WORKING TIME AMONG VIDEOGAME DEVELOPERS, 2004-14

COMPARED RESULTS OF IGDA INTERNATIONAL SURVEYS 2004, 2009 & 2014 AND OF 2 ROUNDS OF CANADIAN INTERVIEWS 2008 AND 2013-14

SUMMARY REPORT

Marie-Josée Legault, Full Professor in Labor Relations, Téluq-Université du Québec

Johanna Weststar, Assistant Professor, Management and Organizational Studies Department, Western University

AUGUST 2015

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ACKNOWLEDGEMENTS

INTRODUCTION

The international video game industry's revenue is estimated to be 91.5 billion US dollars in 2015 (Sinclair, 2015). It follows that game making generates a fair share of employment, though this still needs to be systematically documents as the sector is both relatively new and rapidly changing.

According to a report of the Entertainment Software Association (ESA) (Siwek, 2014), in the USA alone, game companies are estimated to employ 42,527 people overall. The annual job growth for the video game industry (9%) increased more than 13 times the rate of the US labor market (0.72%) during the same period. Similarly, the annual growth rate of the US video game industry was 9.7% between 2009 and 2012, which was four times the real growth of the American economy during the same period. In Canada, 16,500 are directly employed in this industry (ESAC, 2014).

In the UK, it is estimated that the video game industry employs 30,000 workers (University of Kent Careers and Employability Service, 2015) with over 9,000 of these being highly skilled development staff, according to trade association of developers in the UK (TIGA, 2015).

The industry is an object of unrelenting critics about its working conditions and is often accused in social media of treating its development talent poorly (for just a quick snap-shot: Acton, 2010; Handman, 2005; Hyman, 2008; Kennedy, 2007; Rockstar Spouse, 2010; Scott, 2014). According to the 2014 Developer Satisfaction Survey (DSS) survey of the International Game Developers Association (IGDA), when considering the social perceptions of the game industry, while approximately a quarter (24%) remain "neutral," 42% believe that there is a positive perception of the industry and 32% believe there is a negative perception. In considering some of the factors that might lead to the games industry having a negative perception from the public, it is interesting to note that "working conditions" was the top response (68%), before "sexism in the games" (67%) and "perceived link to violence" (62%) (Edwards, Weststar, Meloni, Pearce & Legault, 2014). Among those engaged in core game development roles (i.e., programming, audio production, visual art, and game design), this number rises to 77% (Weststar & Andrei-Gedja, 2015).

Poor working conditions have repercussions for workers, studios and the industry as a whole - for instance: stress, burn-out, work-life balance challenges, high turnover and associated attraction, retention and knowledge management challenges. Working conditions in traditional studios may also be related to the rise in self-employment and independent development in the industry. It is therefore critical to better document the working conditions of game developers and assess this as an important factor in the health of the industry.

In response to a gap in this knowledge, the IGDA launched its initial *Quality of Life* (QoL)

survey in 2004 as an effort to gain a much clearer understanding of some employment issues – from "crunch time" to compensation issues. The IGDA is a non-profit membership organization of individual creators of video games that aims to connect members with their peers, promote game development as a profession and the professional development of its members, and advocate on issues that affect the developer community. It also provides some detailed quantitative information on the industry, based on regular surveys on employment, demography, industry and market trends, etc.

In 2009, the IGDA partnered with us to develop a new version of the Quality of Life survey and to process and analyse its results. In 2014, this partnership took a broader scope, both including a larger team and focusing on employment, demography and the state of the industry in a more encompassing *Developers' Satisfaction Survey* (DSS). This new survey aimed at conducting the third iteration of the QoL survey, while adding Demographic and State of the Industry questions in an attempt to have a snapshot of the whole environment at once.

These three datasets allow us to compare three milestones in the young life of this industry.

In particular, the labor issue of working time stands out among others that besmirch the industry's image: discretionary rules in establishing wage levels, in appointing to projects, in attributing credits, insufficient intellectual property rules and funds for updating knowledge; lack of job security and arbitrary hiring and firing decision processes; non-disclosure and non-competition agreements that may end up in legal proceedings.

Long working hours have become an inescapable feature of the industry where developers are often bound by contracts that do not include any terms and conditions of employment relating to hours of work and normal working hours or any policy regarding overtime work and compensation. The phenomenon raises ethical issues, like unlimited unpaid overtime work and reduction of free time, that need to be addressed. They have an impact on worker health, quality of family life, productivity (mistakes resulting from fatigue), and income and equity (when the hours are unpaid yet necessary and, in a way, requested).

What we aim to do as part of our research program on working conditions in the game industry is to: a) take stock of the evolution in the international industry's issue of working time; b) to shed some light on working time in the Canadian videogame industry in particular and as compared to the international situation; and c) to paint a detailed portrait of the phenomenon as experienced in our specific context. This report is a piece in that puzzle as we begin by laying out here the plain raw results without any theoretical framework.

METHODS

In this report we will discuss 15 years of evolution in working time among video game developers only; we will not focus on upstream activities along the value chain (funding, publishing, production of tools, middleware, engines, software platforms, etc) nor on downstream activities (marketing, distribution, etc.). We are here focusing on game designers, interaction and level designers, programmers, 2D and 3D artists, audio artists, writers or narrative designers, localisation experts, etc. We are not including quality testers, managers, nor team leads.

Two sets of data inform our discussion.

Quantitative data

We are partners of the International Game Developers Association (IGDA) in administrating, processing and analysing their on-line surveys with VGDs. IGDA is a non-profit membership organization of individual creators of video games that aims to connect members with their peers, promote game development as a profession and the professional development of its members, and advocate on issues that affect the developer community. It also provides some detailed quantitative information on the industry, based on regular surveys on employment, demography, industry and market trends, etc.

In 2004, the IGDA launched its initial *Quality of Life* (QoL) survey in an effort to gain a much clearer understanding of some employment issues – from "crunch time" to compensation issues. In 2009, the IGDA partnered with us to develop a new version of the Quality of Life survey and to process and analyse its results.

In 2014, this partnership took a broader scope, both including a larger team and focusing on employment, demography and the state of the industry in a more encompassing *Developers' Satisfaction Survey* (DSS). This new survey aimed at conducting the QoL survey in a third milestone, while adding Demographic and State of the Industry questionnaires to the first one in an attempt to have a snapshot of the whole environment at once.

A first set of data consists of statistical data collected in three IGDA surveys:
- 2004 Quality of Life survey (1000 respondents)
- 2009 Quality of Life survey (3362 respondents)
- 2014 Developer Satisfaction Survey (DSS) (2202 respondents).

For the purpose of this report we will not use the data from all the respondents. The surveys were pitched broadly and therefore senior managers, project managers and team leads could answer and share their views as well as salaried and freelance developers, would-be developers, people who left the industry, students and others more tangentially related to the

industry. However, when discussing working conditions, we consider it important to separate salaried and freelance developers from those who have not worked yet or hold a management job.

Specifically, the 2014 sub-sample used here (n=795) includes those who are firstly developers and those who also engage in QA/testing, support roles, academic or journalist roles, but who DO NOT have managerial roles in any capacity. This sample can be compared with the 2009 sub-sample used here (n=1145) which includes respondents if they listed a core development role as their primary discipline and excludes any respondent listing a team lead or manager role. As the 2004 survey did not distinguish respondents by job role/discipline, we will use all data.

Qualitative data

The second data set consists of two series of interviews among Canadian VDGs.

Running parallel to these two latest surveys, we conducted in-depth interviews to learn more about what figures do not tell: the detailed intimate experience of developers, starting with Canadian ones:

- in 2008, we interviewed 53 developers in Montreal;
- in 2013-14, we interviewed 93 Canadian developers in three important video game hubs:
    - 34 in Vancouver, British Columbia;
    - 32 in Toronto, Ontario;
    - 27 in Montreal, Quebec (see Table 1 for the distribution of studios among provinces in 2013).

Table 1

Distribution of Canadian studios among provinces in 2013

Province	Studios (n)	Studios (%)	Employment (%)
Quebec	97	29.5	53
Ontario	96	29.1	11.2
British Columbia	67	20.4	31.2
Alberta	20	6	4.5
Manitoba	20	6	
Nova Scotia	18	5.5	
PEI	5	3.3	

New Brunswick	3		
Newfoundland	2		
Saskatchewan	1		
Total	329	100	100

Source: Nordicity, 2013, p. 23 & 30.

