 employees comprise 10% of this group). The leading economic sectors include Professional, Business, and Scientific Services firms, Non-profit organizations, Government agencies and Educational Services. Also present are employers from Financial Services, Manufacturing, and Health Services. Sub-sectors that are represented in this group include Insurance, Advertising, Public Relations & Marketing, Computer Design Services, Chemical Manufacturing, Management Consulting (includes human resources and logistics), and Civil & Social Organizations. For the government agencies in this group, 49% are local, 31% Federal, and 20% state agencies.

Credit

We frequently receive questions concerning how supportive are employers of students who want academic credit for their internship experiences. While employers are not excited about dealing with academic credit, 53% in our latest Recruiting Trends survey (http://www.ceri.msu.edu/wp-content/uploads/2012/11/TRecruiting-Trends-11-25-13-FINAL.pdf) had no major problems accepting interns who are earning academic credit. Another 18% only want to deal with academic credit if the educational institution has made the internship a graduation requirement. Only 25% of respondents refuse to deal with academic credit. Employers have expressed their frustration with academic credit agreements that they make with students and the college administrator.
• The learning agreement (assuming that there is one) may make it difficult to move the intern into a different position once the student has arrived at the host organization. The designated intern supervisor may have taken a new assignment, for example, and the intern has to be moved to different assignment. Once the intern arrives the supervisor finds an assignment that better matches the student’s interests and abilities but is locked into a learning agreement that will not permit the move. Employers are afraid that academic credit agreements reduce their flexibility in positioning the intern into an assignment that benefits both the organization and the student.

• Nearly all employers will have their intern supervisors provide an evaluation at the end of the assignment period, especially if the intern asks for one. You might be surprised at how many students forgo asking for an evaluation (http://www.ceri.msu.edu/wp-content/uploads/2009/10/FinalA-Comparison-of-Credit-and-Non-Credit-Internships-in-their-Expectations-and-the-Utilization-of-Campus-Resources-Whitepaper-as-o.pdf). In some cases academic departments ask for multiple evaluations during the assignment and provide a lengthy evaluation at the end. To some employers these reporting requests seem onerous.

• In some cases employers object to having learning outcomes forced upon them by faculty who have little knowledge of the workplace and the work assignment. In these situations the learning outcomes have a strong academic flavor that does not account for the realities of the workplace. Employers feel little commitment to honoring these types of arrangements.

We know that these problems do not have to occur if the agreements are carefully constructed. Co-operative education can serve as a model in how to develop effective learning agreements that met the expectations of students, faculty and employer. As more students are seeking academic credit for their internship assignment, measures to minimize the potential disagreements between employers and the institutions need to be addressed in a holistic fashion.

Summary

From the information provided by this group of employers, we learned that organizations differ on their expectations about the length and number of experiences that are necessary to be viable candidates for full-time employment. Employers expect nearly a year of full-time pre-professional experience prior to graduation. This amount of time is higher than many students believe is necessary since many typically obtain one half-time internship near the end of their college experience. Co-op students are much more likely to obtain this level of engagement. While the majority of organizations expect this experience to be gained in multiple experiences, 30% prefer the experience be one continuous experience. The emergence of an economy lead by service sector organizations challenges our legacy built upon manufacturing companies. While this information provides only a snapshot, we know the picture is a mosaic of pieces that means we have to be aware that the variety of ways the pieces maybe put together.