Readers will find accounts of interviews done in 2008 as cited published articles analysing the videogame development workplace, and accounts of 2013-14 interviews.

The sample contains roughly equal numbers of men and women, despite the low proportion of female workers in the industry; on the Canadian scene, women count for 14% of creative workers and 5% of technical workers (Nordicity, 2013). We make no claims about statistical representativeness, as our aim in establishing the sample was to help us make sense of the low numbers of women in the sector.

The in-depth interviews lasted one and a half to two hours, and the interview guide was semi-structured. Many questions were posed as standard procedure to everyone, so simple descriptive statistics can be summed up, though the study was qualitative. Data were analysed with the grounded theory procedure (Charmaz, 2000). Only part of the categories, relevant to our question, will be accounted for here; other publications will account for the rest of the study.

Same can be said of the developers' sample interviewed in Montreal in 2008; for them, however, we will rely on formerly published analyses (see the list above) and we will not provide interviews' excerpts.

In short we will compare:
- the detailed picture of working time IGDA has documented in 2004 in its first QoL survey;
- this same picture that we and the IGDA have documented in 2009 throughout an international survey and interviews conducted in Montreal (relying on published analyses: Chasserio & Legault, 2010, 2009; D'Amours & Legault, 2013; Legault & Weststar, 2012, 2014, 2015; Legault, 2013; Legault & Chasserio, 2012; Legault & Ouellet, 2012; Legault & D'Amours, 2011; Weststar & Legault, 2012);
- and the detailed picture IGDA and us have just taken in 2014 through an international survey (Edwards, Weststar, Meloni, Pearce & Legault, 2014; Weststar & Legault, 2014) and interviews conducted in Montreal, Vancouver and Toronto.

This allows us to compare three milestones in the young life of this industry. What we aim to do here is to take stock of the evolution in the international industry's decision making

process, and of satisfaction and dissatisfaction among VGDs.

Caveat

Respondents to these IGDA surveys are 1) IGDA members and 2) consenting willfully to answer the survey. There could be a self-selection effect in our sample as:
- developers who do not work much in crunch time could have more time to participate, while those who are crunching may be too busy to do;
- developers who work in non-crunching teams within a studio that practices crunch time work on other teams could have more time to participate, in the same way.

As a consequence, if this was true, our report could give a skewed picture of the actual working time in this environment.

A GENERAL DECREASE IN REGULAR HOURS OF WORK

The IGDA surveys distinguished between two different targets in investigating regular hours of work among respondents: the hours developers are expected to work and the hours that they actually work.

Hours management expects developers to work

First, we can observe the management's expectations regarding the duration of the regular working week, **as perceived by respondents**. This question was first asked in 2009 so we can now see how the situation has changed in 2014.

Table 2 shows an improvement in managers' expectations, at least in the perception of the survey respondents. In 2014, a larger share of respondents than in 2009 reported that their studio management expects them to work 35-39 hours per week when not in crunch time. This category is what we would consider 'normal' hours in a 'standard' work week. Complementing this increase, compared to 2009 a smaller share of respondents in 2014 felt that their studio management team expects longer hours (between 40 and 49 hours a week) as a regular work week.

Table 2

How many hours per week on average are you EXPECTED to work when in a REGULAR schedule? (2009 – 2014)

	% of respondents	
Weekly hours	**2009**	**2014**
0-20	2	3

20-24	1	3
25-29	0	1
30-34	0	3
35-39	8	18
40-44	71	62
45-49	10	6
50-59	7	2
60-69	1	0
70-79	0	0
80 +	0	3

Hours developers actually work on regular days

When we turn to the question of how many hours respondents actually work in a given week, we first have to acknowledge that we do not have a standardised data set as the given categories denoting a range of hours worked were broader in the 2004 survey and therefore do not exactly overlap with the subsequent surveys. Yet, we have arranged the data here to take advantage of the more detailed data in 2009 and 2014, and still manage to compare the outcomes of the three surveys.

We can observe a general decrease of the working hours in the long run (2004-2014). This means that there is an increase in the 35-44 hours bracket between 2004 and 2014. A bigger share of respondents reported this duration instead of the longer ones, hence an enhancement in the working conditions.

There is a decrease in the longer duration categories during the same period, which just mirrors the same trend: more respondents in short durations. In 2004, 40% reported working 44 hours or less per week. This increased dramatically to 59% in 2009 and increased again slightly in 2014 to 66%. Over the same time period fewer respondents reported working more than 45 hours per week: 61% in 2004, 41% in 2009 and 34% in 2014 (Table 3).

This data also indicates that the number of part-time employees in the industry might be rising since there is an increase in the number working less than 30-34 hours per week. As the game industry is not known as a sector where you can find part time employees, this requires deeper investigation.

Table 3

How many hours per week on average do you ACTUALLY work when in REGULAR schedule?

(2004 – 2009 – 2014)

Weekly hours	% of respondents				
	2004	2009	2009 (aggregated)	2014	2014 (aggregated)
0-20	1	2	3	2	9
20-24		0		1	
25-29		0		2	
30-34		1		4	
35-39	39	6	56	14	57
40-44		50		43	
45-49	42	21	38	21	29
50-59		17		8	
60-69	19	2	3	2	5
70-79		1		0	
80+		0		3	

Chart 1 below illustrates the reduction in actual hours of work in a regular schedule between 2004 and 2014. As discussed above, it highlights a greater concentration of respondents in the shorter durations in 2009 and 2014 when compared to 2004.

Chart 1

How many hours per week on average do you ACTUALLY work when in REGULAR schedule?

(2004 – 2009 – 2014)
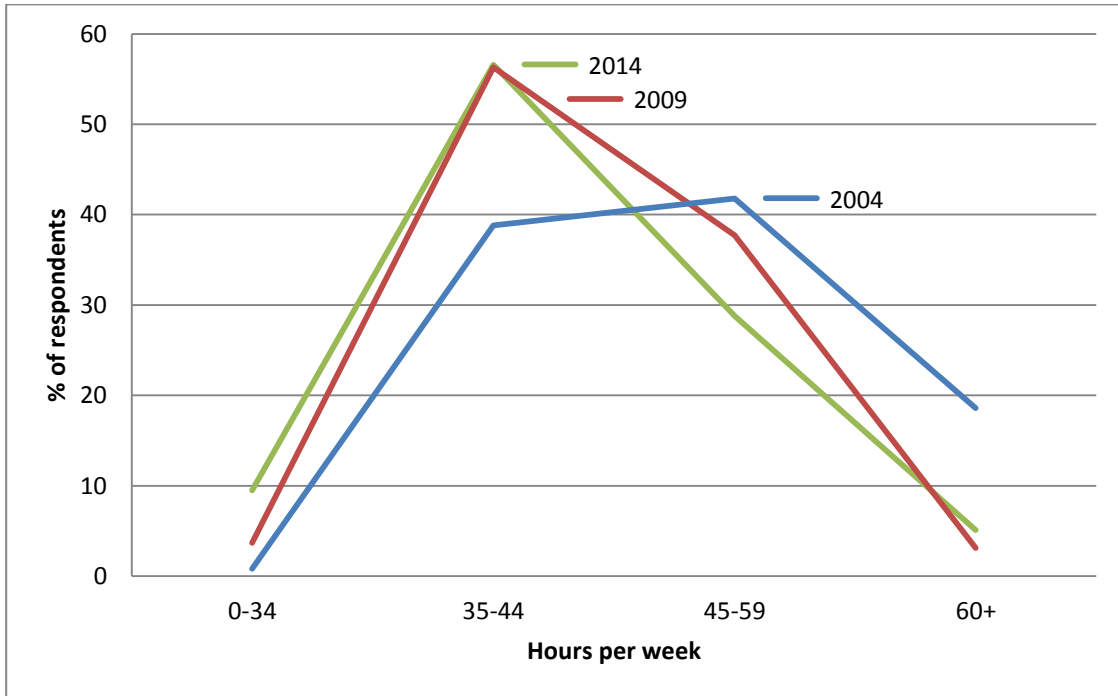
To take advantage of the more detailed data collected since 2009, we can also compare the expected hours of work to the actual hours of work. Chart 2 shows that the reduction in the hours of work between 2009 and 2014 has been both in terms of management expectations and actual hours worked. However in the cross-over of the actual and expected lines at the higher end of the hours per week scale, this chart also shows that developers still tend to work more hours than they are officially expected, though this gap may be smaller in 2014.

Chart 2

How many hours per week on average are you EXPECTED to work / do you ACTUALLY work when in a REGULAR schedule? (2009 – 2014)
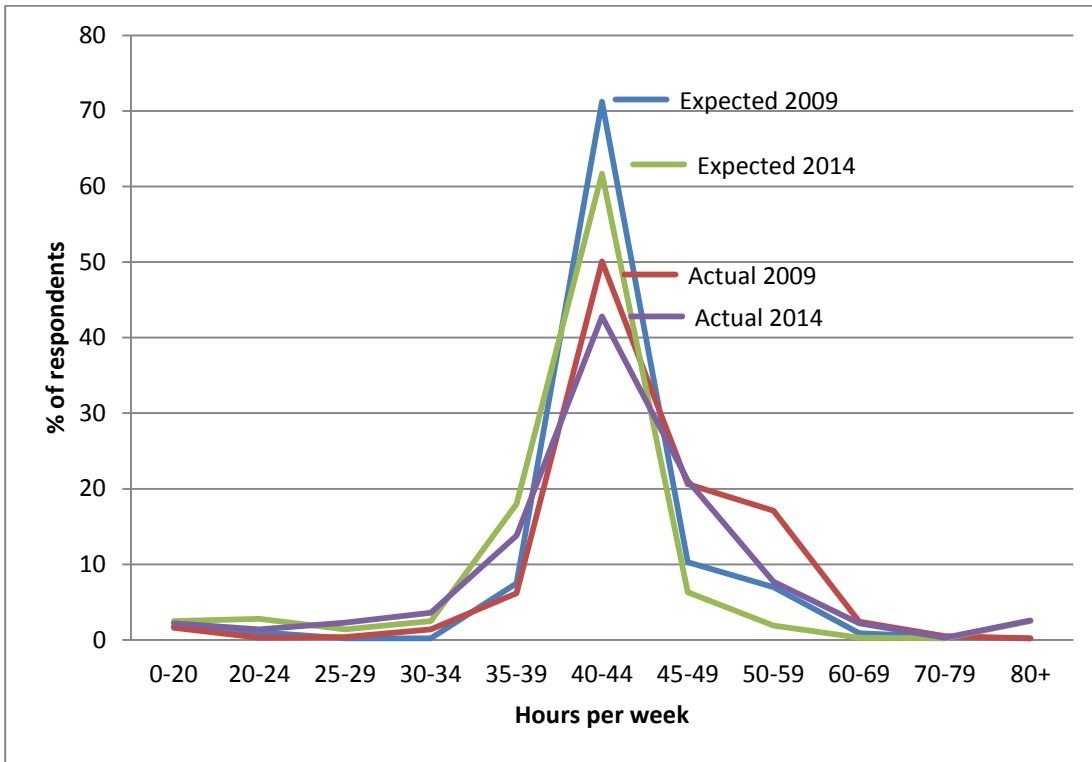
In keeping with these results, on average the Canadian developers we interviewed reported working 41.8 hours in a normal week when they were not in crunch.

A DECREASING PRACTICE OF CRUNCH, BUT STILL IMPORTANT

Crunch time, a project management notion

For the purpose of the IGDA survey, *crunch* time was defined as when a team goes into an extended period of work (beyond the regular hours) to meet milestones and deadlines for shipping deliverables. Known as *overtime* to most people outside of the industry, the use of the word overtime is carefully avoided in the video game industry. Though the phenomenon itself is common to project based environments, the virtually exclusive use of the term *crunch* in place of overtime term is characteristic of this industry.

Crunch time is a threefold notion, as workers can be asked to:
- add working hours *to the regular weekly working hours* and the length of the work week varies between 45 and 90 hours;
- extend this practice over a few weeks or a few months;
- repeatedly engage in discrete periods of crunch over the course of a project or over a certain time period

To understand this multi-faceted nature of crunch, we then have to consider how many hours developers work in crunch, how long a period of crunch extends and how many times they crunch over some defined time period (i.e., over the course of a year). We also must acknowledge the variation in crunch practices across studios. In some studios crunch is standard practice, rather than the exception. In some others, it's nearly banned.

The general practice is decreasing, but still part and parcel of the trade

First, 2009 and 2014 surveys asked a question that allows us to compare the studio practices related to crunch time. As Table 4 shows, the share of respondents who said that their studios do all that they can to avoid crunch has increased from 37 to 44%. The number of people who say that their studios never crunch has remained the same over the years and is only 8% in 2014. This data is presented in graphical form in Chart 3.

 If we combine these first two answers on this table, we get the proportion of respondents who considers the practice of crunch as an exception to the rule in their studio. This has increased from 44% to 52% over the five year span.

If we combine the last four answers, we get the proportion of respondents who perceive the practice of crunch to be part of the regular schedule of their studio. This has decreased from 56% to 48%. A noticeable change lies in the proportion of respondents who still often works in crunch but considers it as a failure in scheduling, decreasing from 21 to 15%.

These numbers are trending in the right direction, but a high proportion of developers still work at studios where crunch is common and even accepted.

Table 4

How does your company manage crunch time?

	2009	2014
Very rarely in extraordinary circumstances we have to crunch, but we do everything we can to avoid it	37	44
We don't have crunch time; our schedules allow us to get things done without it	7	8
Crunch is part of our regular schedule and I don't agree that it should be	22	24
We crunch often, but we view it as a failure in scheduling	21	15
Crunch is a part of our regular schedule and I don't mind	4	6
What others call crunch, we call daily work schedules	9	3

Chart 3

How does your company manage crunch time? (2009 – 2014)
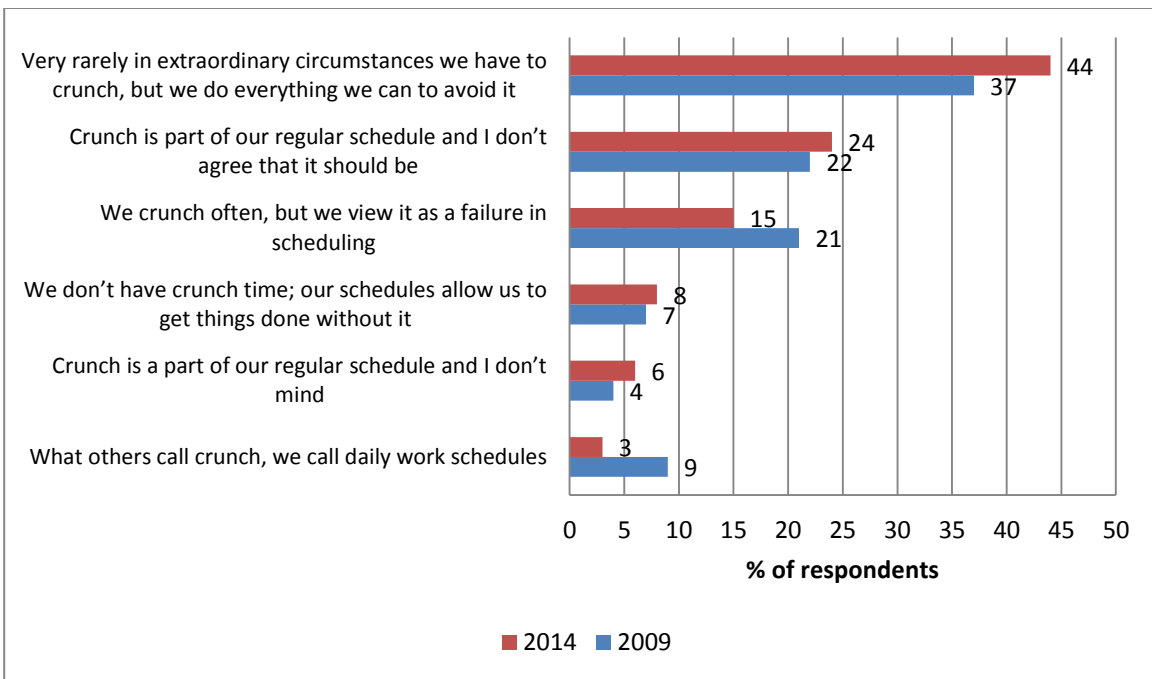
The 2014 survey asked for the first time if respondents had experienced crunch time in the past 2 years (Table 5, Chart 4). The data show that 21% of our respondents have not experienced crunch in 2014. Still, that means that more than three quarters of the respondents have experienced crunch in the last 2 years, which means it's still part and parcel of the trade.

Table 5

Have you experienced crunch time in the past 2 years? (2014)

Crunch	%	Aggregated %
No	21	21
Once	19	80
Twice	19	
More than twice	42	

Chart 4

Have you experienced crunch time in the past 2 years? (2014)
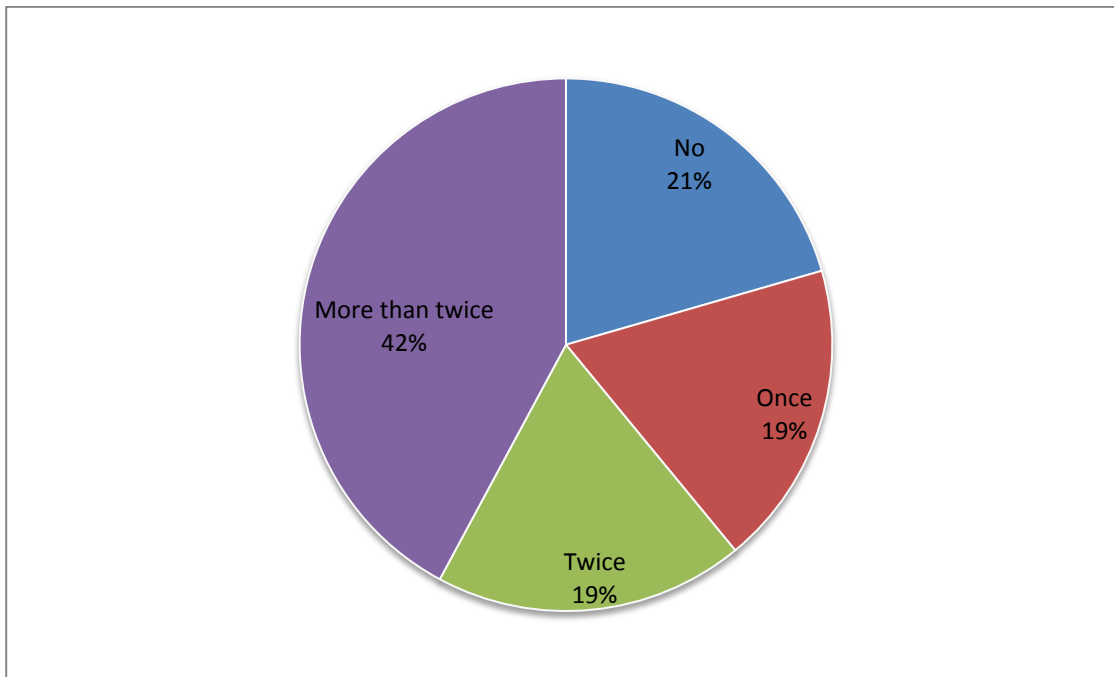
The next question, "Do you feel that crunch time is expected at your workplace as a normal part of your job," (Table 6, Chart 5) was also asked for the first time in 2014. Given that 54% of respondents answered "yes" and a further 11% said they were "not sure", we must again

acknowledge that a large portion of the sample considers crunch time as part and parcel of projects or video game development.

Table 6

Do you feel that crunch time is expected at your workplace as a normal part of your job? (2014)

Crunch time is a normal part of your job	% of respondents
No	35
Yes	54
Not sure	11

Chart 5

Do you feel that crunch time is expected at your workplace as a normal part of your job? (2014)
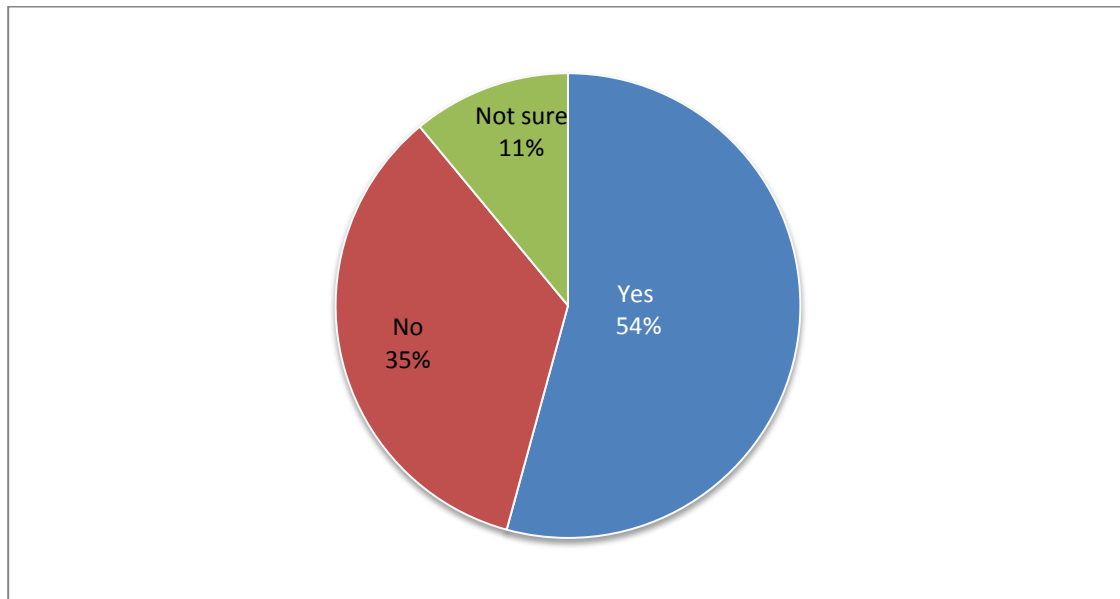
Is it possible to refuse to crunch?

The data now present a conundrum. How can a relatively high proportion (21%) of respondents say that they have not experienced crunch in the past two years (Table 5) when 54% say that it is expected as a normal part of the job (Table 6), and only 8% of respondents say that their studio practice is to never have crunch time (Table 4)? One explanation lies in the definition of 'rarely'.

As we saw above, also in Table 4, 44% of respondents said that their company crunches very rarely and does everything they can to avoid it in 2014. When we compared the

individual's responses for the question, 'How does your company manage crunch time' (Table 4) with the responses for the question, 'Have you experienced crunch time in the last two years?' (Table 5), we found that 42% of the people who did not crunch in the last two years work at studios with no crunch policies and 44% work at studios that crunch rarely and try to avoid it.

However, in looking at this same cross-tabulation, we find that though company policies contribute to the pattern of crunch seen among game developers, other factors may override those policies. Among the people who said that their studios do not have crunch time (second line, table 4), only 81% of them reported that they did not crunch in the past two years, while 6% reported crunching once and 9% reported crunch two or more time in the past two years; the remaining 4% did not know (data not shown).

As well, among the people who said that their studios crunch rarely and do everything they can to avoid it (first line, table 4), only 18.5% said that they did not crunch in the past two years. That leaves 26% who crunched once and 53% who crunched twice or more in the past two years (data not shown).

This shows that it is important to tease out the studio policy versus the experience of individual developers. Very likely, the majority of studios are practicing crunch at some level or in some instances all the same, but workers on *some* projects or *some* individual developers can avoid it or refuse it.

In 2004 the question about company policy on crunch time presented different response options that were then changed in subsequent survey years. However, they can help us to further understand the ability to refuse crunch. As we see in Table 7 (Chart 6), some developers can avoid crunch time sometimes or generally if they are working in a studio that tries to avoid it, but also if they are exempted from it for individual reasons.

Due to the different wording from year to year, we cannot make a detailed comparison of this question to 2014, but we can compare this last option. In 2004 1% of the studios had an outright ban on crunch and 2% of respondents declared not having to work in crunch, while in 2014 8% reported that their studio policy was not to crunch.

Table 7

Which of the following assertions best describe your company's policy regarding crunches? (2004)

Your company's policy regarding crunches	%
Management sees crunch time as a normal part of doing business in the game industry	26
Management sees crunch time as a necessary evil and tries to minimize	19

its impact on employees	
An employee doesn't have to participate if their own assigned work is completed	16
Everyone gets involved, no matter what	15
It is possible for an employee to refuse crunch time for personal or family reasons	15
All developers work long hours during crunch, but management doesn't	8
Management actively applies a no-crunch policy, like the 40-hour workweek.	1

Chart 6

Which of the following assertions best describe your company's policy regarding crunches? Check all that apply (2004)
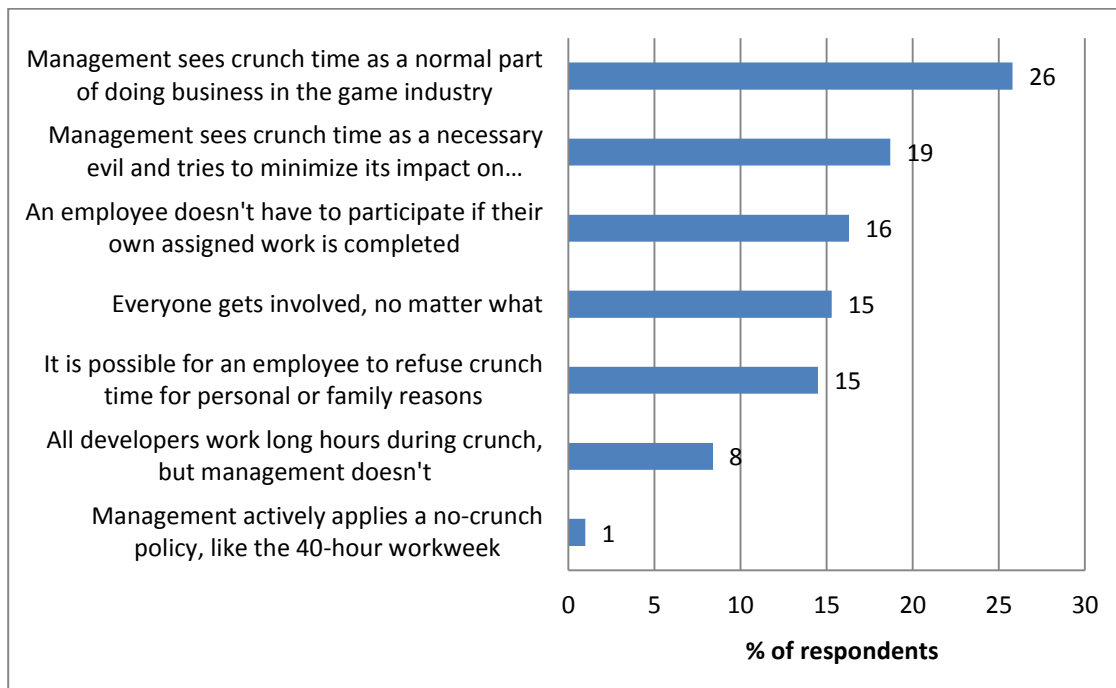
In the Canadian interviews, a quarter of the respondents felt they could refuse to work in crunch time, for various reasons. They either worked in studios that practiced crunch but independently took the refusal stance, or they may have had the option to refuse from time to time with a good reason, or they may have worked in studios that had a no crunch policy.

Regarding the latter, 21% of respondents spontaneously said their studio had a *no crunch or limited crunch policy,* and clearly stated under that policy that workers could refuse (though this was not asked as part of the questionnaire, it was part of their explanation of time management at their studios).

In general, things are rather unclear and respondents don't precisely know the formal or informal rules. Therefore, if the practice shows a downward trend and studios show various ways to manage crunch time, there still are Canadian studios that maintain the famous tradition. Among our interviewees some still worked at studios that practice crunch as the normal schedule, going on regularly and not being compensated.

So, despite a slight enhancement in the occurrence of crunch time in this data, it still is a

regular practice in the bigger universe of project management and in the video game industry in particular. But, as we can see from looking at the other measurements of crunch below, though the practice may not be extinct, there is an evolution.

Hours management expects developers to work in crunch

As we discussed above regarding the hours of work in a regular schedule, we first observe the expectations of management as perceived by respondents. This question was not asked in 2004 so we can only compare perception of expected hours between 2009 and 2014.

And here again, there is an improvement in terms of how much developers think they are expected to work. In 2014, a larger share of respondents than in 2009 reported that they are expected to work 45-49 hours per week while in crunch time. To mirror this, a smaller share of respondents in 2014 reported that they are expected to work longer hours than that (i.e. 50-69 hours). Off-setting this downward trend, the percentage of respondents who felt that their management expected them to work very extreme hours of 80 or more per week doubled between 2009 and 2014 (Table 8).

Table 8

How many hours per week on average are you EXPECTED to work when in CRUNCH time?

	2009	2014
<20 hrs	1	8
20-24	0	1
25-29		1
30-34	1	1
35-39	1	3
40-44	9	10
45-49	7	15
50-59	35	30
60-69	34	13
70-79	7	3
80+	7	15

Hours developers actually work on crunch time

When we turn to the declared actual duration of the crunch time, we first have to

acknowledge that we do not have a standardised data set and therefore this data is not as accurate as one based on a stable questionnaire. That said, we have arranged data here to take advantage of more detailed data in 2009 and 2014, and still manage to compare the outcomes of the three surveys.

The 2014 data show a more distributed set of frequencies and a trend towards fewer respondents working more than 60 hours a week while in crunch (67% in 2004, 54% in 2009 but 36% in 2014)(Table 9). Though clear, this trend is contradicted by a constant share of respondents working 80 hours and more. A graphical representation of this data (Chart 7) helps us to note that this spike in 2014 returns to 2004 levels. These numbers show that there is a constant hard core of studios practicing intense crunch.

Table 9

How many hours per week on average do you ACTUALLY work when in CRUNCH time?

	2004	2009	2014
<20 hrs	0	1	9
20-24		0	1
25-29			1
30-34		1	2
35-39	3	1	2
40-44		5	9
45-49	6	8	12
50-59	23	32	29
60-69	29	32	16
70-79	25	12	6
80+	14	11	14

Chart 7

How many hours per week on average do you ACTUALLY work when in CRUNCH time?

(2004- 2009-2014)
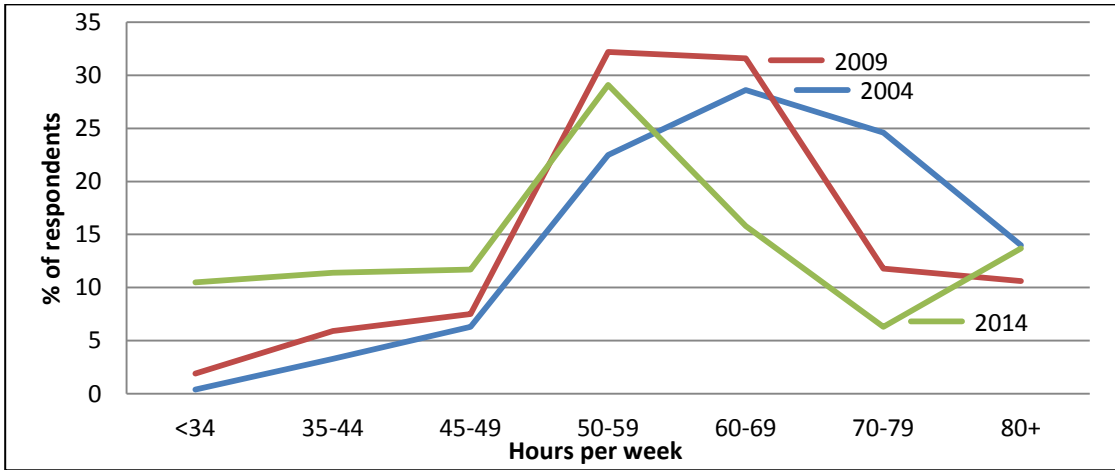
Again to mirror the approach for regular schedule hours above, Chart 8 illustrates the decreasing trend in crunch time for both expected hours and actual hours worked between 2009 and 2014. This chart also allows a comparison between the two where we again see a slight tendency for developers to work more hours than they are officially or ostensibly expected to at the high ends of the spectrum.

Chart 8

How many hours per week on average are you EXPECTED to work / do you ACTUALLY work when in CRUNCH time? (2009 – 2014)
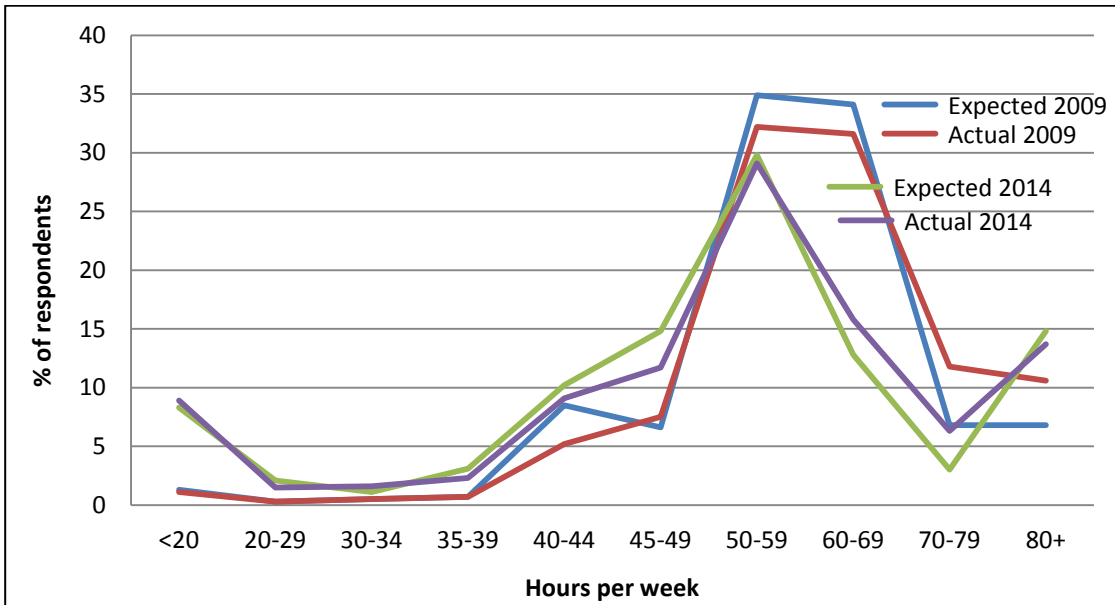
Among the Canadian developers we interviewed, the average crunch work week declared was 63.5 hours/week. This is more than 150% of the normal working week that was reported (40-44 hours) and a high number for an average value. Extreme values ranged from 48 hours as a minimum to 112 hours as a maximum.

Yearly weeks of crunch time on a downward trend

To have a better picture of the practice of crunch, we also have to account for the number of weeks in a year during which developers are asked to work in crunch. The question of actual weeks working in crunch was not addressed that precisely in 2004, so we compare 2009 and 2014 (Table 10).

In line with the discussion above, we see first and foremost that there is a clear increase in studios that work without crunch time. Where 9% did not work in crunch at all, or worked less than one week in 2009, in 2014 it is close to 25%.

As well, the data for 2014 show that crunch time for fewer than 5 weeks in a year is more widespread, while 5-9 weeks/year is less frequent, as are all the longer durations.

- In 2009, 70% of the respondents were working in crunch for fewer than 15 weeks a year. This figure increases to 79% if we include respondents who never crunch.
- In 2014, 65% of the respondents were working in crunch for fewer than 15 weeks a year. Again, this figure rises to 90% if we include respondents who never crunch.

This suggests that there really is an improvement in yearly duration of crunch time and that working without crunch is possible. That said, cut another way, in 2009, 18.4% of respondents reported working 10 to 15 weeks of crunch per year. This dropped to 11.3% in 2014, but still represents a large group of developers. Despite the net progress, 10 weeks of crunch is 20% of the year, and can challenge health and other aspects of your life (Chait Barnett, 2004; Chatzitheochari & Arber, 2009; CPRN, 2009; Dembe, 2009; Gibb, Fergusson, David & Horwood, 2012; Green, 2001; Ishida, 2000; Jacobs & Gersen, 2001; Kanai, 2009; Kobayashi, Suzuki, Takao & Doi, 2012; O'Reilly & Rosato, 2013; Virtanen, Heikkilä, Jokela, Ferrie, Batty, Vahtera, Kivimäki, 2012; Virtanen, Ferrie, Singh-Manoux, Shipley, Stansfeld, Marmot, Ahola, Vahtera, Kivimaki, 2011; Wooden & Loundes, 2001).

Table 10

On average how many weeks per year do you crunch?

	2009	2014
0	9	25
0.5-4	26	35
5-9	26	19
10-14	18	11
15-19	6	4
20-24	6	3
25-29	4	1
30-34	2	1
35-39	1	1
40-44	1	0
45-49	1	0
50-52	1	0

Chart 9 presents a graphical illustration of the reduction in yearly weeks of crunch.

Chart 9

On average how many weeks per year do you crunch? (2009 - 2014)
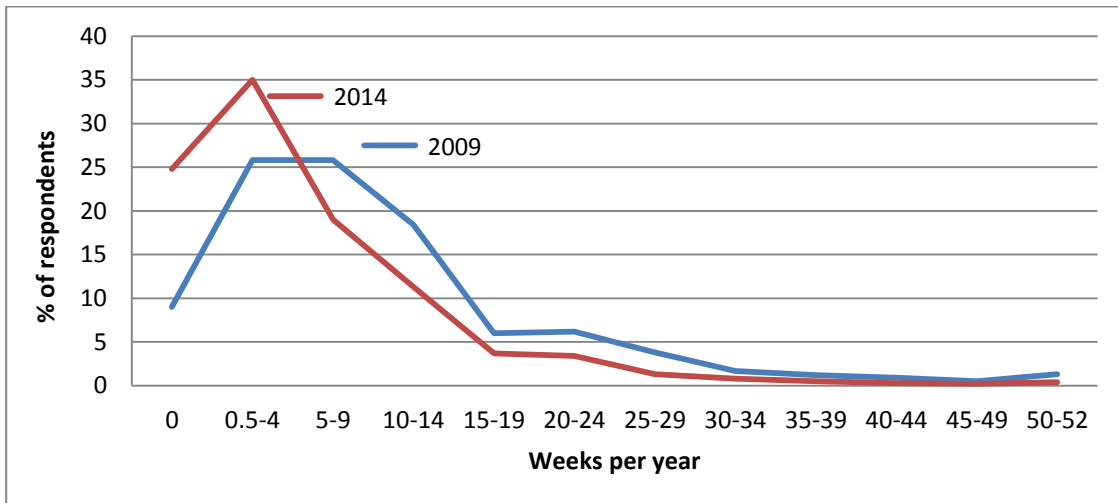
This question of how often the company has crunch times was asked in a very different way in 2004. Yet the 2004 data still serve to highlight the working conditions of videogame developers in crunch, particularly as organized around project management scheduling principles that are very common in the industry. As shown in Table 11, 62% of respondents in 2004 were compelled to answer a call to crunch before every milestone. This helps to illustrate the common criticism about poor project management in the game making business.

Unfortunately, the "monthly or more" category is not commensurable with the other categories, and prevents us from knowing more about how often milestones are coming.

Table 11

How often does your company have "crunch times" during which most members of a team work longer hours than usual? (2004)

	% of respondents
Never	1
Only during final beta testing	20
Before every milestone	62
Monthly or more	17

Weeks in a row of crunch time on a downward trend

Table 12 and Chart 10 show the number of weeks in a row that developers are engaged in crunch hours. We see that as with other measures of crunch, this one also marks a downward trend. The percentage of respondents working in crunch for fewer than 10 weeks in a row (excluding those who never crunch) increases from 77% in 2004 to 75% in 2009 and to 92% in 2014.

We can get more detailed data from the latter surveys; the 2004 survey did not provide options beyond 10+ weeks. For instance, in 2009, 83% of the respondents were working in crunch for fewer than 15 weeks in in a row (excluding those who do not work in crunch). More than 68% of the respondents were in the same situation in 2014.

All of this is good news, however, more than 2 weeks of crunch in a row is still a lot and can challenge health and other aspects of your life. Five weeks in a row is much worse. How many respondents are in this situation? Again a declining trend: 15% in 2004, 15% work 5 to 9 weeks in a row in 2009, 9% in 2014.

Table 12

On average how many weeks in a row do you crunch?

	2004	**2009**	**2014**
0		10	28
.5-4	62	60	55
5-9	15	15	9
10-14	22	8	4
15-19		2	1
20-24		2	2
25-29		1	0
30-34		1	0
35-39		0	0
40-44		0	0
45-49		0	0
50-52		1	0

Chart 10

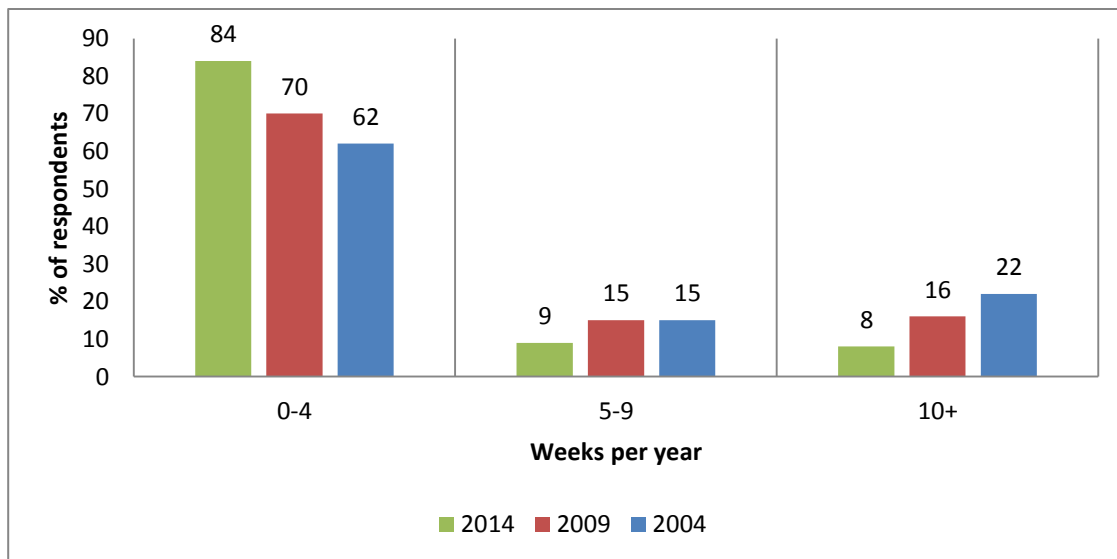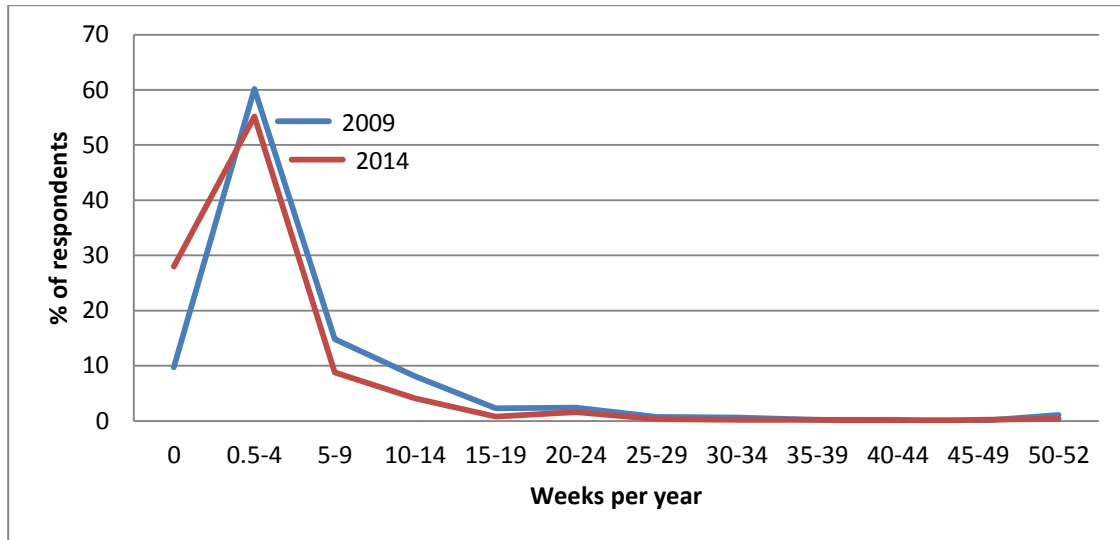**On average how many weeks in a row do you crunch? (2004 – 2009 – 2014)**

Chart 11 similarly illustrates the downward trend in the number of weeks in a row developers can be asked to crunch, taking advantage of the more detailed data collected since 2009.

Chart 11

On average how many weeks in a row do you crunch? (2009 – 2014)

The legal framework

The term *crunch* may be purposefully used to avoid any association with the industrial and bureaucratic notion of *overtime* which is common among hourly wage earners. While legal frameworks in countries of the Northern-Western world usually provide an obligation to pay salaried workers at a premium rate beyond the normal weekly hours, they usually exclude some higher categories of workers from these provisions. The definition of these categories varies, often excluding managers and executives, sometimes high-technology workers, sometimes professionals. Provisions vary as well.

US legislation on overtime

The US Federal Act on overtime payment contained in the US Fair Labor Standards Act (FLSA) sets the provisions for overtime pay; any employee who works over 40 hours a week is entitled to receive 1.5 times the regular wage rate. The employer is not required to pay overtime for work on holidays, days of rest, or on weekends unless the hours worked on those would regularly qualify as overtime. Hours averaging is not allowed over two or more weeks (US Department of Labor, nd).

However, the law sets a yearly income threshold over which private sector employees do not qualify for time-and-a-half pay if they work more than 40 hours per week. That threshold was $23,660 US per year in 2014, which means $455.00 USD per week or an hourly wage rate

of $27.63 USD. Many skilled computer professionals are exempt from overtime pay, not only for being paid at or above these rates, but explicitly:

> [The skilled computer professionals] must be employed as a computer systems analyst, computer programmer, software engineer or other similarly skilled worker in the computer field performing the duties described below…
>
> 1) The application of systems analysis techniques and procedures, including consulting with users, to determine hardware, software or system functional specifications;
>
> 2) The design, development, documentation, analysis, creation, testing or modification of computer systems or programs, including prototypes, based on and related to user or system design specifications;
>
> 3) The design, documentation, testing, creation or modification of computer programs related to machine operating systems; or
>
> 4) A combination of the aforementioned duties, the performance of which requires the same level of skills. (US Department of Labor, 2008)

It is important to note that this exemption does not include workers whose work is only "highly dependent upon or facilitated by the use of computers and software programs… but who are not primarily engaged in computer systems analysis and programming…" (US Department of Labor, 2008).

Among US states with high concentrations of high-tech workers, most tend to follow the federal precedent for exemption criteria (e.g., New York and Texas). California has a more detailed set of laws dealing with computer workers. Under Section 515.5 of the California Labour Code, employees in the "computer software field" are classified as professional employees and thus exempted from the laws regulating hours and days of work (including overtime pay), minimum wages, meal periods and rest periods if their work meets certain criteria (Industrial Welfare Commission, 2002). One of the criteria includes a list of primary duties that fit many of the jobs in the video game industry (e.g., design, development, documentation, analysis, creation, testing, or modification of computer systems or programs; documentation, testing, creation, or modification of computer programs related to the design of software or hardware for computer operating systems).

As well, under the Order for Professional, Technical, Clerical, Mechanical and Similar Occupations, specifically included in the definition of exempt professional and technical workers are: audio-visual technicians, communications and sound technicians, computer programmers and operators, and graphic arts technicians (Industrial Welfare Commission, 2002). A second criterion for overtime exemption for computer software employees (Section 515.5(a)(3)), updated as of January 1, 2015, is if the employee's hourly pay is a minimum of $41.27 USD or their annual salary is not less than $85,981.40 for full-time employment (Division of Labour Standards Enforcement, 2015).

Quebec legislation on overtime

It is common practice in project-based organisations not to pay overtime work at a premium rate, and not even to pay at the regular rate as well (Campbell, 2002, 2003; Hart & Ma, 2008; Mizunoya, 2002).

In Quebec, the legislative provisions clearly state that an employer who explicitly asks an employee to work overtime must pay for the overtime hours (under the Act respecting labour standards (ARLS, chapter N-1.1, sec. 52-55)). Conversely, if the employer does not want to pay for the overtime, they cannot ask, much less require an employee to work it. Yet, game studios don't compensate crunch time with a premium added to hourly wages. Instead, the existence of overtime is more or less covered up by the industry; indeed, the cover-up starts with the use of the term 'crunch time' rather than 'overtime'.

The ARLS in Quebec excludes certain employees from its benefits, including senior managers [ARLS, sec. 3(6)] and other managers who are not subject to the provisions regarding payment of overtime [ALS, sec. 54(3)]. Game developers could be included in the definition of employees covered by the Act.

The story of overtime then continues with the fact that developers are never actually compelled to put in overtime (it is often different for game testers, who are paid according to an hourly rate and are often compensated for overtime in Canada). Project managers explain what needs to be done for the project, raise the possibility or suggest to employees that overtime might be a good idea, and the developers decide to stay at work, *on their own initiative*. Sometimes managers mention two possible forms of compensation, bonuses and time off in lieu. In studios it is often the case that no records are kept of overtime hours because any accounting of those hours would then be equivalent to admitting that overtime exists. It could then be challenged as a violation of the labour standards laws if it is not paid at a premium rate. According to past interviews, some studios go one step further and ask developers to sign some formal time sheets declaring *normal* hours, regardless of the real number of hours worked (Legault & Ouellet, 2012).

Another exception to the application of overtime compensation is based on case law in Quebec and rules out the claims to overtime pay by employees who, though not holding any management role, are hired under contracts providing yearly compensation rates. Two recent decisions have dismissed the complaints of airline pilots'[1] and software designers'[2] to this effect. These decisions assert that an agreed hourly rate is required for an employee to claim overtime pay based on the Act. However, these are decisions made by lower level courts and we must bear in mind that such a case law trend could be reversed.

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[1] Québec (gouvernement du) (Service aérien gouvernemental) et Syndicat de la fonction publique et parapublique du Québec, 2014 QCCTA 241.

[2] Commission des normes du travail c. Solutions Mindready inc., 2006 QCCQ 11439.

To this end, an employee cannot simply make an hourly rate up by dividing a yearly rate by a certain amount of regular hours; the hourly rate must have been agreed on. Some respondents in Toronto seem to be aware of this trend.

> There was no crunch at [studio]. No, because we were paid hourly. (M-01-18-T-C-17-01-14-05-13-JT)

British Columbia legislation on overtime

The province of British Columbia clearly states in its Employment Standards Regulation that the hours of work provisions of the Act, including those governing meal breaks, split shifts, minimum daily pay and hours free from work each week, as well as the overtime and statutory holiday provisions, do not apply to "high technology professionals" (including video game developers). To meet the need for flexibility in the workplace, the Act allows employers and employees to enter into "averaging agreements" - agreements that permit hours of work to be averaged over one, two, three or four weeks.

Ontario legislation on overtime

According to Section VIII of the Employment Standards Act (ESA) (ESA, 2000), in the province of Ontario, employees are eligible for overtime pay at the rate of 1.5 times the regular wage rate if they work more than 44 hours a week and this overtime is calculated over a week or longer period which allows for averaging of hours. However, under Ontario Regulation 285/01, s. 8(I) "information technology professionals" are exempt from those rules and not entitled to overtime pay. Information technology professionals are also not covered by Section VII of the Act which pertains to hours of work and eating periods:
- the daily and weekly limits on hours of work (8 and 48 hours, respectively under the Act);
- the daily rest period rule (generally 11 consecutive hours off work);
- the time off between shifts rule (8 hours with some exceptions);
- the weekly/bi-weekly rest period rule (24 consecutive hours off work in each week or 48 consecutive hours off work in every period of two consecutive work weeks);
- and they are also not entitled to an eating period (30 minutes free from work required after working 5 hours in a row) (Ontario Regulation 285/01, s. 4(3)(b)).

In addition to "information technology professionals", persons employed in the recorded visual and audio-visual entertainment production industry are also exempt from the Section VII of the Act (Ontario Regulation 285/01, s. 4 (3); Ontario Regulation 552/05, s. 2), but they are covered by the overtime pay legislation.

The Act clearly stipulates that "the industry of producing…video games" is excluded from the definition of the recorded visual and audio-visual entertainment production industry.

Therefore, the legislation for information technology professionals would apply for those video game industry workers who fit that definition. Under the Act, information technology professionals are defined as "employees who primarily investigate, analyze, design, develop, implement, operate or manage information systems based on computers and related technologies using specialized knowledge and professional judgement." (Ontario Regulation 285/01)

Voluntary or imposed? Pressure to crunch

Whether or not actively responding to a legal framework, either general labor standards (Canada) or potential class actions (US), employers often avoid explicitly asking for overtime work or explicitly requiring an employee to work it. Rather they prefer to refer implicitly to the needs of the project, the problems in the schedule, or the additional work that needs to be done while they are having casual conversations with developers. This then puts the onus on the employee and leaves room for what then seems like a willful decision to stay at work at the end of the day.

> Based on Canadian legal provisions, we must notice that while game testers are often compensated for overtime in Canada (because they are usually paid according to an hourly rate), developers are not.
>
> In interview material, we can observe that among 32 respondents who discussed the way they are requested to work overtime, a third are explicitly asked to do so, while two thirds are implicitly required. Among those who are asked explicitly, 2 are testers, and 3 testers are implicitly asked; the rest are developers and they are evenly distributed in the two groups.
>
> We must also note that "explicitly asking" someone to stay at work does not keep management from asking on very short notice. Otherwise, Canadian respondents in 2013-14 still mostly mention managers "**implicitly** asking", as they did in 2008 (Legault & Ouellet, 2012).

CONCLUSION

This report relies on data from three IGDA surveys over a 10 year period (2004, 2009, 2014) and over 150 video game developers over two complementary time periods (2008, 2013-14) to paint a picture of the evolution in working time practices at game development studios.

Overall the data suggest a reduction in regular hours worked as well as a reduction in the practice of 'crunch' (extended hours usually toward a specific deadline or milestone). This reduction in crunch time has occurred across the multiple dimensions of crunch.

First, there has been a reduction in terms of the percentage of developers who are working at studios that practice crunch or who engage in crunch as part of their work.

Second, there has been a reduction in the hours that make up a typical week of crunch – in other words, developers report fewer hours as the typical crunch week than they used to.

Third, there has been a reduction in the number of times a year developers engage in episodes of crunch.

Fourth there has been a reduction in the length of the typical crunch episode in terms of weeks spent.

These trends are positive for the video game industry as almost universally the survey data point to downward trends in working time. This raises hope about what has been such a problematic issue for the industry.

However, many individual experiences can be lost in generalized survey data and a good many developers are still working a whole lot of hours. Even on these pages, we can see that there is no real upward limit to working time for some respondents: Chart 7 shows that some respondents can work up to 80 hours a week or more during crunch time, though they form a reduced share of the population. Chart 9 shows that some respondents can work up to 40 weeks a year in crunch, though they also form a reduced share of the population. Finally, Table 9 shows that some respondents can work up to 25 weeks in a row in crunch, though they also form a reduced share of the population.

As well, ingrained studio practices of many game companies have yet to change with regards to crunch and the legal system enables managers to engage in poor practices. With this good news in hand, developers still too often fall prey to supposed industry norms and culture and commit themselves to a work environment that can rob them of their love of the game.

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